

## An Effective Conceptual Model for Social Cost Identification and Measurement

Neungruthai Nickie Petcharat\* and Joseph M. Mula\*\*

*This study aims to describe the design of an effective conceptual model of social management accounting system for accountants to create better quality of social accounting data. Suggestions from literature show that there is a need for a conceptual framework for social management accounting (SMA) practices to be developed in order to create more accurate cost information of social expenditures to disclose social performance of sustainable development of firms. This study therefore designs a conceptual model for a social management accounting system (SMAS) utilizing social management accounting (SMA) practices to help in the cost identification and measurement of social impacts, while applying activity based costing (ABC) approaches for cost analysis and allocation where these costs are consumed. A SMAS would make it easier for accountants in preparing social data for incorporating in financial reporting to support external stakeholders, and public's concerns. This study used qualitative research approaches to collect and analyse data to triangulate findings. This study is limited to the fifteen Australian non-service manufacturing companies those looking for way to incorporate social information in the sustainability reporting based on the requirements of GRI. This may therefore not relate to others. The results of the study indicate that companies are in early stage of developing their understanding of identification and measurement of social impacts. Companies are now looking for ways to accurately create social information, as well as changing to new management accounting practices for cost identification and measurement of social impacts. By having the designs of an effective conceptual model of a social management accounting system (SMAS), accountants create more accurate cost information of social impacts in financial reporting and external reporting purposes – sustainability reporting, corporate social responsibility (CSR) reporting, and GRI's requirements.*

**Keywords:** Activity Based Costing (ABC), Social Management Accounting (SMA), Social Management Accounting System (SMAS), social impact cost.

### 1. Introduction

As the consideration of social issues in accounting practices has been around for many decades, a situation that remains unchanged today where companies are required to be increasingly concerned about reducing negative impacts on society, employees and the environment (Raynard, 1998). Nonetheless, companies are in early stage of developing their understanding of how to identify, analysis, and measure social expenditures while having difficulty in allocating cost information to a single production process where these costs are consumed (IFAC, 2005). Previous studies have suggested that social accounting should be introduced to sustainable development firms for social cost identification and measurement (Hazilla and Kopp, 1990, Gray, 2002a, Gray, 2002b).

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Social management accounting (SMA) (a subset of social accounting) can lead to more accurate cost information of social impacts (Mobley, 1970, Spence, 2009) to accurately identify and measure social data to develop internal decision-making and tracking reporting systems (Bent and Richardson, 2003).

In addition, activity based costing (ABC) application should be further developed using activity cost driver, process costs, and/or activity cost driver to help in cost allocation and analysis (Sendroiu et al., 2006, Căpusneanu, 2008). This study, therefore, designs a conceptual model of a social management accounting system (SMAS) employing social management accounting (SMA) practices to help in the cost identification and measurement of social impacts and activity based costing (ABC) application using cost driver cost centre for cost allocation and analysis where these costs are consumed. A SMAS assists companies' accountants to create more accurate and/or better quality of accounting data of social impacts when using to support social performance disclosures to add shareholder values in the eye of stakeholders and public (Lindblom and Tinker, 1984, Gray, 2002a).

The remainder of this paper consists seven sections. Section 2 provides comprehensive details of the literature review including theoretical perspective, accounting and its expanding roles – sustainability accounting, social management accounting, social costs, activity based-costing system, and system characteristics, and gaps in the literature. Section 3 describes research design. Propositions are indicated and theoretical framework is provided in this section. Section 4 explains research methodology where research approach, data collection and analysis are discussed. Section 5 presents the findings in which the results of the study are presented and discussed. Section 6 provides the design of a sustainability management accounting system (SMAS) for social cost identification and measurement. The final section contains conclusion, contribution, limitation of the study, recommendations for further study, and concluding remark.

## 2. Literature Review

### 2.1 Theory Perspective

This study employs Marx's labour theory of value to examine companies' ethical and moral obligations in providing cost information (Drengson and Inoue, 1995, Donaldson and Preston, 1995, Yee et al., 2008, Shaw, 2009) of social impacts. **Marx's labour theory of value** was developed by Karl Marx, a German philosopher, to explain companies' interests in measuring costs of production processes when producing large quantities of products to support high consumer demand (Little, 1986). To realise the surplus-value(s) contained in products (under capitalism), products must be sold in the market at prices reflecting labour inputs (labour costs) of average (in terms of efficiency) producers (Marx, 1976, Marx, 1978, Marx, 1981). Marx's labour theory of value helps explain measurement of social impact costs while creating surplus value or maximizing profits in selling large quantities of products in markets (Jasch and Stasiškienė, 2005). Companies also need to provide cost information for social internal decision-making and stakeholders' concerns. These concerns were translated into measures, which in turn are incorporated as system characteristics for data inputs required for social reporting and internal decision-making. Furthermore, there is some confusion in the literature on definitions in relation to terminologies used to support the focus of the study. This study,

therefore, provides relevant literature to define key terms of accounting and its expanding roles for a developed SMAS.

