Management Accountants' Perception of their Role in Accounting for Sustainable Development – An exploratory study

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Abstract

Purpose – The purpose of this paper is to examine the perceptions that management accountants have of their roles in the accounting for sustainable development in their organisations. A sample of small-medium and large New Zealand businesses were approached for this research to canvas their opinions on their involvement as management accountants in this role. The study also examined whether there were any barriers to management accountants becoming engaged in sustainable development activities in their businesses. This study therefore extends the limited literature on management accountants' role and involvement in accounting for sustainable development by the organisations that employ them.

Design/methodology/approach – The paper draws arguments from prior literature to identify the roles that management accountants play in accounting for sustainable development. The perceptions that management accountants have of their roles in accounting for sustainable development are examined by conducting interviews and surveys of management accountants from various organisations in New Zealand. The study is informed by legitimacy theory.

Findings –Management accountants of small-medium organisations in New Zealand play a limited role in accounting for sustainable development, compared to management accountants of larger organisations. The correlation between the type of organisation and their overall goals for achieving sustainable development are closely linked with the roles the organisations' management accountants play in accounting for sustainable development.

Research limitations/implications – This research is limited as it is only an exploratory study with a small sample of small-medium and large businesses in New Zealand. The influence of management accountants is analysed in order to explain how management accounting practices are translated at organisational level. There is a need for greater acceptance by senior management of the role management accountants could play in accounting for sustainable development.

Practical implications – This paper may help management accountants, of both small-medium and larger organisations, to advance accounting for sustainable development within their organisations by actively engaging with the issues that have deterred such advancement. The paper is significant to teaching as well as to practitioners as the paper identifies a perceived lack of a role for management accountants in accounting for sustainable development. As such questions are raised as to whether accounting education provides an environmentally literate management accountant. The pre-existing literature and the empirical evidence gathered from this paper suggest that further research is needed to better understand the emerging roles of management accountants as facilitators of decision making within organisations concerned with issues of sustainable development.

Originality/value – This paper provides a review of current debates and positions of accounting for sustainable development as well as the barriers management accountants face in getting engaged in accounting for sustainable development initiatives.

Key words: management accountants, sustainable development, accounting, role

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1. Introduction

There is a belief that accounting is supposed to serve the public interest and it has been presented that central to the public interest is the pursuit of sustainability (Gray & Collison, 2002). Since the 1990s, much research has focussed on the issue of accounting for sustainable development. For instance, Gray, Bebbington and Walters in 1993 presented that accountants have a major role to play in environmental issues, "both through their traditional roles of recording and reporting financial details and through their roles as business managers" (p. 3). They even described how accountants' jobs will change as a consequence of the environmental management issues that they will need to be involved in. As this paper focuses on management accountants' role in accounting for sustainable development, we have extracted the changes that Gray et al (1993) envisaged for this group of accountants:

Management accountant

- Business plans including new costs, capital items and revenue projections.
- Investment appraisal to evaluate environmental costs/benefits.
- Cost/benefit analysis of environmental improvement.
- Cost analysis/efficiency improvement programmes. (p. 7)

They also argued that organisations cannot fully embrace the need for a substantial response to the worldwide environmental crisis until all sectors of a business/organisation respond. They however noted that the response from the accounting and finance communities had been "fairly lukewarm and superficial" (p. 10). Milne (1996) argued that "corporate accounting in general, and management accounting in particular, have ignored a wide range of non-market activities that are associated with private sector organisations and their impact on the biophysical environment" (p. 135), and that "the formal decision analysis invoked in traditional management accounting neglects the social cost and benefits of corporate activities" (ibid). It may appear that little has changed with the status quo. Gray and Bebbington (2000) wrote that management accountants were cajoled into responding to environmental issues. They explain that accountants have not only been slow but also reluctant to initiate the changes that environment management systems (EMS) require of the accounting system. In the corporate decision process, accountants provide the necessary financial information required to plan and evaluate the performance of the organisation (Wilmshurst & Frost, 2001). Often, it is the financial consequences of an action which determines acceptability of projects. Wilmshurst and Frost (2001) presents that it may be irresponsible of management not to consider all the costs (and revenues) likely to be associated with business activities.

Extensive research literature shows that there is an overwhelming support over the need for sustainable development, with proponents pushing for better quality information in regards to sustainable practices (Albelda, 2011; Ball, 2005; Bebbington & Gray, 2001; Wilmshurst & Frost, 2001). Sustainable development has three dimensions consisting of economic viability, social responsibility, and environmental responsibility (Elkington, 2004, p. 2). The three dimensions are presented with opportunity costs and trade-offs between each dimension. As Gould (2011) states, "social and environmental reasonability cannot stand in isolation from economic viability" (p. 1). Therefore, it is crucial that management accountants and managers need to consider sustainable development as an integral part of their decision making (Milne, 1996; Parker, 2000; Wilmshurst & Frost, 2001; Ferreira, Moulang & Hendro, 2010; Albelda, 2011). Informants to decision makers, such as management accountants, should incorporate sustainable development practices into the decision making tools of the twenty first century (Parker, 2005) if we are to expect a viable future. Although there is an overwhelming support for a movement towards sustainable development, little empirical evidence exists regarding how extensive the roles of management accountants have become in the accounting for sustainable development (Albelda, 2011; Wilmshurst & Frost, 2001). The availability of literature showing changes in management accounting practices to what Gray et al (1993) envisaged as happening is also limited. Further it would appear that very little has been done to provide the steps that ought to be taken to facilitate decision making of organisations' sustainable development issues (Albelda, 2011).

The purpose of this paper is to examine the perceptions that management accountants have of their roles in the accounting for sustainable development in their organisations. The aim of the paper is to extend the limited literature on management accountants' role in accounting for sustainable development by businesses. This study is important in exploring the perceptions that management accountants themselves have of their role in achieving sustainable development and the reporting of it in their own organisations. It is envisaged that by asking them these questions, they as management accountants can promote a better understanding of their own contributions to this process. Ahrens and Chapman (2007) point out that management accounting practices are an arrangement that institutes a framework in which "organisational members negotiate strategies, budgets, and performance targets. They discuss ways of realising them, alert others to contingencies, give orders, follow, dispute, or circumvent instructions, generate and compare reports, give and receive advice, find excuses, take corrective action, etc" (p.7). Burnett and Hansen (2008) and Sartorius *et al.,* (2007) posit that management accountants are facilitators of decision making within organisations. Albelda (2011) calls for management accountants to include issues of sustainable development into this facilitation process so that organisations can make decisions surrounding sustainable development. The next section reviews the literature on management accountants and their engagement in the accounting for sustainable development. Section three delineates the theoretical framework of legitimacy theory that informs this study. This is followed by the research method discussion in section four. Section five presents the findings of the study. This is followed by section six bringing the narrative together through a discussion of the findings and conclusion of the paper.

