Sustainable Practices in Small and Medium Sized Enterprises in Regional Australia

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Abstract

Global warming, through rising greenhouse gas emissions, is not only impacting on human populations and ecosystems; it is also causing negative impacts on economic development. Commercial activities of businesses are contributing to global warming through unethical social behaviours, so businesses have a role to play by adopting environmental friendly practices in their actions and strategies, so as to reduce their impact on ecosystems. Also, successful businesses to be sustainable need to consider the social concerns within their local communities. Socially friendly businesses attempt to increase human capital through skill improvement and contribute to social capital in a way that community and social groups respect their social responsibility and support them.

Sustainability adoption refers to the actual implementation of sustainable practices in currently operating businesses. Such adoption in terms of ecology and community has been commonly accepted as a requirement for large businesses under the rubric of corporate social responsibility. Small and medium sized enterprises (SMEs) have not been scrutinised anywhere near to the same level in terms of their attention to sustainability adoption in their business mission and strategies. Owner/managers of SMEs are no more exempt from environmental and social ethics than anyone else in society. Furthermore, SMEs are significant regional development agents contributing to the increased productivity and an improved quality of local life. Especially in Regional Australia where SMEs constitute approximately 95% of businesses in services and industry sectors, so for Regional Australian SMEs to adopt sustainability and regional economic strategies at the same time, enables local communities to benefit from sustainable development, innovation and economic development in their regions. In the SME literature, there is a lack of appreciation of the sustainability issue and its connection with its local community. Bringing together the relevant literature, this research develops a sustainability assessment framework for SMEs by determining the internal and external drivers and inhibitors affecting the adoption of social and environmental friendly practices in SMEs within the regional context. This framework can be used as a basis for application in regional development. It will also be a valuable tool for evaluation and monitoring of strategies for sustainability adoption.

To gain a deep understanding of sustainability adoption by regional SMEs, this research investigates social and environmental practices adopted by regional SMEs in order to respond to the sustainability challenge. This research explores factors affecting the sustainability

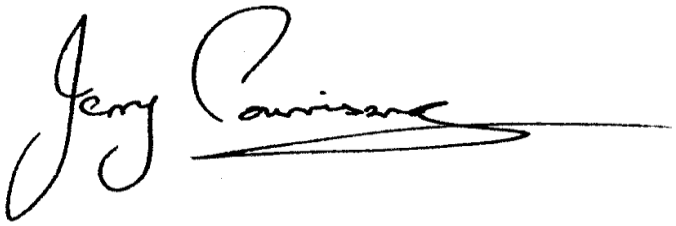
adoption by regional SMEs. Also the research undertaken seeks to identify whether some demographic variables (i.e. business size, business category, business age, owners/managers' experience and educational level) have any significant impact on the adoption of social and environmental practices.

This quantitative research has a response rate of 28.77% and stands on pre-test, a pilot study and the main study. It draws on the response of 233 SME owner/managers within the regional city of Ballarat. The research uses descriptive statistics, Exploratory Factor Analysis (EFA), analysis of variance (ANOVA), and logistic regression and is guided by the conceptual framework.

The results show that the SMEs are actively engaged in employee support and they tend to be close to the local community while lacking environmental practices. However, despite being active in the areas of recycling, energy efficiency, and using environmentally friendly products, these SMEs showed an inability to grasp the strategic importance of overall environmentally sustainable policy and practice. Moreover, findings reveal that business size and owner/managers' education have significant positive effects on the adoption of socially responsible practices. The results of this research contribute significantly to understanding of sustainability adoption by SMEs in a regional context. This research is one of the first empirical studies undertaken to investigate the factors affecting the sustainability adoption by regional SMEs in Australia. Thus, this research builds a platform for future research in relation to understanding better the factors that are barriers to adoption of sustainable practices outside major metropolitan regions, and a theoretical framework to guide such future research. The findings of this research highlight significant implications for both theory and practice in the context of a non-metropolitan urban setting. These implications include addressing practices in a way that brings business operators together to network and collaborate with the communities in the region.

Statement of Authorship

Except where explicit reference is made in the text of the thesis, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis by which I have qualified for or been awarded another degree or diploma. No other person's work has been relied upon or used without due acknowledgement in the main text and bibliography of the thesis.