### **2.2 Accounting and its Expanding Roles**

#### **2.2.1 Sustainability Accounting**

Within sustainability accounting, the word 'sustainability' was developed based on sustainable development for environmental and social performance of organizations (CIPFA, 2004). Sustainability accounting is a new approach to accounting and reporting to facilitate companies' developments in three dimensions – economic, social, and environmental (Milne, 1996, Ball, 2002) providing financial disclosures in the form of a triple bottom line report (Bennett et al., 2002, Taplin et al., 2006). Sustainability accounting provides companies with a business tool to manage environmental and social costs, as well as providing cost information for business decision-making and disclosure (UNSD, 2001). Gray (2006) pointed out that sustainability accounting should incorporate improvements in social and environmental reporting as external disclosures in order to create shareholder value for sustainable organizations.

As a consequence, in designing a social management accounting system (SMAS) in line with the concept of sustainability accounting, this study measures cost of social impacts using social management accounting (SMA) concepts to identify and measure social information in order to ensure sustainability (Schaltegger and Burritt, 2006). Such a system could assist companies in providing more accurate cost information to support disclosures for internal decision-making and to address concerns of stakeholders (Unerman et al., 2007). One component of sustainability accounting is social accounting which using social management accounting (SMA), is incorporated in the SMAS conceptual model.

#### **2.2.2 Social Management Accounting (SMA)**

Social management accounting (SMA), a subset of social accounting, aims to measure costs of social impacts to improve the quality of society, employees, and some aspects of the environment—all of which are of significant concern to companies' stakeholders (Mobley, 1970). Social management accounting provides companies with a way to accurately create cost information for social internal decision-making and social performance reporting (Gray, 2006). This cost information can be used to guide business decision-making in measuring and managing social costs within organizations (Gray et al., 2001, Gray, 2006) and support corporate social responsibility (CSR) reporting in order to create better relationships with stakeholders (Tinker et al., 1991). Nevertheless, as companies most likely report their social performance only to create a particular image or positive reputation in the marketplace (Gray et al., 2001, Gray, 2006), social management accounting has not been embraced by companies as social costs could raise the total costs of products (Mobley, 1970). In the meantime, social accounting has not demonstrated to companies how they could benefit by providing expenditures such as social costs to improve the quality of life for employees, society, and some parts of the environment (Spence, 2009). Thus, most companies do not intend to employ social management accounting to capture costs of these social impacts (Tinker and Gray, 2003).

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Thus, in the design of a SMAS, social management accounting concepts provides companies with a method of creating cost information more accurately which, in turn, supports social internal decision-making in the development of social performance. Disclosure of social performance in the form of corporate social responsibility (CSR) reporting would become more accurate when disclosing social impact information to stakeholders and/or the public (Tinker et al., 1991). Social costs are discussed next.

### 2.2.3 Social Costs

Social costs are claimed as external costs that companies might expend to improve quality of society, employees and the environment (Hazilla and Kopp, 1990). These costs refer to expenditures relating to the support of employees' health and safety, training, working conditions, and/or some elements of environmental and natural systems (Bovea and Vidal, 2004). Mook, Richmond and Quarter (2003) studied integrated social accounting for nonprofits organizations in Canada and claimed that social costs could create negative impacts on operational performance – which impacts on a company's intention to measure these costs for improving quality of society and community benefits. However, the measurement of social costs facilitates companies to not only reduce negative impacts on society and the environment, but also to maximize profits when products are sold at larger volumes (Corson, 2002). This also provides companies with a way to create an enhanced reputation as socially aware organizations concerned with improving quality of life for humans, reducing poverty, and preserving environmental and natural systems (Corson, 2002).

In a designed SMAS conceptual model, social impact costs are identified from social factors, which they are of significant concern to company stakeholders to disclose as part of corporate social responsibility (CSR) reporting, as mentioned by previous studies (e.g. ICAEW, 2004, Lamberton, 2005, Geibler et al., 2006). A SMAS would identify these costs as social expenditure provided to reduce negative impacts on employees, society and local community wherein a company operates (Bedford, 1971). In the design of SMAS, activity based costing (ABC) approach is expanded to help in cost allocation and analysis of social impacts.

### 2.2.4 Activity Based Costing (ABC)

As traditional management accounting has been widely used to measure cost of unit inputs (materials and labour) while treating all other costs as overheads, it provides activity based costing (ABC) to help in cost allocation and analysis. For social impact costs, management accounting has historically treated these as overheads using the ABC approach for cost allocation and cost drivers. ABC has not (to date) separately identified the costs associated with social impacts, which results in ABC recognizing these costs as overhead costs; thus they are hidden among other production and service processes (Milne, 1996, UNDSO, 2001, IFAC, 2005). As a result, companies are not able to fully cost items to successfully set correct prices of products and services (The Sigma Project, 2003, Lamberton, 2005, Englund and Gerdin, 2008). Thus, extending the application of the ABC approach to separately identify social impact costs from overheads before allocating to individual product costs is appropriate for this study (IFAC, 2005, Sendroiu et al., 2006, Căpusneanu, 2008). This can create more accurate cost information to support internal decision-making and flow on to external reporting and disclosures as it then incorporates sustainability accounting concept. This leads to allocating costs to activities for more accurate determination of social

information which results in an ABC approach plays an important role in cost analysis, identification, and allocation. Further, system characteristics are discussed in term of social characteristics for the designed SMAS conceptual model.