2. Management Accountants and Accounting for Sustainable development – Prior Literature

This section reviews prior literature on the role that management accountants play in sustainable development. The research questions are drawn from this literature review. The issue of sustainable development has grown since its introduction in the Brundtland report in 1987 where sustainability was first defined as the development that meets the needs of the present without comprising the ability of future generations to meet their own needs[1] (Brundtland, 1987). Gray (2010) notes sustainability is a contested notion. He maintains that while the Brundtland definition generated some debate, there remains a widespread agreement that whatever sustainable development is, it is a "good thing" (p.53). He argues that sustainable development involves the preservation and/or maintenance of a finite and crucial environment and incurs some duty of social justice - between and within generations. Gray also argues that on a global scale, this issue has become a "contested terrain of global planetary desecration, of human and other species suffering and of social justice addressed through the language of sustainability, sustainable development and commerce" (p.48). Importantly, Gray enunciates that "it is increasingly well-established in the literature that most businesses reporting on sustainability and much business representative activity around sustainability *actually have little, if anything to do with sustainability*" (italics for emphasis, ibid, p. 48). It is further emphasised by Gray (2010) that there needs to be a more nuanced

[1] While we take a strong sustainability view with the inter-generational quote, both strong and weak sustainability (accountants' interest in business sustainability) have been tested in the survey and interviews.

understanding of what ‘sustainability’ actually is and how, if at all, it can have any empirical meaning at the level of the organisation. It would therefore appear that there are a number of phrases being used in published corporate material as well as research literature all pertaining to sustainability, sustainable development and the like and yet according to Gray (2010), is merely just that, a phrase being used rather than any real sustainable development in the businesses.

Schaltegger and Burritt (2010), for instance reveal that sustainability accounting is sometimes used as a new term for environmental accounting (p.377). According to Schaltegger and Burritt (2010), sustainability accounting is the term which describes new information management and accounting methods that attempts to create and provide high quality, relevant information to support corporations in relation to their sustainable development. Schaltegger and Burritt (2010) point out:

> Sustainability accounting describes a subset of accounting that deals with activities, methods and systems to record, analyse and report:
>
> - First, environmentally and socially induced financial impacts,
> - Second, ecological and social impacts of a defined economic system (e.g., the company, production site, nation, etc), and
> - Third, and perhaps most important, the interactions and linkages between social, environmental and economic issues constituting the three dimensions of sustainability. (p.377).

Certainly, the importance of sustainable development is changing the way businesses think and react. If Schaltegger and Burritt’s description of sustainability accounting is indeed making an impact with businesses using voluntary initiatives to integrate social, economic, and ecological issues into their organisations’ structure and external reporting as a means of seeking a form of competitive advantage (Jasch, 2003; Litting & Griebler, 2005; Adams & Frost, 2008; Albelda, 2011); there should be far-reaching implications on the environment world-wide. The implications for accountants via their involvement in not only reporting the activities but actually engaging with sustainable business practices as financial and management accountants can only be a step in the right direction in bringing out the prominent roles that they can have in accounting for sustainable development; which to date has been lamented as being very scant. At present, sustainable development enlists the idea that we can generate a form of competitive advantage for organisations by using sustainable development practices in areas that were never economically explored (Albelda, 2011).

The present state of the concept of sustainable development sees the emergence of various practices, systems, and tools that can be incorporated into organisations. The implementation of environmental management systems is one example of a voluntary certification scheme from the International Organisation for Standardisation with the ISO 14000 on Environment Management. Compliance with such standards shows an organisation's commitment to environmental issues and achieving sustainable development. The ISO website indicates that the 14000 family addresses various aspects of environmental management and that the very first two standards, ISO 14001:2004 and ISO 14004:2004 deal with environmental management systems (EMS) where ISO 14001:2004 provides the requirements for an EMS and ISO 14004:2004 gives general EMS guidelines. Other systems include the Eco-Management and Audit Scheme, which was developed by the European Commission on Environment. This scheme requires organisations to publicly report on the organisations environmental performance, and to renew their presence on an environmental register (European Commission Environment, 2011). Other tools to help organisations become sustainability compliant include the use of Balanced Scorecard, Environmental Management Accounting, and the Triple Bottom Line reporting (Jasch, 2003; Elkington, 2004; IFAC, 2011; Horngren et al., 2011; Wilmshurst & Frost, 2001).

The accountant's role may depend on his or her responsibilities ranging from being involved in environmental audits through the internal audit programme, to appraising investment proposals with an eye to the environmental benefits, to the analysis of waste and energy costs in order to encourage their reduction, and to the provision of information to support environmental management (Gray *et al.,* 1993). Historically, the role of management accountants has been obscured by the more prominent roles of accountants who are engaged in financial reporting, auditing, and taxation activities (Parker, 2000). The role of management accountants was mainly seen to be in direct contribution to the planning and control of organisational operations (Milne, 1996; Parker, 2000). Early roles of management accountants, according to Parker (2000) were prescriptive, focusing mainly on potential cost decreases and flows of economic benefits to the organisation. He further states that the earlier roles of management accountants included: "designing and maintaining management information systems, providing advice on operational decisions, programs and projects, managing and organising personnel, and developing financial plans" (p. 47). Hopper (1980) points out two contrasting roles of management accountants, namely the book-keeper and the service-aid, which is deduced from their work on accountancy system design. The book-keeper is concerned with the implementation and administration of financial systems to enable superiors to measure the performance of subordinates (Hopper, 1980). Increasingly management accountants are seen to be playing an important role in organisational decision making processes (Byrne & Pierce, 2007). A few studies have presented the roles of management accountants using various descriptors denoting a bean counter type role (Hopper, 1980; Vaivio & Kokko, 2006; Byrne & Pierce, 2007) and some studies denoting a business partner type role (Granlund & Lukka, 1998, Sharma et al., 2010) where the business partner role generally denotes an increasing emphasis on a more strategic, forward-looking and collaborative role orientation.

However, with passage of time, the traditional roles of management accountants have evolved (Albelda, 2011). Burnett and Hansen (2008) and Myburgh (2001) state that empirical evidence shows that the relationship between environmental and economic performance has increased, and so has management accountants' roles as facilitators of decision making, with new performance measures and analysis tools which integrates environmental issues into their roles. Albelda (2011) points out how the role of management accountants and accounting practices acted as facilitators of sustainable development. Two different aspects emerged from his interviews with management accountants in relation to environmental costs. Firstly, Albelda found that management accountants referred to the identification and definition of environmental costs explicitly within the costing systems. Secondly, Albelda indicated that management accountants explained how the allocation criteria had been updated to reduce the arbitrariness of moving some environmental costs away from overhead accounts.