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Dedication

This thesis is dedicated to the love of my life, my husband ‘Soorena’. Thank you for always standing by me, providing me tremendous support and for making my life beautiful in every sense. You are my biggest strength. I could not have produced this thesis without your continuous deep love, patience, care and motivation.

Publications and Proceedings Arising from this Thesis

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4. **Parisa Salimzadeh,** "Factors Impacting the Adoption of Sustainability in SMEs: A comparison between small and medium-sized businesses in a regional city of Australia", *The 7th Indonesia International Conference on Innovation, Entrepreneurship, and Small Business (IICIES 2015)*, Bandung, Indonesia, 4-6 August 2015.

5. ***Parisa Salimzadeh,*** *Jerry Courvisanos, Raveendranath Ravi Nayak,* "Social and Environmental Practices of SMEs in a Regional City of Australia", *28th Annual SEAANZ Conference,* Melbourne, Australia, 1-3 July 2015, ISBN: 978-0-9924200-2-4.

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Abbreviations

ANOVA	One-way Analysis of Variance
ABN	Australian Business Number
BS	Business Sustainability
CFA	Confirmatory Factor Analysis
CS	Corporate Sustainability
df	degrees of freedom
EFA	Exploratory Factor Analysis
GFC	Global Financial Crisis
GST	Goods and Services Tax
HREC	Human Research Ethics Committee
HSD	Tukey's Honestly Significant Difference
IISD	International Institute for Sustainable Development
KMO	Kaiser-Meyer-Olkin Measure of Sampling Adequacy
$\mathbf{MS_{bg}}$	between-groups Mean Square
$\mathbf{MS_{wg}}$	within-groups Mean Square
NPV	Negative Predictive Value
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
PCA	Principal Component Analysis
PLIS	Plain Language Information Statement
PPV	Positive Predictive Value
SBN	Sustainable Business Network
SMEs	Small and Medium-sized Enterprises
SPSS	Statistical Package for the Social Sciences
$\mathbf{SS_{bg}}$	between-groups Sum of Squares
$\mathbf{SS_{wg}}$	within-groups Sum of Squares
ST	Stakeholder Theory
VIF	Variance Inflation Factor
WBCSD	World Business Council for Sustainable Development
WCED	World Commission on Environment and Development

Chapter 1: Introduction

1.1 Introduction

This research identifies factors affecting sustainability adoption[1] by tracing out the extent and nature of sustainable practices of Small and Medium-sized Enterprises (SMEs) in a regional city of Australia. This chapter provides an introduction to the thesis, sets out the general overview of the study and the research objectives, discusses the justification for the research, the research questions, and the methodology adopted. It also highlights the study's contribution to the literature, the definitions used, and the assumptions. The structure of the chapters that comprise this research is also provided.

1.2 General Overview of the Study

Global warming, through rising greenhouse gas emissions, is not only impacting on human populations and ecosystems[2], it is also causing negative impacts on economic development (Weart, 2008). Hillary (1995) believes that global warming is mainly caused by business and industry; and this could lead to between 5% to 20% decrease in global economic output (Stern, 2006). Hence, sustainability as a major challenge to modern society is not an issue just for people and planet; it is very significant in the business context as it makes beneficial economic sense (Porter & Kramer, 2006). The Brundtland Report established this challenge by recognising that "…Humanity has the ability to make sustainable development - to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs." (Brundtland, 1987, p. 8).

[1] In this study, sustainability adoption refers to the actual implementation of sustainable practices in currently operating businesses (de Lange et al., 2012).

[2] An ecosystem is a community of living organisms (e.g. plants, animals, humans) that interact together with feedback loops as a system, in conjunction with non-living elements of the physical environment (e.g. air, water and mineral soil). The whole earth planet can be referred to as an ecosystem, as can one specific physical community (e.g. plants). The concept of the ecosystem was first employed in a publication by Arthur Tansley in Tansley (1935). One can also refer to a social system human community as a social ecosystem (e.g. local government area), see Mitleton-Kelly & Papaefthimiou (2002).

Solving global warming will improve the quality of human communities' lives and ecosystems. It is specially the case in Australia which is the highest greenhouse gas polluter among all the nation members of the Organisation for Economic Co-operation and Development (OECD) (Australia's Greenhouse Gases, 2015). The increase of 31.4% of Australia's greenhouse gases emissions from 1990 to 2014 was due significantly to electricity generation (51%), followed by transport (14%), emissions from fossil fuel mining like oil and gas production (7%), agriculture mostly from cattle and fertilisers (15.9%), industrial processes (5.7%), land use and forestry (4.6%), and waste (2.6%) (Australia's Greenhouse Gases, 2015).