### 2.2.5 System Characteristics

System characteristics identified relate to accounting approaches or systems that help in the identification and measurement of social impact costs relying on sustainability accounting concepts/practices. The system characteristics capture social information to enhance society, employee well-being and environmental protection, which are usually then allocated to or by default included in overheads. In doing so, the system characteristics necessarily could redefine social management accounting (SMA) concepts to support social disclosures (Gray, 2002a, Gray, 2002b, Gray, 2006). Moreover, system characteristics could capture social impact costs to maximize profits when products are produced and sold in larger numbers (Pittman and Wilhelm, 2007). The system which incorporates appropriate social characteristics can present companies with a way to create more accurate financial and non-financial information to not only improve business decision-making, but to add stakeholder values.

Accordingly, the system characteristics defined by this study is based on social management accounting concepts that help identify, measure, and collect costs of social impacts in production activity in terms of social performance indicators based on GRI's requirements. These characteristics have been drawn for the most recent literature on social factors and social reporting, as well as social management accounting best practice. As a result, social management accounting, social characteristics, and an application of activity based costing approaches become key motivators for this study while underpinning the conceptual model of a social Management Accounting System (SMAS) (**Figure 1**).

### 2.3 Gaps in the Literature

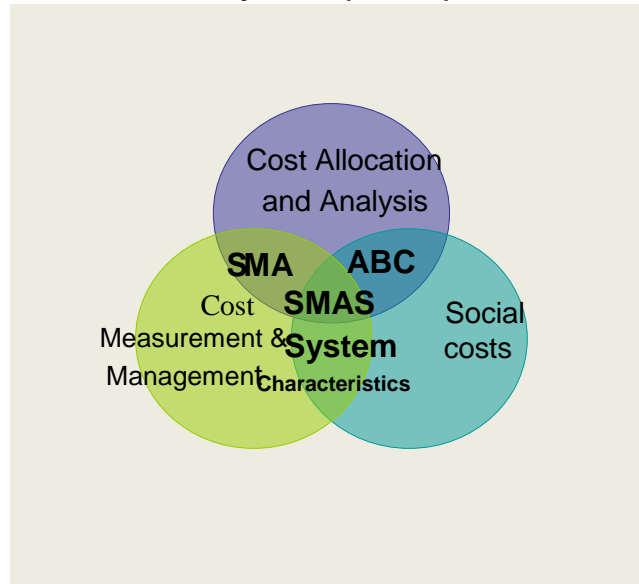
Based on the literature review, it is purposed that there was no complete model identified that contained characteristics of a holistic SMAS. Various points of view in the literature (e.g. Berkel, 2003, Lamberton, 2005, Taplin et al., 2006) promote the idea that sustainability accounting is a significant accounting approach and organizations can adopt it to help make internal and external decisions when managing sustainable costs (environmental and social impacts). Social impact costs have been ignored but if measured could significantly cause increases in production costs (Hazilla and Kopp, 1990, Mook et al., 2003) while possibly identifying benefits in the form of added social value. In addition, based on the literature review, it is purported that there was no complete holistic model identified that contained the necessary characteristics of the proposed SMAS.

To fill these gaps, this study proposes to develop a conceptual model for a Social Management Accounting System (SMAS) into a holistic system using *social management accounting (SMA)* practices to help in the identification and measurement of social impact costs. A SMAS also applies an *activity based costing (ABC)* approach to help cost analysis and allocation or cost drivers, as suggested by previous studies (Gadenne and Zaman, 2002, Nachtmann and Al-Rifai, 2004, Sendroiu et al., 2006, Snoo, 2006, Hubbard, 2009). As these concepts are not widely explored in the literature, particularly in relation to social performance, an integration of SMA and ABC

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application within a SMAS could fill part of the gap to help in cost identification and measurement. In the meantime, using *system characteristics* of social performance of current management accounting practices would help create more accurate cost information of social impacts. Figure 1 shows the link between social management accounting (SMA) concepts, activity based costing (ABC) approach and social impact costs in a designed SMAS.

**Figure 1: Accounting concepts underlying a social management accounting system (SMAS)**



### 3. Research Design

#### 3.1 Propositions

This study posed four propositions to fill the key gaps identified from the literature that aimed at investigating system characteristics within companies that could be employed for social identification and measurement. The propositions focused on appropriateness of, and improvements in, employing systems characteristics solicited and comparing these characteristics with Australian and overseas firms that have adopted best practice.