Wilmshurst and Frost (2001) noted that there is a limited participation of accountants in accounting for sustainable development. They suggest that this may reflect a lack of understanding of the potential role of the accountant and accounting could play as a member of the sustainable development team. Furthermore, Wilmshurst and Frost (2001) note that "sustainability accounting could incorporate accounting mechanisms that deal with the valuation of environmental impact, environmental performance evaluation, flow of financial information and the monitoring of the success of implementation of environmentally related actions" (p.136). They point out that the role for the accountant can be perceived as two dimensional: 1) involvement in the internal operations of the company, focusing upon performance and compliance concerns, and 2) in the external dimension relating to the disclosure of economic information to external report users. Therefore, Wilmshurst and Frost (2001) call for senior personnel to place greater acceptance of the role that accountants could and should play in the sustainable development process.

CIMA (2011), also suggest that management accountants must now take a more active role in sustainable development (p. 2). The CIMA report on 'Sustainability and the

Role of the Management Accountant' focuses on the role of management accountants within organisations and the active part they take in decision-making and strategy formulation. The report presented the idea that management accountants can play a more active role in strategy formulation around sustainable development. Furthermore, empirical evidence from CIMA's report suggests that only 9% of management accountants within organisations, currently play an active role in influencing the organisations sustainability strategy through the management accountants' roles as facilitators of decision-making (CIMA, 2011, p. 3).While present opinions calls for management accountants to become active decision facilitators within organisations; research shows that little attention has been focused on sustainable development, management accounting practices and the engagement of management accountants in the organisations (Berry *et al*., 2009). Research studies (Ball, 2005 and Adams and Frost, 2008) state that management accounting practices have and are still guided by underlying values of economic prosperity.

Dimtrov and Davey (2011) point out that a possible driver of sustainable accounting is that proponents are deliberately taking up a marketing strategy and positioning themselves to gain a competitive advantage. The authors also articulate that goals of sustainable development are determined from the context of the stakeholder. Massoud *et al.,* (2010) point out that improving environmental performance and enhancing company image are salient drivers of accounting for sustainable development. Dimtrov and Davey (2011) also highlight the factors that act as barriers to sustainable development. Some of these factors are the costs of producing sustainability reports outweighing the benefits and a lack of drive from top-level management to implement sustainable development practices. Other barriers to accounting for sustainable development identified by Massoud *et al.,* (2010) include a lack of demand from customers or stakeholders, cost and lack of institutional support. Despite the shortcomings of supporting empirical evidence, and literature highlighting the lack of a role by management accountants in accounting for sustainable development, several tools have been developed to aid management accountants as facilitators of decision making surrounding sustainable development in organisations (Wilmshurst & Frost, 2001; Adams and Frost, 2008; Albelda, 2011). Albelda (2011) points out a key tool supporting the facilitation of decision-making is through the use and implementation of an Environmental Management Accounting System (p. 80).

The environmental management accounting system (EMAS) is regarded as a system used to reduce an organisation's environmental impacts. It is perceived as a scheme that signals environmental friendliness to internal and external stakeholders of organisations

(Pedersen, 2007; Korten, 2005; Jacobs & Sadler, 1990; Wilmshurst & Frost, 2001). According to Massoud *et al.,* (2010), the emphasis on environmental quality has stimulated the development of EMAS. EMAS allows organisations to be systematic in the evaluation of their processes and activities with regard to interaction with environment. Hence the EMAS controls these activities and ensures that established objectives and targets are being met. Sustainability is now at a stage where it no longer requires defining, but requires the implementation of sustainable development practices into organisations (Porter & Kramer, 2006). Several reasons exist as to why management accountants should engage in sustainable development: the first being emerging jurisdictional requirements which include sustainable development requirements for organisations; the second being calls from sovereign leaders that organisations should have a greater awareness of sustainable development; the third reason is because there is social change influencing society's perceptions on sustainability; and finally the fourth reason is that there have been more calls for accountants to engage in sustainable development practices (Milne, 1996; Parker, 2000; Berry et al., 2009; Ferreira et al., 2010).

The research questions that emerge from the literature are: what are perceptions that management accountants have of their roles in accounting for sustainable development? Are there any perceived barriers to their involvement in management accounting practices that involve sustainable development activities? The next section delineates the theoretical basis for the study.

3. Theoretical Basis of Legitimacy Theory

The choice of legitimacy theory[2] is based on the notion that accounting for sustainable development and the associated management accountants' role in sustainable development is used as a communication mechanism to inform and/ or manipulate the perception of the firm's actions. Legitimacy theory has provided theoretical motivation for social disclosure and the role of accountants in providing such information (Van der Laan, 2009; De Villiers & Lubbe, 2001). Legitimacy theory is used as a theoretical framework to inform our findings on the role of management accountants in accounting for sustainable development.

[2] Institutional theory is related to legitimacy theory in that institutional environment can influence the development of structure in organisations. Innovation structures that improve technical efficiency in early adopting organisations are legitimised in their environment. Meyer and Rowan (1977) argue that often these institutionalised myths are merely adopted ceremoniously in order for the organisation to gain or maintain legitimacy in the institutional environment.

Legitimacy theory posits that organisations attempt to operate within the bounds and norms of their respective citizens[3] (Suchman, 1995; Fogarty, 1996; Guthrie & Parker, 1989; Brown & Deegan, 1998; Wilmshurst & Frost, 2000; Sharma & Davey, 2013). These bounds and norms change over time, requiring the organisations to be also responsive to these changes. Legitimacy has been defined by Lindblom (1994, p.2) as:

> ...a condition or status which exists when an entity's value system is congruent with the value of the larger social system of which the entity is a part. When a disparity, actual or potential, exists between the two systems, there is a threat to the entity's legitimacy.

Brown and Deegan (1998) further report that if an organisation cannot justify its continued operation, then the community may revoke its 'contract' to continue its operations. This may take the form of consumers reducing or eliminating the demand for the business products, factor suppliers eliminating the supply of labour and financial capital to the business or constituents lobbying government for increased fines, taxes or laws to prohibit those actions that do not conform to societal expectations (Brown & Deegan, 1998). The business firms therefore need to disclose sufficient information for society to evaluate whether it is a good corporate citizen (Guthrie & Parker, 1989). The actions of management in relation to sustainable development may be influenced by their legitimacy concerns.