In this regard, environmental sustainability could act as a catalyst to transform business activities to environmental friendly ones, ensuring economic and environmental goals can be co-determined (Tilley & Fuller, 2000; Roxas & Chadee, 2012). The environmental goals are crucial in this sustainability context. Raynard and Forstater (2002) recognise the ecosystem (or "ecological system") as an approach to appreciating the interactive nature of living communities, which leads to a goal of ecological sustainability. Whereas, the goal of environmental sustainability aims to maintain what humans need (or want) from the environment, e.g. clean water, fresh air (Graymore et al., 2010). While, some large businesses like Interface have accepted the need to adopt ecological sustainability in their management process (Stubbs & Cocklin, 2008; Loorbach & Wijsman, 2013), many large businesses as well as SMEs have not paid enough attention in their management strategies to sustainability, whether 'environmental' or 'ecological' (on large business, see Lo & Sheu, 2007; on SMEs, see Revell et al., 2010). The majority of global pollution (up to 70%) is due to the SMEs' environmental impact (Hillary, 2000). So the role of SMEs in achieving environmental sustainability is very significant, thus, making the owner/managers of SMEs critical to achieving this goal. The focus is on environmental sustainability through environmental friendly practices, rather than any broad ecological sustainability goal which is at a higher conceptual level that can be investigated in this study.

Sustainability has a social dimension too. SMEs being relatively smaller, should commit to the communities in which they operate. In fact, the important value of human resources is very well understood in the ethics profile of these businesses (Azapagic, 2003). Hence social sustainability encourages SMEs to meet, in an ethical manner, the various needs and expectations of their stakeholders (Elkington, 1997; Roxas & Chadee, 2012) which has links to the need to be environment sustainable too. Explaining the notion of ecosystem to social

ecosystems, allows social eco-sustainability to be addressed (Mitleton-Kelly & Papaefthimiou, 2002) in the same way as ecological sustainability. Social sustainability, divorced of the 'ecosystem' aspect similarly allows for supporting local communities through maintaining viable services (e.g. cancer clinic). Again, the focus of this study is on social sustainability, and not the broader social eco-sustainability.

Furthermore, SMEs are significant regional development agents, so for SMEs to adopt sustainability and regional strategies at the same time, enables local communities to benefit from sustainable development, innovation and economic development in their regions (Goldsmith & Samson, 2006). If regional SMEs engage with sustainability, they will receive many advantages like improved competitiveness, better quality of products and services, better relationships with the community, material efficiency and staff commitment (O'Laire & Welford, 1996). This is especially the case in Regional Australia where SMEs constitute approximately 95% of all businesses in services and industry sectors (Australian Bureau of Statistics, 2011). The main concern is how regional SMEs are engaged with sustainable development. Or what practices are adopted by regional SMEs in order to respond to the sustainability challenge?

Although a large majority of businesses in all economies around the world are SMEs and their contribution to the economic sector is significant (Udayasankar, 2008), there are few and limited studies about the SMEs' orientation towards sustainability (Dangelico & Pujari, 2010; Martin-Tapia et al., 2010; Kuckertz & Wagner, 2010). In the Regional Australian context, there is a gap in the literature about the experiences of regional SMEs in dealing with sustainability. Also, there is no clear path for local communities and businesses to determine why, where, when, how and how much they should move forward on the sustainable development path in their overall business strategy (Goldsmith & Samson, 2006). This study aims to examine sustainability practices adopted by SMEs in a regional city in Australia. Also, the factors that drive sustainability in regional SMEs are specified in this study. Therefore this study is one of the first studies to provide an informed evaluation of the full picture of the sustainable practices of SMEs operating in Regional Australia.

1.3 The Research Objectives

Against such a background, this research is designed firstly to appreciate the regional SMEs and sustainable development literature and their contribution to regional sustainable development. This objective broadly draws on the regional SMEs and sustainable development literature and directs the study's consideration. Secondly this study is designed to investigate the social and environmental friendly practices adopted within SMEs operating in an Australian regional city. It reveals the activities adopted by regional SMEs in the context of sustainable business. The third objective of this research is to discover the influencing factors on the sustainability adoption by regional Australian SMEs. It explores the drivers and inhibitors which affect the orientation of SMEs' owner/managers towards the sustainability issue.