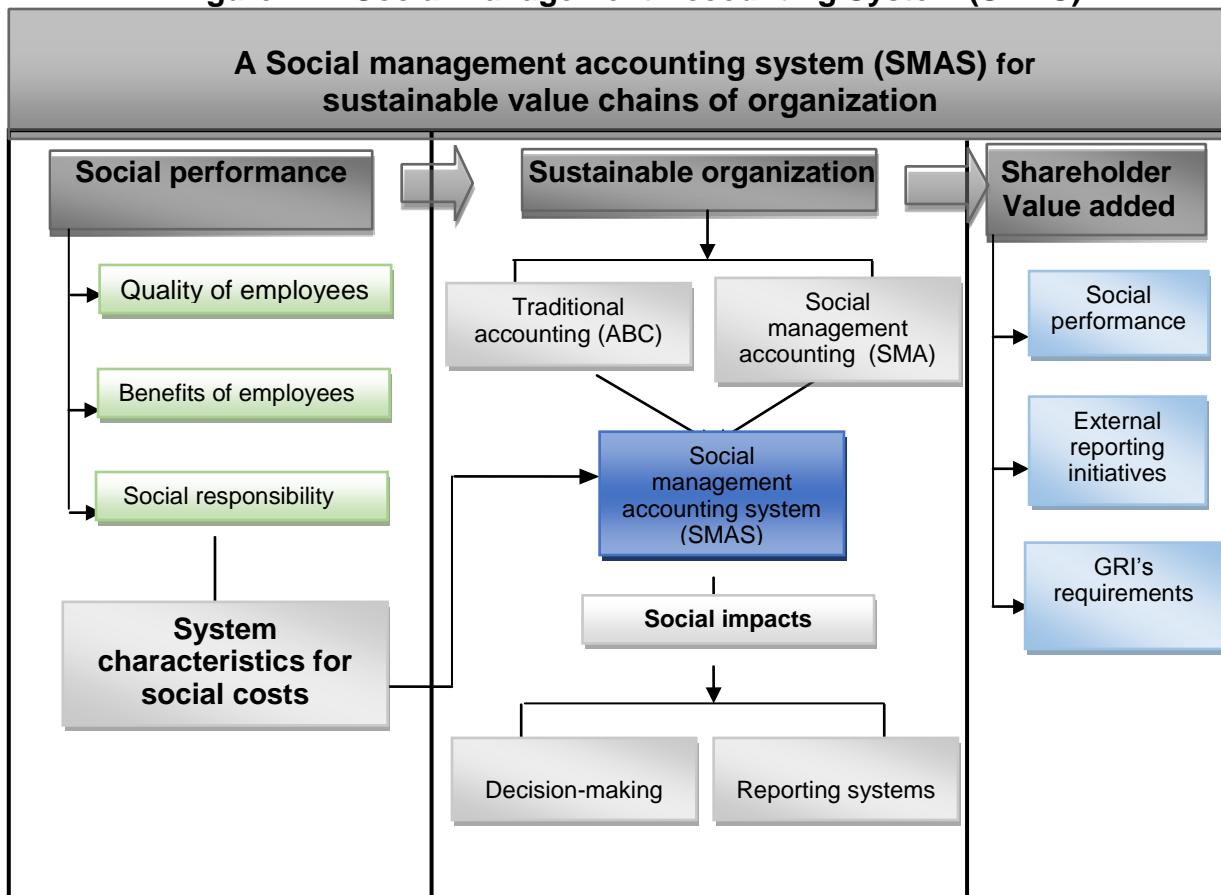
- P1:** *Best practice companies identify costs of social impacts as well as providing social expenditures to reduce negative impacts on humans, society, employees and local community where they operate.*
- P2:** *Best practice companies more accurately provide social costs information for external reporting disclosures to support stakeholders' demands and social internal management decisions.*
- P3:** *A SMAS provides best practice companies with an enhanced social impact costs management system to create sustainable development reporting for internal management decisions while adding corporate sustainability in the eye of stakeholders.*
- P4:** *A SMAS provides best practice companies with a mechanism to add shareholder values in sustainable development of firms.*

Best practice companies employ system characteristics based on sustainability accounting concepts to separately identify social costs from overhead expenditures before allocating to a single production activity. Best practices companies are able to provide more accurate cost information to enhance social internal decision-making and to create more precise external reporting – sustainability disclosures. By having a SMAS, companies are more concerned about reducing negative impacts on employee, society, and local community when reporting their progress in developing social well-being. Companies are now able to provide more accurate sustainability reporting including corporate social responsibility (CSR) disclosures thus adding shareholder value as sustainable development of organizations. In the following section, the theoretical framework developed to underpin this investigation is described as the starting point of a SMAS conceptual model.

### 3.2 Theoretical Framework

This study seeks to identify appropriate system characteristics of sustainability accounting that could be employed by companies from different manufacturing sectors. Thus, **Figure 2** consolidates the appropriate literature into an integrated theoretical framework as the starting point for this study. System characteristics of Australian and New Zealander companies are identified as social management accounting (SMA) metrics that are currently in use and to be used for cost identification and measurement of social impacts (Mook et al., 2003, Jasch and Stasiškienė, 2005, Gray, 2006, Pittman and Wilhelm, 2007). The most appropriate system characteristics of sustainability accounting are extended by incorporating best management accounting practices incorporated in the conceptual model of SMAS.