Legitimacy can be considered a condition or status (Brown & Deegan, 1998) that persists when an entity's value system is congruent with the large social system's value system of which the entity is a part. When a disparity, actual or potential exists between the two value systems, there is a possibility of threat to the entity's legitimacy. Deegan (2002) reports that: "organisations draw on community resources and output both goods and services and waste products to the general environment" (p. 292) and that in order to allow for the organisation's existence, society would expect benefits to exceed costs. Legitimacy theory posits that external factors influence corporate management as well as management accountants seeking to legitimise their activities. Hence, corporate management and management accountants would react to community expectations. The stakeholders within a community shape what activities that companies, as well as members of that community should carry out. These activities should be carried out within the boundaries of what is perceived to be acceptable to that community.

[3] When we state legitimacy theory portrays that organisations attempt to operate within the bounds and norms of their respective citizens, the concept of organisation includes organisational agents which entails accountants.

Legitimacy is a source of resource for an organisation's survival (Oliver, 1991; Meyer & Rowan, 1977). Organisations perceived by stakeholders to be legitimate find it easier to attract economic resources as well as gaining the social and political support necessary for their survival (Oliver, 1991; Ogden & Clarke, 2005; De Villiers & Van Staden, 2006). Suchman (1995) defines legitimacy as "a generalised perception or assumption that the actions of an entity are desirable or appropriate within some socially constructed system of norms, values and definitions" (p.574). Ogden and Clarke (2005) provide some clarity to the definition by highlighting that, legitimacy is a 'perception' or 'assumption' on the part of an organisation's public and although it may be possessed objectively, it is created subjectively (p. 314). Following the adoption of appropriate institutional norms and routines that are consistent with social norms and by conforming to widespread understanding of what are considered typically acceptable (Meyer & Rowan, 1977; Ogden & Clarke, 2005; Sharma & Lawrence, 2008, 2009; Lawrence *et al.,* 2009), legitimacy can be achieved provided powerful stakeholders endorse and support the organisation.

Fogarty (1996) shows that organisations which do not appreciate how their actions are infused with values in terms of meeting the expectations of important constituents may lose support, and thus endanger their continued right to act. The public provision of a sustainable development report may be taken as a mimetic action to legitimise companies from the viewpoint of the wider community (Deegan, 2000; Lawrence *et al*., 2010). External legitimism is essential to an organisation's survival. Hoque et al. (2004) argue that organisations gain legitimacy, resources, stability and enhances their survival prospects by implementing new controls and techniques such as sustainability management accounting practices. The next section sets out the research method for the study.

4. Research Method

There has been limited research evidence on the actual role that management accountants play in accounting for sustainable development. This study undertook to gather data to build a profile on the role that management accountants perceive they play in the accounting for sustainable development in the New Zealand context. The questionnaire survey was directed towards management accountants and focused upon accounting for sustainable development issues and the involvement of management accountants in this area. The questions in the questionnaire survey were adapted from the survey done by Dimtrov and Davey (2011), as well as being drawn from what the literature review revealed about management accountants' involvement in accounting for sustainable development (Albelda, 2011; Milne, 1996; Wilmshurst & Frost, 2001).

The research method consisted of a questionnaire survey and semi-structured interviews of management accountants in various organisations in New Zealand. For the purposes of this study, management accountants were those who engaged in 'planning and control' elements of organisation, maintaining information systems, providing advice on operational decisions, programs and projects, managing and organising personnel, and developing strategic financial plans (Parker, 2005). The surveys were mailed to 30 management accountants of various organisational backgrounds. The 30 surveyed participants were randomly sourced from the yellow pages of Telecom New Zealand directory. They represented different industries within the sample. We chose 30 participants as we believed that this is of an appropriate size to draw results for an exploratory study. Phone calls were made to organisations after approximately two weeks of the mailed survey, this was done to encourage a completed survey to be returned. Twenty-six (26) management accountants returned the surveys. This gave us an 87% successfully completed surveys, this is a reasonable response rate. All questionnaires were fully completed. Through the survey, respondents' answers were quantified by a Likert scale ranging from 1 to 5, with 1 strongly disagree to 5 strongly agree.

Following from the results of the survey, some follow up interviews were conducted with companies. The interviews were done to supplement empirical evidence collected from the questionnaire survey. Eight semi-structured interviews were conducted with four management accountants. There were four follow-up interviews to get better clarity of the information supplied by the management accountants. The interviews lasted between one to one and a half hours and were conducted in the office space of the management accountants. The interviews conducted with the four management accountants involved two from small-medium organisational backgrounds, and two from large organisational background. The two interviewees from small-medium businesses were in the garment manufacturing industry and the building and construction industry respectively. The interviewees from large business organisation were in the banking and finance industry of New Zealand. These interviewees were chosen to provide qualitative data on the perceptions of management accountants on the accounting for sustainable development.

The interviews comprised of questions such as the definition of sustainability, goals in achieving sustainable practices, sustainability reporting, the role of management accountants, and barriers to management accountants in accomplishing sustainable development. The interview evidence was used to supplement the evidence from the survey results. The next section presents the findings for the study.

5. Findings

This section first outlines the results from the survey data, following this will be discussion on the interview evidence. From the findings, several aspects of management accountants' perception of their roles, and barriers to involvement in sustainable development are identified.

5.1 Survey results on management accountants' role in sustainable development

The survey directed at the management accountants focused on the perceptions of their roles, and barriers to accounting for sustainable development. Since the total population identified did not respond, there is, as with all survey questionnaires, an issue of representativeness of the sample (Wilmshurst & Frost, 2001). According to Wilmshurst & Frost (2001), the issue is related to the extent of bias reflected in the respondent sample rather than actual response rate. The surveys revealed findings supporting the role of management accountants in accounting for sustainable development. However, management accountants' possible roles are influenced by the organisation they are working within. Table 1 lists the surveyed participants' organisational sector background.

[Insert Table 1 here]

Table 1 shows that the majority of the participants operated within the Banking and Finance industry followed by the Agricultural, Insurance, Manufacturing and Oil, Gas, Electricity industries of New Zealand. Table 2 shows the structure type of the organisation from which the participants were surveyed.

[Insert Table 2 here]

Table 2, shows 42% of the survey participants worked in owner operated organisations, followed by 23% who were working in NZ Public Companies. From these statistics, it appears that 42% of the participants represented small-medium entities, with 58% of the participants working within large entities. The New Zealand Centre for Small Medium Enterprise (SME) Research indicates that there is no universally accepted definition of a small firm and that in New Zealand there is no official definition. The Centre indicates that the most commonly used criterion to distinguish between large and small firms is the number of people employed (Full time employees (FTEs)) and provides the following definition:

Micro Enterprise - 5 or fewer FTEs; Small Firm - 6 to 49 FTEs and Medium Firm – 50 to 99 FTEs (http://www.massey.ac.nz/massey/research/centres-research/new-zealand-centre-for-sme-research/about-smes/about-smes_home.cfm).