In achieving the above objectives, this study is designed to uncover the demographic profile of SMEs (at the firm level) as the unit of analysis, as well as the demographic profile of the owner/managers that operate these SMEs in a regional city of Australia. With this profile, the study aims to ascertain the relationship of these SMEs with the adoption of social and environmental friendly practices. It provides an insight into the significant differences existing in the adoption of social and environmental friendly practices between groups of SMEs with different demographic characteristics. The final objective of this research is to investigate the relationship between the adoption of social and environmental friendly practices and the challenges SMEs face in embracing sustainability in Regional Australia.

1.4 Justification of the Significance

The Global Financial Crisis (GFC) and climate change have been very influential in business sustainable development (Potts, 2010) and changing the way that governments plan for such sustainability (Courvisanos, 2012). Over recent decades, particularly in developed economies, business has been expected to perform in economic terms. A firm's competitive advantage and ability to deliver stakeholder value has been analysed based on financial criteria (Wells, 2011). However, businesses' responsibility for the environment and society goes beyond the traditional responsibility to the owners and stakeholders to generate economic wealth.

Recent organisational and management studies have paid much attention to the concept of Corporate Sustainability (CS), but the adoption of sustainability practices within SMEs has received limited attention and study. While there is disagreement concerning the extent of SMEs' sustainable practices, there is also a lack of clarity on how best to implement sustainable practices in small business context (Dailey & Huang, 2001), and in particular virtually no clear role of SMEs in such practices.

As societies and communities move towards the sustainability path, markets try to provide a range of environmentally oriented products and services. In this regard, national governments use different tools and resources to develop sustainability adoption for businesses, whereas, the prominent role of regions in the progression of sustainability has been neglected. Although political and economic drivers at the national and international levels are critical for setting the sustainability framework, the key role of regions and local communities should not be neglected in the transformation of the communities toward sustainability (Potts, 2010; Courvisanos, 2012). Also, the activity of SMEs in regional areas is highly sensitive to public scrutiny and community sanctioning (Brown & King, 1982; Smith & Oakley, 1994). Besides, small and medium businesses in regional areas are able to take advantage of sustainability initiative due to their flexibility and close relationships with their communities (Sarbutts, 2003). However, sustainability research has usually focussed on large companies due to their higher capacity to develop sustainability strategies (Potts, 2010).

In Australia, SMEs are playing an ever increasing role in the national and regional economy. According to the recent government statistics, Australian SMEs constitute over 97% of all private sector businesses in Australia and their contribution to employment is 49% of the private sector workforce (Australian Bureau of Statistics, 2011). It is apparent from this that SMEs contribute significantly to economic development in Australia; meanwhile, they undoubtedly have a significant impact on the environment and social community. Hence, further research needs to be considered on the factors (both as drivers and barriers) which affect the regional SMEs' orientation towards sustainability.

1.5 Research Questions

The aim of this research is twofold. First, this study identifies the various social and environmental practices and activities which show the SMEs' orientation towards sustainability in a regional context. Second, this research determines the factors which drive sustainability in regional SMEs. Thus, the questions raised in this study are:

1. What are the activities and practices which SMEs in a regional city of Australia adopt that are consistent with being a sustainable business?

2. What are the drivers and barriers to SMEs in a regional city of Australia relating to sustainability?

3. Is there a significant difference in sustainability adoption within SMEs in a regional city of Australia with different demographic variables?

4. What is the relationship between sustainability adoption and the factors affecting such adoption in SMEs operating within a regional city of Australia?

For answering these questions, some hypotheses are proposed which will be tested later in Chapter 4. These hypotheses (in general form) include:

> H_0: There is no significant difference in the adoption of social/environmental practices between regional SMEs with different demographic variables. It means that regional SMEs' demographic variables have had no effect on the adoption of social/environmental practices.
>
> H_1: There is a significant difference in the adoption of social/environmental practices between regional SMEs with different demographic variables. It means that regional SMEs' demographic variables have had effects on the adoption of social/environmental practices.

1.6 Research Approach

Positivist quantitative methodology guides this research. The implementation of this methodological approach encompasses some distinct phases which will be explained in more details in Chapter Four where the research approach and methods to be used are outlined.