**Figure 2: A Social Management Accounting System (SMAS)**



Best practice companies identifying and measuring costs of social impacts both cost accounting data to enhance their management internally and externally provide decision and financial disclosures. *Marx's labour theory of value* is applied to help identify costs relating to improvements in skills, knowledge, and quality of employees while maximizing profits from higher consumption (Marx 1874 cited in Keen, 2001; Marx, 1978, Little, 1986). In relation to this, a SMAS is integrated with existing management accounting systems of companies to collect social impact costs from external and internal organizations while allocating to appropriate production activity or individual costs or cost centres (activities) by expanding on activity based costing (ABC) approach (Neumann et al., 2004). A SMAS could track and report timing of impacts that are related to movements in stocks and flows of products/services to disclose costs and benefits of operational performance. This movement is related to measurement of costs and benefits tracked from external impacts on the economic, society, and some extents of the environment (The Sigma Project, 2003) to support financial reports and disclosures of social performance (UNSD, 2001, The Sigma Project, 2003, IFAC, 2005).

### 4. Research Methodology

The study applied qualitative approaches to collect and analyse data using triangulation for credibility, thus avoiding social bias and building strong results from the study (Gorard, 2004, Neuman, 2006, Creswell, 2009). Qualitative approach was used to investigate management accountants' perspectives and views in identifying and measuring social information for decision-making and reporting purposes. The evidence was collected based on review throughout the documents. Social performance provided in the CSR discloses fifteen companies in Australia were targeted. In addition, fifteen management accountants were asked how they measure and identify social information to incorporate in both internal and external reporting. The data was collected from October 2010 – March 2011.

### 5. Findings

This study examined management accounting of best practice companies could create cost accounting data of social impacts for internal management decisions and sustainability disclosures. **Proposition 1** stated: *Best practice companies identify costs of social impacts as well as providing social expenditures to reduce negative impacts on humans, society, employees and local community where they operate.* The results of the study answered the **proposition1** that best practice companies identified social data to support external reporting initiatives. Companies purchased accounting programs/systems off-the-shelf to integrate with existing financial/management accounting practices for social cost identification and measurement. Companies (case# 2, 4, 6, 14, and 15) modified these separate accounting systems for social data based on existing financial/management accounting practice. Although the system helps in the cost identification and measurement of social impacts, it has treated social impact costs as overheads. As a result, costs of social impacts were recognized as overheads while allocating to each production activity. Companies could not precisely disclose actual costs of social factors, thus, internal management decisions for sustainable development organizations might not be achieved. Thus, **proposition 2** was formulated to examine how *best practice companies more accurately provide social costs*



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*information for external reporting disclosures to support stakeholders' demands and social internal management decisions.*

Best practice companies attempted to identify and measure social data from internal and external organizations while managing use and flow of resources (material, energy, water and/or wastes) in production processes. Nonetheless, as the companies were unable to separate social costs from overheads, these costs could be misrepresented in external reporting initiatives and companies would be unable to enhance investment decisions on cost efficiency. For that reason, the priority of social cost identification and measurement is to support management decisions on operational outcomes—where, in the past, these costs have been somewhat inaccurate in financial disclosures. Participants described effective decision-making using accurate accounting data of social impacts as follows:

**Case#2:** 'We used a stand-alone system to collect social costs. We provide financial supports for health insurance and external study for local community where a company operates'. [Participant was a management accountant.]

**Case#4:** 'We modified a separate system for social cost measurement. Our company provided funding to support scholarship programs for 20 local communities in central southern Queensland'. [Participant was a chief accounting officer.]

**Case#6:** 'We created an in-house inventory calculation tool for social cost identification and measurement. We provided cash donation and time donation to support community development'. [Participant was a chief accounting officer.]

**Case#14:** 'We modified a separate system for social cost identification and measurement. We provided social expenditures to support sustainable community development programs. This has been set as a policy to support stakeholders' demands for community needs'. [Participant was a chief accounting officer.]

**Case#15:** We used in-house calculation for cost identification and measurement of social impacts. We provided community development expenses, cash, and material donation to re-build harming the local community'. [Participant was a chief accounting officer.]

**Proposition 3** was posed to examine how a *SMAS provides best practice companies with an enhanced social costs management system to improve internal decision-making and to support stakeholders' and public concerns*. The results of the study answer proposition 3 that the *SMAS daily* collects social data to support decision-making on cost savings and reductions in carbon contaminants. Social impact costs were measured from expenditures provided to support social and community development, including funding provided to enhance quality of employee life, working performance and living standards. Donations in kind of cash and employee time that bring benefits to local communities where companies operate were also identified as social costs. Nonetheless, social costs were simply recognized as overheads thus creating data inaccuracy when used to support decision-making and external disclosures. Participants described effective decision-making using accurate accounting data of social impacts as follows:

**Case#2:** 'We identified social expenditures to support health insurance and external study has been identified as social costs for community development'. [Participant was a management accountant]

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**Case#4:** 'We identified social costs to support community skill scholarship programs for local community'. [Participant was a chief accounting officer]

**Case#6:** 'We provided cash donation and expenditures paid for staffs who donate time for community development'. [Participant was a chief accounting officer]

**Case#14:** 'We measured social costs from expenditures provided to develop as sustainable community identifying them from stakeholders' and public's interests' [Participant was a chief accounting officer]

**Case#15:** 'We measured social expenditures to support Red Cross, community benefits and materials to renovate areas and facilities damage from business operations from social cost information collected in previous years.' [Participant was a chief accounting officer].