5.1.1 Management accountants' perceptions about drivers for sustainable development

Table 3, reflects management accountants perceptions about the drivers for sustainable development in New Zealand. The table shows that of the 26 participants surveyed, on average 'Adoption of sustainable development encouraging growth of newer technologies' was considered the strongest driver for sustainable development in New Zealand. This category was ranked the highest, with 69% of the participants moderately agreeing with the category as being the main driver, and 19% of participants strongly agreeing. Similarly, this category yielded the highest mean of 3.96, and median of 4. The lowest ranked driver category perceived by management accountants was 'employee retention' with a mean of 2.88 and a median of 3. A perusal of the results show that while 31% moderately agree with employee retention and a total of 27% disagreed, the majority of responses (42%) were on 'Neither' agree nor disagree. This lowest ranked category is contrary to the literature, as it is suggested that organisations that engage in sustainable development are often able to attract and retain employees (Battacharya et al., 2008). 'Adoption of sustainable practices to enhance organisations image' was ranked 2nd as a perceived driver. The accountants have the ability to provide mechanism for holding corporations accountable, and enhancing the image of corporations (Tilt, 2009; Wilmshurst & Frost, 2001). A driver for sustainable development that perhaps should have been ranked higher, was 'Kyoto protocol and possible emissions trading scheme', its ranking at number 6, is possibly reminiscent of the reduced government action being taken to implement the two systems. The high ranking provided to attributes such as 'adoption of sustainable practices enhance organisational image, laws and regulation', pressure from overseas government amongst others demonstrate that the drivers of sustainable development is to gain legitimacy from stakeholders in order to receive continuous support for firms' activities. This aids business firms to maintain a good image of themselves in the community, although it may be more of a myth and ceremony (Meyer & Rowan, 1977; Hoque et al., 2004) and arguably a communicative median to legitimise their corporate activities.

5.1.2 Perceptions of important factors in accounting for sustainable development

The participants were also asked to identify what they thought were the most important factors for an organisation to account for sustainable development. Table 4 shows findings for this issue. The results showed that on average the 'laws and regulations' category was considered the most important for organisations in accounting for sustainable development. This may be because there is now a significant number of legislation that incorporates sustainable development issues. For example in New Zealand there is the Resource Management Act 1993, the Climate Change Response Act 2002 and the Climate Change Response (Emissions Trading) Amendment Act 2008 to name a few. The mean for this category was the highest at 4.36, and of all the categories, this category held the highest median at 5; showing that most participants strongly agreed with this category. The lowest category was 'pressure from overseas governments' as it seems this has little impact on organisations' view on sustainable development. This ranking is further supported with over 61% of the participants scoring between the strongly – moderately disagree range. This category also yielded the lowest mean of 2.44, and of all the categories scored the lowest median of 2. This median of 2, means that on average participants would perceive 'pressure from overseas governments' as moderately disagree in regards to factors of most importance for organisations to achieve sustainable development. Again, the results from the Table 4 seem to be contrary to the literature, with employee retention being ranked 5th, with an average median of 3, being neither agreeing or disagreeing to employee retention. A reason for this gap between literature and survey evidence is perhaps reflective of New Zealand societal values. Literature may have evolved from countries where employee retention is closely correlated with sustainable development; however it appears that sustainability is not an important aspect for employee retention in the New Zealand context. Further, a high mean for factors such as 'laws and regulation, adoption of sustainable practice enhance organisation image' implies that firms tend to comply with these to gain legitimacy from both their legal and other external stakeholders.

5.1.3 Perceived barriers in sustainable development

The perceived barriers for management accountants in accounting for sustainable development are shown in Table 5. The categories were derived from a similar research by Dimitrov and Davey (2011), on 'Sustainable development: what it means to CFO's of New Zealand'. The results showed that on average the highest ranked category as the greatest barrier against accounting for sustainable development for management accountants was that 'sustainability practices are difficult to implement in costing systems and organisations structure'. This category gained 27% support for strongly agreed and 42% support for moderately agreeing across the participants. This category also yielded the highest mean of 3.76, with a median of 4, meaning on average respondents moderately agreed with this category. According to Parker (2000, p.48) conventional accounting fails to account for the full cost of production as it assigns no monetary costs to the consumption of natural resources such as air, fertile land and water. As such, social costs and related benefits are obscured from such reporting. In addition, Parker notes that the accounting rule typically punishes environmentally responsible behaviour. The more an organisation spends on pollution prevention and cleanup, the lower is its net profit and earnings per share. Therefore, management accountants are faced with the challenge of implementing sustainable practice in costing systems (Tilt, 2009; Wilmshurst & Frost, 2001). Wilmshurst & Frost (2001) point out that the role of accountants can be seen in the internal operations of the company with a focus upon performance and compliance concerns.

The lowest ranked perceived barrier for management accountants in accounting for sustainable development was that the 'company is too small therefore adoption of sustainable practices would be considered too much of a burden.' The lowest ranked category shows positive contributions towards sustainable development; as on average it shows that organisation size does not affect the ability of management accountants to implement sustainable development practices.

5.1.4 Types of sustainable development practices management accountants implement

Management accountants were asked about the type of sustainable development practices they implement through their roles as the organisations' management accountant (see Table 6). On average, the highest rated practice that management accountants implement was 'developing organisations systems to become more resource efficient.' Sixty nine per cent (69%) of the participants rated this category as moderately to strongly agree. This category also held the highest mean of 3.75, along with one of the highest median scores of 4 (moderately agree). It would appear that management accountants are concerned with costs and benefits associated with sustainable development accounting issues (Tilt, 2009). The second most ranked practice, was development of organisations systems to excrete the least amount of waste; this practice can be considered as a follow on from the first ranked category; hence its second highest mean score of 3.41. Such information may be provided as part of the 'social contract' between business and society. Information provided under the social contract includes information of relevance to a wider range of stakeholders such as excretion of least amount of waste. Winning stakeholder trust is vital for a company's public perception of business (Tilt, 2009). Surprisingly, the two least used sustainable development practices were the use of Global Reporting Initiative, and comparisons of London Benchmarking group. Both these categories held the lowest mean scores of 1.83, and 1.92

respectively. These were the least used categories by management accountants given that 58% of the surveyed participants were from non-small medium entities (larger organisations). Surprisingly Table 6 also shows that management accountant's possible roles in accounting for sustainable development is relatively limited. As of all the categories the highest median was a 4, where the average median was 3. This finding showed that management accountants tended not to engage in sustainable development accounting practices, as the majority of the scores were 'neither'.