Past studies about the status of sustainability in SMEs are usually conceptual or theoretical (Van Marrewijk & Werre, 2003; Kuckertz & Wagner, 2010; Linnenluecke & Griffiths, 2010; Roxas & Chadee, 2012), while practical social and environmental practices of SMEs are little discussed in the literature. So the approach taken in this study aims to contribute to the regional research literature through the development and use of a unique framework of analysis that has a broad perspective to the adoption of sustainable practices in Australian regional SMEs.

Having discussed the underpinning research questions, the cross-sectional survey method within the deductive approach is used in this research. In this context, the quantitative research method of a detailed questionnaire is implemented because this study focuses on hypothesis tests, determination of causation (relationships) between variables and measures the frequency (number) of observations (Bryman & Bell, 2003; Chiang, 2003; Zikmund, 2003). Both descriptive and exploratory aspects can be seen in this study.

1.7 Contribution to the Literature

As discussed above, there is a lack of research on the sustainability issues specific to small and medium businesses operating in Australian regional areas. There are some isolated studies on the sustainability issues in Australian SMEs (Schaper, 2002; Dawson et al., 2002; Lucas, 2004; McKeiver & Gadenne, 2005; Gadenne et al., 2009), and only three identified in relation to regional SMEs specifically (Roberts et al., 2006; Lucas et al., 2009; Moyeen & Courvisanos, 2012). However, there are no comprehensive large data studies of the sustainability practices in regional SMEs.

To address this dearth in the literature, this research makes an attempt to contribute by narrowing this knowledge gap through building a conceptual framework and then applying it so that SMEs' role in sustainable practices is clearly specified and can be investigated in a Regional Australian context. Thus, this research develops a sustainability assessment framework for regional SMEs by providing the internal and external drivers and inhibitors affecting the adoption of social and environmental friendly practices in SMEs within their local community. This framework can be used as a basis for application of sustainability in regional economic development. This framework will also be a valuable tool for evaluation and monitoring of strategies and activities for sustainability adoption of SMEs in a region or

locality; a framework that to this date does not exist – unlike the many corporate frameworks available for large business sustainability investigations. Hence, the study's research framework could be considered as a primary tool to investigate the adoption of environmental and social activities by SMEs in a regional context. According to Moyeen and Courvisanos (2012) such a tool is really needed in the SME context and the current framework facilitates the future research about the adoption of sustainability by SMEs in regional areas.

Given the absence of relevant studies on Regional Australian SMEs in existing literature, this research takes a preliminary step towards an investigation of factors affecting sustainability adoption and provides appropriate suggestions that can be taken up by regional SMEs. This could help to promote a transition path towards a more sustainable business model which can be applied to Regional Australia and used as a basis for wider applications in other regions where also, similar factors are significant. In other words, this study aims to contribute to development of policy and practices for encouraging sustainability adoption by regional SMEs.

1.8 Terms Definitions

Regional Australia: This is a term which refers to non-metropolitan areas within Australia (outside of major capital cities). It is more often defined in terms of its qualities like small economic scale, landscape diversity and disparate communities. Due to Regional Australia's unique characteristics, it is the non-metropolitan small-scale enterprises that are very vulnerable to the changes and challenges affecting sustainability and economic growth (Charters et al., 2011, p. 3).

SMEs: The Australian Bureau of Statistics (ABS) defines an Australian SME on the basis of annual turnover or the number of employees or a combination of both. Based on the ABS definition, Australian small business is an actively trading[3] business with 0-19 employees. Micro businesses are small businesses with 0-4 employees and medium-sized businesses are actively trading firms with 20-199 employees. The ABS defines a large business as an actively trading firm with 200 or more employees (Australian Bureau of Statistics, 2011). The SME definition by ABS is the specific one adopted in this study.

[3] Actively trading businesses are firms that have an Australian Business Number (ABN) and are actively remitting in respect of a Goods and Services Tax (GST) role (or are businesses that are monitored directly by the ABS and are determined to be "active"), See Australian Bureau of Statistics (2011, p. 3).

Business Sustainability (BS): It is the term adopted in this study because CS is a general concept which cannot be applied to SMEs as it assumes similarity with large corporates (Jenkins, 2004). Moreover, CS belongs to large companies because they are capable of addressing sustainability due to their stronger accessibility to resources than small firms (Lucas, 2004). Hence BS is a term encompassing all business forms, including small and medium firms, which implement sustainability strategies (Kerr, 2006).