It can be seen that companies create data accuracy of social impacts to potentially track social costs in financial reporting when disclosing to support stakeholders' and public's interests (Burritt and Schaltegger, 2010). Companies employed cost information to successfully enhance management decisions on sustaining social performance of companies in long-term (Gray, 2006). This study posed **proposition 4** to identify how a *SMAS provides best practice companies with a mechanism to add shareholder values in sustainable development of firms* in order to meet sustainable organizational needs. In discussions with participants of the study it was suggested that details of sustainability reporting is provided on company websites and some comments that provide evidence follow:

**Case#2:** 'We have provided healthcare and safety insurances for local community and external study assistance support to create better quality of life and their future careers. We also engaged with the Australian government by volunteering energy reductions and greenhouse gas emissions abatement actions under the CPRS policy'. [Participant was a management accountant]

**Case#4:** 'As we have met the energy and carbon emission targets, we became a leader in green markets that resulted in our company creating greater opportunities in economic performance. We invested capital in low- and zero-emission generation to produce low energy and less carbon offsets products for home and business markets. We reduced a significant percentage of energy consumptions and total volumes of greenhouse gas emissions in tonnes of CO<sub>2</sub> equivalents. We have been concerned with producing green and low carbon products to create energy efficiency and low carbon offset'. [Participant was a chief accounting officer]

**Case#6:** 'Our company provided cash donations and donations in kind in hours to support community development. We became a leader in the Australian food manufacturing industry, thus having had a positive reputation as a green producer that has met sustainable targets'. [Participant was a chief accounting officer]

**Case#14:** 'We create social investment policy by establishing community framework to support community needs. We also established stakeholder engagement programs by identifying stakeholders' interests to support sustainable community development and continued improvement in environmental resources management while effectively dealing with environmental and social issues. Our company has established environmental and social policies and programs to reduce business risks while creating positive reputations in marketplaces'. [Participant was a chief accounting officer]

**Case#15:** 'We also donated funds for the official Red Cross together with dollar-for-dollar from employee donation to support Victorian bushfires. We managed in 50% cash and 50% material to renovate surface land, affected communities, and/or

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ecological systems damaged from business activities. As we are a large user and polluter, we are a benchmark participant in the Greenhouse Gas Abatement Scheme of the NSW government'. [Participant was a chief accounting officer]

The above comments show that companies engage in board-initiated corporate social responsibility initiatives when providing sustainability reporting to stakeholders and the public. Best practice companies provided social expenditures for improvements in quality of employees' lives and work performance, as well as long-term community benefits. Social data were used to improve company decision-making, behaviours, attitudes and actions in relation to adding value as a sustainable development organization. The results obtained from this analysis supported the design of a SMAS conceptual model, which it is discussed next.

### **6. The Design of a SMAS Conceptual Model**

As the SMAS combines with social management accounting (SMA) concepts and practices and activity based costing (ABC) approaches, while integrating existing management accounting systems, it collects social from unit inputs related to quality of employee life such as working conditions, education and training, and healthcare and safety. The SMAS identifies social data within production processes relating to employee benefits—employees' decision-making, over-time, working hours, bonuses, rewards, and other special offers. The SMAS captures more sources of expenditures spent on business activities and/or social management programs that companies provide to support employee benefits (Table 2). According to Marx, capitalists need to develop society and/or social structures to significantly improve the quality of labourers and/or workers (Corlett, 1998, Wolff, 1999). This would create sustainable value when products were produced at efficient levels and could find a ready market to increase incomes (Marx, 1981, Yee et al., 2008). Thus, the SMAS captures social costs from unit outputs – poor performance due to working conditions, employee absenteeism, sick/business leave, maternity leave, vacations/holidays, resignations and/or lay-offs. Social costs are also collected from product responsibility such as customer satisfaction, customer health and safety, products recalls, community services, social welfare, employee self-development programs, research and product development, and compulsory cost of government policies. Table 1 shows social characteristics collected by the SMAS.

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**Table 1: Social characteristics captured by the SMAS**

<b>Current practices:</b>	<b>Social characteristics</b>
<b><u>Unit inputs</u></b>	Benefits provided for employees:
	<i>Life insurance</i>
	<i>Health care</i>
	<i>Disability/invalidity coverage</i>
	<i>Maternity/paternity leave</i>
	<i>Retirement provision</i>
	<i>Stock ownerships</i>
	<i>Transportation</i>
	<i>Special leaves</i>
	Bonus programs
	Costs of education and training programs
	Counselling prevention and risk-control programs
	Healthcare and safety programs
	Skills management and lifelong learning programs to develop employees' skills and knowledge
	Average hours of training per year per employee:
	<i>Vocational training and instruction</i>
	<i>Costs of educational leave</i>
	<i>Costs of training or education pursued externally</i>
	<i>Costs of training on specific topics</i>
	Programs for skills management and lifelong learning:
	<i>Pre-retirement planning</i>
	<i>Retraining for those intending to continue working</i>
	<i>Severance pay</i>
	<i>Job placement services</i>
	<i>Assistance (e.g. training, counselling) on transitioning on a non-working life</i>
<b><u>Production processes</u></b>	Employees receiving a regular performance and career development reviews
	Minimum notice period(s) regarding operational changes
	Actions taken to respond to incidents of failure to follow policies and procedures
	Whistle blower policy/ hotline in response to incidents of fraud or other inappropriate activities
<b><u>Unit outputs</u></b>	Ratio of basic salary of males to basic salary of females for each employee category
	Programs and practices that manage the impacts of operations on communities
	Legal actions for anti-competitive behaviour, anti-trust, and/or monopoly practices regarding major outcomes of these actions
	Fines and regulations of non-monetary sanctions for non compliance with laws and regulations
	Life cycle stages in which health and safety impacts of products and services are assessed for improvement
	Incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products during their life cycle
	Ratio of basic salary of males to basic salary of females for each employee category
	Programs and practices that manage the impacts of operations on communities