5.1.5 Summary of Survey Findings

The surveys showed findings supporting what management accountants perceive about the concept of sustainable development. As the results showed, management accountants tend to perceive that a driver to the growth of sustainable development is that the concept will generate newer technologies. They also tend to perceive that laws and regulations and organisational image are important factors for organisations achieving sustainable development. This may be in order to gain legitimacy and resources from external stakeholders. The management accountants were asked what they believed the barriers were to accounting for sustainable development. The concept being too difficult to implement into costing systems and organisations structure reflected the highest ranked category; with the lowest barrier, being that the company is too small. Finally, the results showed that of the many different sustainable development techniques management accountants adopt; the one practice most commonly used is development within organisations structure to ensure organisations systems are more resource efficient. In contrast, the least used practice was to use Global Reporting Initiatives for organisation comparisons.

The surveys revealed that management accountants' role in accounting for sustainable development is limited. According to Wilmshurst and Frost (2001), to counter the limited involvement, there is a need for greater acceptance by senior personnel of the possible role that accountants can play in sustainable development practices. Management accountants are involved in internal measurement and identification of social and environmental costs and benefits (Tilt, 2009). Management accountants tend to often achieve sustainable development indirectly, for example through standard management accounting reports. The surveys also revealed this through Table 6 which showed on average the highest ranked management accounting practice management accountants would engage in was 'developing organisation systems to become more resource efficient;' again showing the limited roles management accounting currently play in achieving sustainable development. Nevertheless, sustainable development accounting practices are used by management accountants to defend or maintain legitimacy in the eyes of society and/ or their stakeholders. The next section presents the interview evidence for the study.

[Insert Tables 3, 4, 5, and 6 here]

5.2 Interview evidence

When management accountants were asked whether they accepted the conventional definition of sustainable development, all four management accountants agreed with the definition, but also continued to provide a further synopsis of the concept. The conventional definition for sustainable development is “development which meets the needs of present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987). An interviewee from small-medium enterprises (SMEs) believed that sustainable development was a ‘cue’ for society to start improving on technological advancements towards sustainability, of reducing consumption of resources, and excretion of waste materials. Another interviewee of SMEs added that the concept could only be achieved if organisations were the first to respond, as the interviewee thought it would be highly difficult for consumers to act in a sustainable manner.

When asked whether the organisation had any goals for achieving sustainable development, interviewees from the SMEs did not have any defined organisational goals toward achieving sustainable development. Instead, their organisation’s involvement towards sustainable development was limited by the organisations cash expenditure patterns. The organisations would achieve sustainable development; provided achieving sustainable development would reduce consumption of resources, and hence expenses. In contrast, the interviewee from the large organisation did have an organisation wide goal towards achieving sustainable development which was ‘to reduce carbon emissions, forming strong community partnerships, increasing financial literacy across the people of New Zealand, advocating an ethical supply chain, encouraging a fit and healthy lifestyle of our people, providing access to capital, delivering responsible, fair and quality service to our customers.’

Some organisations and management accountants’ contributions towards sustainable development have been positive through implementing organisational goals for achieving sustainable development. However, for some other organisations that is as far as their contributions goes, with SME interviewees showing little evidence of sustainable development reporting. Both SME interviewees indicated that engaging in sustainable development reporting was too much of a burden, with their possible roles within the organisations negating the use of Triple Bottom Line reporting, or the use of benchmarking standards such as the Global Reporting Initiative. The possible role of management accountants in small-medium organisations is reflective of upper level management decision-makers, as both interviewees pointed out that Triple Bottom Line reporting is not important to their organisation, as social and environmental factors are aspects that their managers do not worry about. Yet in contrast, the possible role of the 2 interviewees from the large organisation did include preparing sustainability reports and comparing sustainability practices against the Global Reporting Initiative, and London Benchmarking Group. This may be in order to maintain a sound image of the organisation amongst stakeholders in order to preserve legitimacy for the organisation.

The interviewees were also asked what their possible roles were in accounting for sustainable development within their organisations. Two distinct forms of management accountants' roles emerged; those management accountants of small medium entities vs. large organisation management accountants. Interviewees from SMEs did not have dedicated roles in accounting for sustainable development, instead their roles followed the traditional roles of management accountants of producing managerial reports, preparing cost benefit analysis, preparing dispatch schedules, and recycling of organisation resources such as paper. In contrast, the management accountant from 2 large organisations' perceived role entailed managing environmental, community, people, supply chain and customer metrics, and this role was influenced by the organisation's goal for achieving sustainable development. This shows that the two management accountants from small-medium entities tend to have perceived subtle roles emphasising the use of sustainable development practices, compared with management accountants and their possible roles in the larger entity. A clear link was evident from interviewing management accountants of the two SMEs that their possible roles in sustainability development were linked with their organisations' ability to finance and gain benefits from sustainability like practices.

An interviewee from a SME stated "we do not have any future plans towards achieving sustainable development as it is a costly exercise. The customers really don't care whether we practice sustainability or not." As when the interviewees were asked what their possible roles and their organisations future plans were in achieving sustainable development, mixed results were gathered. Interviewees from SMEs did not have any clear future goals or policies towards achieving sustainable development, except for those possible roles surrounding the reduction of consumption for finite products, and through roles of improving efficiency and productivity. In contrast, the interviewee of the large organisation future plan for achieving sustainable development included; 'implementing a carbon management software system and creating behaviour changing software systems.' This carbon management software aims to reduce the organisations carbon footprint, by monitoring those activities, which affect sustainable development, and the organisations carbon foot print. For example, travelling to clients, the type of vehicles used, and the amount of electricity recycled using solar energy.

Often organisations' management accountants faced challenges with achieving sustainable development. One of the management accountants posed a question as to 'how you prioritise your resources', with another management accountant stating that extensive costs was the biggest obstacle for trying to achieve sustainable development. An interviewee from a SME pointed out: "the central challenge was prioritising goals. How do you achieve that?" The interviewee thought sustainable development was a long-term goal with high short-term costs, whereas in contrast to this goal is the goal of short-term profit maximisation which many organisations seem to use. `The interviewee also argued that 'when is enough, enough' in terms of achieving sustainable development, or must an organisation continue to strive for sustainable development into the foreseeable future. Similarly, another SME interviewee stated that 'costs' were a big problem in achieving sustainable development, as the interviewee said;

> ironic isn't it, our jobs as management accountants is to try to integrate sustainability software systems; yet simply management accounting like tasks such as cost benefit analysis limits the integration.

The interviewee also stated that the benefits associated with achieving sustainable development is limited as often customers do not distinguish between sustainability achieving organisations, and non-sustainability achieving organisations; hence there is no flow into revenue. In contrast, the interviewee from a large organisation stated:

> Often people are too scared of and think it is too hard and that one person cannot make a difference, people see it as solely a green agenda, having to buy it in from the top of the organisation.