1.9 Research Assumptions

In relation to this study, it is assumed that firstly the owner/managers of SMEs who responded to the survey questionnaire are able to comprehend each item in the instrument in the manner intended by the researcher. Secondly, the responses supplied in the survey questionnaire are made in a sincere and factual manner. Thirdly, the latent variables obtained from the measurement scales are quantifiable and measurable. These assumptions underpin the positivist methodology adopted.

1.10 Structure of the Research

Figure 1.1 shows the structure of this thesis which contains the following:

Chapter One provides an overview of the thesis and its structure. In addition, this chapter sets out the objectives and the theoretical background of the thesis, the justification of the research, the research questions, the methodology adopted, the definitions, the assumptions and the thesis' contribution to the literature.

Chapter Two reviews the business sustainability literature primarily within the regional context. This chapter examines the adoption of sustainable development within Australian regional SMEs using qualitative and quantitative studies and definitions. This review informs the gaps in the literature of sustainability issues within regional SMEs.

Chapter Three builds a conceptual framework based on the literature review explained in Chapter Two. This chapter identifies the research process, the survey instrument, the population frame, the data collection, and the ethics in conducting the research.

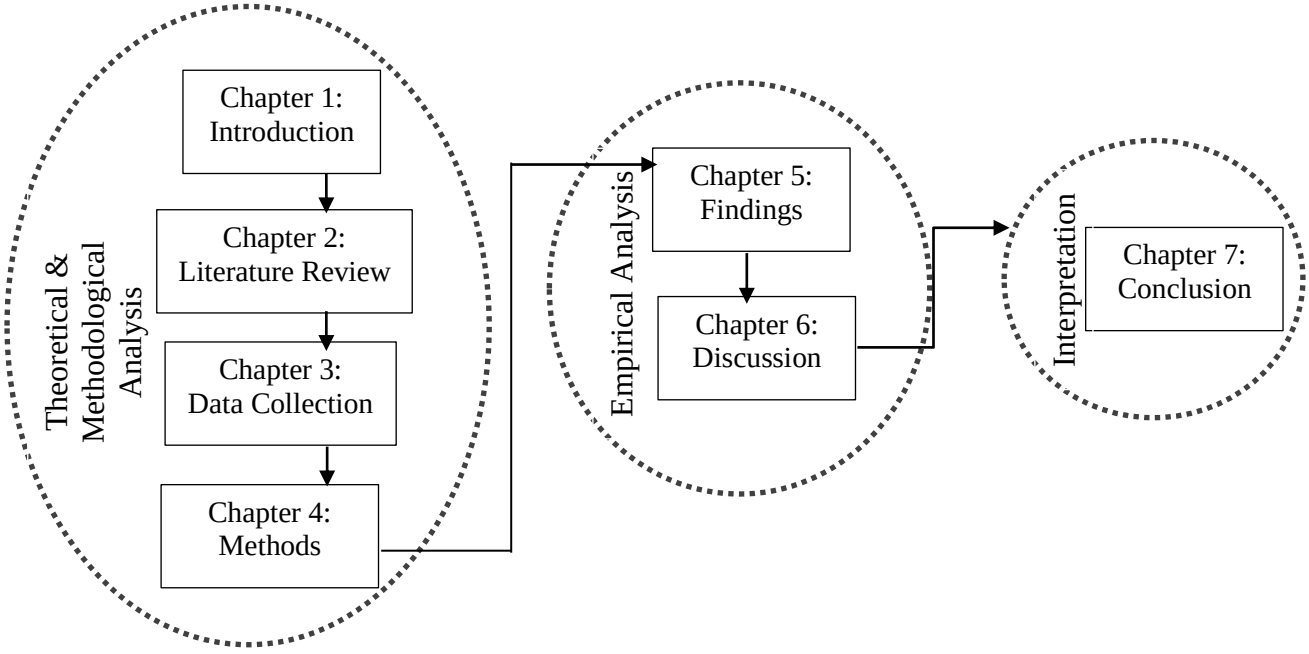
Chapter Four explains and justifies the research methods used in this study. The thesis used a quantitative research approach to address the research questions and test hypothesis. This chapter discusses the data analysis techniques and their required assumptions. It also includes a demographic analysis of the population frame.

Chapter Five contains the quantitative analysis of the data gathered in this thesis. This chapter provides some possible reasons for particular results obtained from the analysis.