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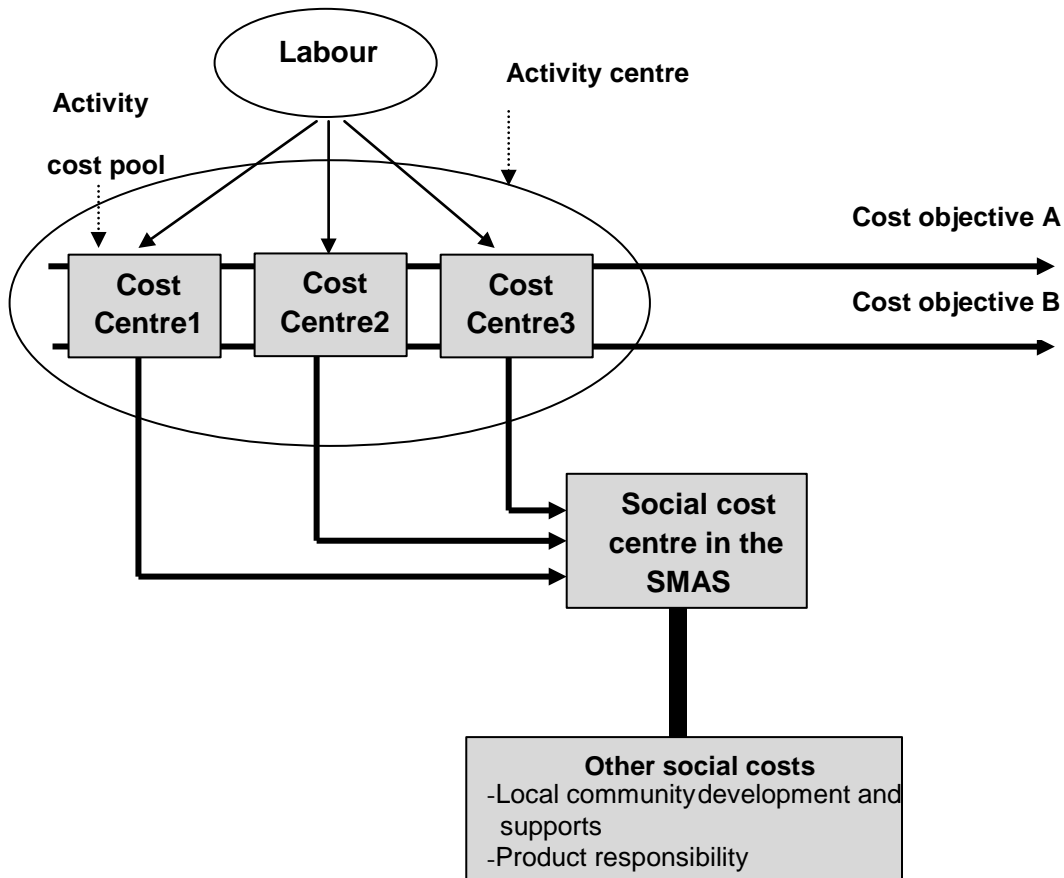
**Table 1: Social characteristics captured by the SMAS (cont.)**

Current practices:	Social characteristics
<b><u>Unit outputs</u></b>	Programs and practices that manage the impacts of operations on communities:
	<i>Local culture, gender, indigenous peoples, and cultural heritage</i>
	Legal actions for anti-competitive behaviour, anti-trust, and/or monopoly practices regarding major outcomes of these actions
	Fines and regulations of non-monetary sanctions for non compliance with laws and regulations
	Life cycle stages in which health and safety impacts of products and services are assessed for improvement
	Incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products during their life cycle
	<i>Fines/Penalty</i>
	<i>Warning</i>
	<i>Voluntary codes</i>
	Product information required by procedures, and/or percentage of products subject to information requirement
	Practices related to customer satisfaction:
	<i>Fines/Penalty</i>
	<i>Warning</i>
	<i>Voluntary codes</i>
	Incidents of non-compliance with regulations and voluntary codes concerning marketing communications, advertising, promotion, and/or sponsorship by type of outcomes
	<i>Products are banned in certain markets</i>
	<i>Stakeholder questions or public debate</i>
	Total monetary value of fines and or regulations concerning the provision and use of products
	<i>Fines/Penalty</i>
	<i>Warning</i>
	<i>Voluntary codes</i>
<b>Additional characteristics</b>	<b>identified from Australian best practices</b>
<b><u>Unit inputs</u></b>	Administrative funding for overseas travel
	Sustainable community development programs
	Expenditures provided to support community development
	Local and community supports/benefits
	Community skill scholarships e.g. training, educational facilities and career development.
<b><u>Unit outputs</u></b>	Road safety programs for local community.
	Respective local economy
	Cash donation,
	Donation in kind and hours e.g. employees' time/donation
	Political donations Obesity and other social issues
	Supporting Red Cross,
	Donation in kind of materials to maintain community benefits