The interview findings showed that interviewees from SMEs held similar views on sustainable development; whilst the interviewee from large organisations held contrasting views. For example, the SME interviewees believed that no organisational commitment was required to achieve sustainable development, also both interviewees held similar definitions of the concept of sustainability development, which was different from that defined in the 1987 Brundtland report. The interviewees from SMEs definition of sustainability were that to be sustainable organisations should be the first to make the move; they also believed that sustainable development did not require an organisational wide commitment. In contrast, the interviewees from large organisations believed that an organisational wide commitment was required to achieve sustainable development, and this resonated through their organisation's goal for achieving sustainable development. In addition, this interviewee's definition of sustainability mirrored that of the Brundtland report. The possible role of management accountants in small-medium organisations are limited, and often influenced by the lack of organisational wide goals for achieving sustainable development.

Sustainable development will aid organisations to gain legitimacy in the eyes of external stakeholders and promote the image of an organisation that it is truly socially responsible. Organisations aspire for sustainable development practices in order to gain external legitimacy from stakeholders (Deegan, 2002). In addition, the view coming from professional accountants is a strong suggestion that 'the issue of sustainability needs to move rapidly up the priorities for professional accountants in business' (IFAC, 2006, p.5) and also shows that business professionals including management accountants are engaging in innovation and radical approaches to accounting for sustainable development (Tilt, 2009). The next section brings the narrative together and concludes the paper.

6. Discussion/Conclusion

The purpose of this paper is to explore the perception that management accountants have of their roles in accounting for sustainable development. Accounting for sustainable development could just be used as a broad umbrella term bringing together existing accounting and reporting approaches dealing with environmental, social, eco-efficiency, etc issues (Schaltegger & Burritt, 2010). An organisation wide commitment for achieving sustainable development would often resonate throughout the organisation and would certainly allow accountants, not just management accountants to bring about wider changes to their roles in accounting for sustainable development. The surveys and interviews showed varied results as to what the main role of management accountants is in accounting for sustainable development. However, it was clear that there is a gap between the role described in literature, and current practices used by management accountants in accounting for sustainable development. For example, the literature revealed the use of management accounting tools such as Environmental Management Accounting Systems; yet the surveys and interviews show that management accountants currently do not use such tools to achieve sustainable development goals for their organisations. Employee retention is also advocated by the literature through sustainable development practices which our evidence could not find support in the New Zealand context.

Management accountants' roles in accounting for sustainable development, is to act as facilitators of decision making for upper level management (Burnett & Hansen, 2008; Berry et. al, 2009; Albelda, 2011). This means incorporating Environmental Management Accounting Systems to use as a basic structure for achieving sustainable development practices, and guiding decision making within the organisation in order to gain legitimacy from the wider society. However as the interviews showed; small-medium organisation's management accountants seem to place lesser importance on achieving sustainable development, and this is evident through the types of practices the management accountants engage in. The roles of management accountants in smaller organisations seem to be dedicated around the traditional roles of management accountants, as found by Parker (2000), this included producing managerial reports, preparing cost benefits analysis, dispatch schedules etc. Although there were glimpses of actions that showed their perceived roles were sustainability driven, many of the smaller organisations discouraged sustainable development practices. This may be due to lack of resources. In contrast larger organisations seemed to play an active role in accounting for sustainable development, with management accountant's roles within the organisation specifically applicable to achieving organisation-wide sustainability. Although the results showed that some larger organisations do not use environmental management accounting systems, the interviews showed that management accountants of larger organisations seemed to act as facilitators for upper level management in sustainable development. Hence, while their perceived roles within the organisation included the traditional management accounting functions as described by Parker (2000), they also included, a role as facilitators of decision making as suggested by Berry et al, (2009) of the new emerging role for management accountants. Management accountants of larger organisations through their actions were able to gain legitimacy for their organisation from stakeholders.

The survey results were supplemented by the interview evidence, as to the possible roles that management accountants can engage in for sustainable development. On average the highest ranked category for management accountants role in sustainable development was in 'developing organisations systems to become more resource efficient.' The organisational backgrounds of most management accountants surveyed shows that on average approximately 42% of the participants represented small-medium organisations.

The drivers of sustainable development may influence the perceived roles of management accountants. The literature review above may have suggested that ‘laws and regulations’ may be strong drivers for sustainable development in New Zealand. However, from the research we can conclude that on average management accountants seek the adoption of sustainable development to enhance their organisations’ image, and encourage growth of newer technologies as the primary drivers of sustainable development. These drivers enable the organisation to maintain a sound image of themselves and gain legitimacy from external stakeholders.

The findings suggest that the possible role of management accountants within an organisation is closely linked to an organisation having organisation wide goals for achieving sustainable development. The goals which organisations resonate may be a reflection as to how some organisations and management accountants view the concept of sustainable development. This idea is supported by CIMA (2011), who suggest that in order for management accountants to achieve sustainable development, an organisation must have concrete goals for achieving sustainability, as this resonates into the goals for management accountants individually to achieve sustainable development (p.8)

The possible roles of management accountants in accounting for sustainable development, may also be influenced by the barriers and problems associated with trying to achieve sustainable development. The surveyed results showed that on average respondents thought that the two highest ranked barriers of sustainable development are that ‘sustainability practices are difficult to implement in costing systems and organisation structure’ and the ‘cost of producing sustainability reports outweigh the benefits.’ The surveyed results along with the interviewees responses for what they thought the problems were in accounting for sustainable development, may have also contributed to the possible roles of management accountant. For example, SME interviewees stated that the problem with sustainable development was identifying what to prioritise, i.e. does one prioritise the long-term goal of sustainable development or prioritise the short-term goal of managing the finite resources.

The surveys and interviews both recognised the limited use of sustainable development reporting and benchmarking. From the interviews, the large organisation interviewee was the only one to say that they utilised the reporting functions of the London Benchmarking Group, and Global Reporting Initiative, to ensure their competitiveness in achieving sustainable development. However, interviewees of SMEs stated that their organisation did not actively pursue these benchmarking standards and reporting functions.

Similarly, when management accountants were asked which form of sustainable development practice they use currently, the use of Global Reporting Initiative and London Benchmarking Group was ranked the lowest. This may suggest that smaller businesses tend not to utilise these reporting functions, due to the limited benefits flowing to small-medium businesses, whereas larger businesses use these functions as they can gain tangible benefits and legitimacy from external stakeholders.

The implication of the study is that there is a need for greater acceptance by senior management of the role management accountants should play in accounting for sustainable development. This study has practical implications as it may help management accountants of both small-medium and larger organisations, to advance accounting for sustainable development by exploring the issues that have deferred such advancement. It may be of relevance to teaching as well as to the practitioners on the perceived role and barriers to management accountants in accounting for sustainable development. The paper has been limited by interviews with four management accountants. We believe this could be extended in future studies.