Chapter Six discusses the study's finding from the data analysis and presents answers for the research questions. It interprets the results by comparing, contrasting and linking them to the existing literature. This chapter explains how the thesis addresses the four research questions.

Chapter Seven provides a summary of the thesis. It draws conclusions from the study's findings and explains how this research contributes to the literature. The chapter sets out future research and implications.

Figure 1.1 Structure of the Thesis



Source: Author

1.11 Summary

This chapter provided an overview of the study. It presented the context and background for conducting this study. It explained why regional SMEs must pursue sustainable business practices by emphasising the alarming levels of environmental degradation by SMEs. After

explaining the importance of incorporating sustainable development principles in the management of SMEs, this chapter identified that the main focus of this study is to examine the factors influencing the adoption of sustainability within regional SMEs in Australia. It identified that in the context of the challenges faced by SMEs in pursuing sustainable business practices, the above focus of this study is justified and worthwhile. This chapter underscored that by setting up a research project to examine the sustainable practices adopted by regional SMEs, this study has potential to contribute to regional SMEs research on sustainability. This chapter made an attempt to further strengthen the understanding of the context and background of this study by providing a view of the specific research objectives and related research questions addressed in this study. Lastly, it sets out the study's structure. The next chapter begins the study in earnest by reviewing the relevant literature already published in scholarly works.

Chapter 2: Literature Review

2.1 Introduction

The objective of this chapter is to review the literature related to sustainability and SMEs to obtain an insight of the concepts concerning sustainability adoption within regional SMEs. Related theories, debates, views and findings from previous studies are reviewed in this chapter and the gap in the literature is identified. This chapter is organised into three general sections. In the first part, the general literature concerning the regional focus and corporate sustainability are reviewed. Then, definition, characteristics, and importance of SMEs are discussed. Also, it highlights the Australian SMEs' contributions to the national and regional economies. The literature review in the second part relates to sustainability adoption in large businesses and SMEs. It reviews the business sustainability and the triple bottom line of sustainability (i.e. economic, social and environmental). The third part discusses the literature regarding the factors affecting the business sustainability. Internal and external factors affecting the sustainability adoption in SMEs are also reviewed. Finally, a summary is provided.

2.2 Regional Focus

Regions are parts of a country with specific characteristics and not independent units (Rees & Wackernagel, 1994; Graymore et al., 2010). Scholars use diverse criteria for defining a region. These criteria range from natural and ecological characteristics to social, cultural and economic attributes (Potts, 2010). Allen (2003) believes that regions are a heterogeneous mosaic, comprising natural ecosystems, productive or agro-ecosystems and urban ecosystems, as well as heterogeneous social groups often in constant transition as the rural-urban boundaries move and land use changes. Graymore et al. (2010) consider the following characteristics for regional areas: 1) face to face communication is easily done in regions due to region's smallness, 2) due to a strong social network, significant regional issues could be easily spread between people and community groups, 3) policy makers are more easily accessible for local people through their community representative and 4) local people are more likely to participate in social events.

Over recent times, regions encounter some significant challenges such as volatile financial crises, ageing population, diminishing natural resources and climate change's impacts. Regions have faced significant changes in their economies as well. Regional economies are altering from traditional resource-based ones to knowledge-based economies (Martinez-Fernandez & Potts, 2008). Bellamy et al. (2003) believe that region is an appropriate unit for economic growth and challenging sustainability issues at the same time. It supports Potts (2010) view which considers region as a good scale for connecting environmental, social and economic processes. Hence, government policies regarding the national and regional economies must be reformulated in order to address such challenges and improve the quality of life in regions (Potts, 2010).

Sustainability in regions relates to a process which transmits small-scale sustainability practices to regional areas (Burstrom & Korhonen, 2001). The region "links multiple spatial and temporal scales of biodiversity with human uses and socio-economic imperatives" (Brunckhorst, 2005, p. 6). This process requires collective efforts, resources and information (Berger, 2004). Graymore et al. (2010) consider regional sustainability as an important challenge. They believe that social and environmental dimensions of sustainability are closely connected to each other at the regional context. Thus, regional sustainability is the central focus of regional planners and environmental managers. Potts (2010, p. 173) believes that the "greening of economies" is a good strategy to address sustainable development in regions. Such strategies could be implemented through air pollution mitigation, recycling programs, increasing energy efficiency and creating jobs in sustainable businesses and industries.