ABC approach in the SMAS help in cost allocation and analysis, social impacts costs are individually identified from overheads before allocating to fully cost products necessary for each production activity. The SMAS identifies allocation key for social impact costs based on costs of social development or community investment attributing to the production activity and to the respective costs centre and/or cost drivers (Jasch, 2009). For example, social expenditures spent on improvement in the quality of employees' work environment in producing product are directly allocated to that product. In addition, donations in kind of cash and employees' time are also allocated to products

produced by those specific employees. Figure 2 provides an example of social cost allocation in the SMAS adopted from Turney (1996) Schaltegger and Burritt (2000).

**Figure 2: An example of social costs allocation in the SMAS**



The SMAS, therefore, provides companies accountants with a way to create more accurate social data, thus creating trustworthiness and reliability from the viewpoint of stakeholders which, in turn, would lead to enhanced organisational decision-making on investments in long-term. Companies more precisely provide sustainability reporting in disclosing the development social performance to stakeholders and the public thus ensuring their sustainability is achieved.

## 7. Conclusion, Contributions, Limitations and Future Research

### 7.1 Conclusion

Australian companies are in the early stage of developing their understanding of how to accurately identify and measure social impact costs. Companies have indicated their intention to capture social data in the future. Based on the results of benchmarking analysis, best practices companies collect social data to support social management decisions when identifying social expenditures to bring benefits to local communities. However, these costs were identified as overheads when disclosing sustainable performance of organizations. The SMAS conceptual model designed by this study provides companies' accountants with a new management accounting mechanism for

improvement in corporate management decision-making on cost identification and measurement of social impacts. The SMAS supports companies to support stakeholders' and public's concerns, thus adding shareholder value in relation to social-friendly organizations.

### 7.2 Contributions

#### 7.2.1 Contributions to the Literature

This study appears to be the first attempt to combine social management accounting (SMA) practices and application of an activity based costing (ABC) approach in integrated holistic SMAS using social characteristics for more accurate accounting data of social impacts. As sustainability accounting is a new form of business decision-making and sustainability reporting, it provides companies with a way to create cost accounting data of environment and social impacts. This study conceptualizes sustainability accounting by designing a social management accounting system (SMAS) conceptual model for Australian non-service to help capture social costs (Mook et al., 2003, Gray, 2006) to support management decision-making and corporate social responsibility (CSR) reporting (Gray et al., 2001, Gray, 2006). Furthermore, this study develops social allocation and analysis, applying ABC application in relation to cost drivers or cost centres (Schaltegger and Burritt, 2000), thus providing companies with the ability to measure social costs relating to improvements in quality of society, employees and the environment (Mook et al., 2003, Gray, 2006).

#### 7.2.2 Contribution to Practice

As the SMAS provides more accurate cost accounting data of social impacts, this would make it easier for accountants in preparing financial statements for external stakeholders. In addition, as the SMAS was designed as a holistic system, it can be integrated with existing financial accounting systems. An integration of social management accounting (SMA) concepts and activity based costing (ABC) approach in the SMAS would help accountants to more accurately report social information internally when investment decisions need to be made (Epstein and Roy, 2001). In addition, by adopting the integrated SMAS, accountants would find it relatively straightforward to extract social data for incorporation into financial reports to address the interests of stakeholders and the public.

### 7.3 Limitations of the Study

The scope of this study primarily involved management accounting practices/systems for social cost identification and measurement, as well as cost allocation and analysis based on activity based costing (ABC) approach. The study was limited to *non-service sectors* particularly Australian manufacturing companies and New Zealander firms. Characteristics for social data were limited to social expenditures that non-service manufacturing companies provided to support the development of employees, society, and local communities where companies operate. The findings are based on the fifteen companies that provided social performance in the CSR disclosures, and may therefore not relate to the social performance of other companies.

### 7.4 Recommendations for Future Research

As Australian companies have been less interested in the development of the social performance, future research should focus on the need of service companies to improve quality of life of employees, society, and local communities where they operate. This study would also suggest that future research should develop a fully holistic system from the conceptual model to successfully enhance investment decisions on social cost measurement for improvement in quality of employee, community, and social well-being.

### 7.5 Concluding Remarks

The Social Management Accounting System (SMAS) conceptual model for cost identification and measurement of social impacts assists accountants to create better quality of social data for management decisions and reporting purposes. Companies are able to meet their sustainable organizational needs. It is hoped that this study will prompt further research in this area and that the conceptual model will be used to frame the development of a 'real' social management accounting system which is desperately needed to support organisations' measurement and reporting requirements.

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