Further research can be undertaken in this field through identifying the gaps between literature and practice, as it is evident, a gap exists between literature and the possible roles management accountants of small–medium organisations should play. Current literature suggests that management accountants of small-medium organisations should engage in sustainable development like activities that facilitates decision-making, yet as the research suggests small-medium organisations do not currently engage much in such practices (Burnett and Hansen, 2008).

The paper has attempted to extend the literature on the possible role of management accountants in sustainable business practice. Albelda (2011) points out that empirical evidence in this field of research is scarce and therefore the practices management accountants should learn and apply to achieve sustainable development is limited to the short-term literature, and empirical studies. Thus, further research is needed in this field of research. Future research on this topical area could also be extended to a bigger sample size perhaps incorporating a range of organisations from various international settings. The research has implications for practitioners as it promotes a better understanding of sustainable development and the possible roles of management accountants within the sustainability agenda.

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Table 1: Surveyed Population by Industry

	%	No. of Management Accountants
Automotive	7.7	2
Agricultural	11.5	3
Banking and Finance	23.1	6
Computers, office equipment	7.7	2
Insurance	11.5	3
Manufacturing	11.5	3
Oil, Gas, Electricity	11.5	3
Retailers and wholesalers	7.7	2
Transport	7.8	2
Total	**100**	**26**

Table 2: Surveyed Population Organisation Type

	%	No. of Management Accountants
NZ Public Companies	23	6
Co-Operative	12	3
State Owned Enterprise	8	2
Government Department	15	4
Owner Operated	42	11
Total	**100**	**26**

Table 3: Perceptions about drivers for sustainable development in New Zealand

	Strongly Disagree		Moderately Disagree		Neither		Moderately Agree		Strongly Agree		Ranking	Median	Mean
	%	No. of MA	%	No. of MA	%	No. of MA	%	No. of MA	%	No. of MA			
Laws and regulations	8	2	12	3	0	0	54	14	26	7	3	4	3.80
Employee Retention	15	4	12	3	42	11	31	8	0	0	8	3	2.88
Producing a Sustainability Report makes a difference when accessing financing capital.	12	3	0	0	54	14	15	4	19	5	7	3	3.32
Shareholders seeking investment opportunities with companies which engage in sustainable activities	4	1	8	2	46	12	30	8	12	3	5	3	3.40
Kyoto Protocol and possible Emission Trading scheme	4	1	23	6	8	2	61	16	4	1	6	4	3.36
Pressure from overseas governments	0	0	8	2	38	10	35	9	19	5	4	4	3.64
Adoption of sustainable practices enhance organisations image	4	1	0	0	23	6	54	14	19	5	2	4	3.84
Adoption of sustainable development encourages growth of newer technologies	4	1	4	1	4	1	69	18	19	5	1	4	3.96

Table 4: Perceptions of factors of most importance for organisations to achieve sustainable development

	Strongly Disagree		Moderately Disagree		Neither		Moderately Agree		Strongly Agree		Ranking	Median	Mean
	%	No. of MA	%	No. of MA	%	No. of MA	%	No. of MA	%	No. of MA			
Laws and regulations	0	0	0	0	15	4	31	8	54	14	1	5	4.36
Employee Retention	23	6	0	0	31	8	46	12	0	0	5	3	3.00
Producing a Sustainability Report makes a difference when accessing financing capital.	19	5	0	0	62	16	19	5	0	0	7	3	2.80
Shareholders seeking investment opportunities with companies which engage in sustainable activities	8	2	12	3	50	13	15	4	15	4	4	2	3.20
Kyoto Protocol and possible Emission Trading scheme	34	6	19	5	27	5	28	7	12	3	6	3	2.64
Pressure from overseas governments	23	6	38	10	12	3	27	7	0	0	8	2	2.44
Adoption of sustainable practices enhance organisations image	0	0	4	1	42	11	39	10	15	4	2	4	3.64
Adoption of sustainable development encourages growth of newer technologies	15	4	4	1	12	3	62	16	7	2	3	4	3.40

Table 5: Management accountants perceived barriers for accounting for sustainable development

	Strongly Disagree		Moderately Disagree		Neither		Moderately Agree		Strongly Agree		Ranking	Median	Mean
	%	No. of MA	%	No. of MA	%	No. of MA	%	No. of MA	%	No. of MA			
Adoption of sustainable practices is too costly	19	5	8	2	8	2	54	14	11	3	5	4	3.28
Cost of producing sustainability reports outweigh the benefits	0	0	12	3	31	8	57	15	0	0	3	4	3.44
Lack of support from institutions e.g. NZICA	0	0	8	2	50	13	42	11	0	0	4	3	3.36
Sustainability practices are difficult to implement in costing systems and organisations structure	8	2	4	1	19	5	42	11	27	7	1	4	3.76
There is lack of drive from top level management to implement Sustainable development practices	0	0	12	3	42	11	38	10	8	2	3	3	3.44
Company is too small, therefore adoption of sustainable practices would be considered as too much of a burden	0	0	54	14	23	6	15	4	8	2	7	2	2.80
Lack of evidence to suggest the best forms of sustainability practices	8	2	15	4	50	13	19	5	8	2	6	3	2.88
Lack of financial incentives in implementing sustainable practices	0	0	27	7	8	2	50	13	15	4	2	4	3.52

Table 6: Types of sustainable development practices management accountants implement

	Strongly Disagree		Moderately Disagree		Neither		Moderately Agree		Strongly Agree		Ranking	Median	Mean
	%	No. of MA	%	No. of MA	%	No. Of MA	%	No. of MA	%	No. of MA			
Use Global Reporting Initiative for comparisons	58	15	15	4	15	4	8	2	4	1	10	1	1.83
Compare reports against London bench marking group	35	9	42	11	15	4	4	1	4	1	9	2	1.92
Prepare reports in accordance with Environmental reporting regime e.g. ISO: 14001 compliant	42	11	19	5	15	4	8	2	16	4	8	2	2.29
Analyse customers for sustainability risk	8	2	31	8	42	11	19	5	0	0	7	3	2.67
Develop organisation systems to use least energy	12	3	23	6	42	11	19	5	4	1	5	3	2.75
Account for externality costs in costing systems	27	7	12	3	31	8	19	5	11	3	6	3	2.71
Triple Bottom Line Reporting	27	7	4	1	15	4	42	11	12	3	4	3.5	3.00
Do analysis on supply chain for sustainability risk	12	3	12	3	38	10	19	5	19	5	3	3	3.21
Develop organisation systems to excrete least amount of waste	0	0	27	7	15	4	42	11	16	4	2	4	3.41
Develop organisation systems to become more resource efficient	8	2	0	0	23	6	46	12	23	6	1	4	3.75