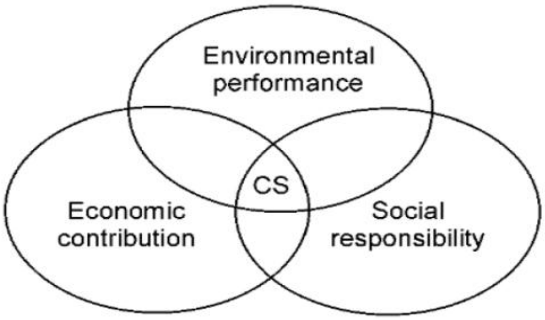
In Australia, the term 'regional' means "outside capital cities" (Thompson & Maginn, 2012, p. 206) or "non-metropolitan" (National Economics, 2002). This is the meaning when the term 'Regional Australia' is used in this study. Thus, the term 'regional city' implies a large urban area outside a capital city (National Economics, 2002) which plays a significant role in Australia's economy. The strength of the Australia's national economy and welfare is significantly dependent upon the productivity and the economic contribution of regional areas (Australian Government, 2014). Around two-thirds of Australia's export earnings come from regional based industries such as agriculture, tourism, retail, services and manufacturing (Australian Government, 2014). Moreover, Australia's cultural values and sense of identity which come from the unique and diverse culture, landscape, history and people, are indebted to regional areas (Australian Government, 2014). Courvisanos (2009) argues for a significant

role of innovation and learning for sustainable development in regional Australia. Thus, development strategies must be appropriate to the needs and resources of regional areas (Mardaneh, 2012a). Moreover, investing in regional community and infrastructure in Australia will boost local economies, increase productivity and improve local quality of life (Australian Government, 2014).

2.3 Corporate Sustainability

The idea of sustainable development was developed from ecological movements and campaigns in earlier decades and was specifically labelled in 1987 by the Brundtland Report through the World Commission on Environment and Development (WCED). The essence of such development is based on the concept of sustainability. "Sustainability is simply ensuring that economic, environmental and social developments go hand in hand" (Dee, 2010, p. 3). Coric et al. (2011, p. 220) explain that for sustainable development, four areas of the economy (poverty, environment, population, and globalisation) should be coordinated with the key business areas of energy and climate, development, and ecosystem. Then, business should address these crucial issues in the context of the profitability of the enterprise. Improving the quality of life for the current generation without compromising the quality of life for next generations is achieved through continued enhancement in environmental, social and economic performance. This general concept when applied to corporations is called Corporate Sustainability (CS) (Azapagic, 2003) and can be schematically represented as set out in Figure 2.1. As shown in Figure 2.1, CS incorporates the social and environmental consequences into the economic essence of every business (Dyllick & Hockerts, 2002, p. 131). Corporates committed to the concept of CS are able to create long term stakeholder value through creating opportunities and controlling risks resultant from financial and non-financial developments (Knoepfel, 2001). Furthermore, incorporation of the risk management of social, economic and environmental dimensions into corporates' values, strategies, operations and relationship management can lead to corporate longevity (Benn & Bolton, 2011).

Figure 2.1 Triple Bottom Line of Corporate Sustainability



Source: Azapagic (2003, p. 304)

CS concentrates on the firm's commitment and accountability to the natural ecosystem, economic development, environmental protection and social equity (Nayak, 2007). Sharma (2003) defines CS as the challenge to reduce the environmental impacts of businesses while advancing social and human welfare concurrently which lead to the effective achievement of organisational goals. It also improves corporate's social, environmental and economic performance (Elkington, 1997). The benefits of CS as outlined by the World Business Council for Sustainable Development (WBCSD) and the International Institute for Sustainable Development (IISD), are summarised as cost savings due to cleaner production techniques and innovation, reduction of health and safety costs, easy access to financiers and insurers, preferential credits and insurance rates, best practice influence on regulation, reputation, market advantage, and access to ethical investors (Hillary, 1995).

Based on Knoepfel (2001), businesses show their commitment to CS through five key principles of investing in innovation, setting the highest standards of corporate governance, meeting shareholders' needs and expectations, performance based on best sustainability practices and showing great concerns to social issues occurring in local and global communities. Dunphy et al. (2007) describe a process by which corporations move towards the sustainability path. They designed a model for comparison of businesses commitment to sustainability. This model is called "The Sustainability Phase Model" (Dunphy et al., 2007, pp. 15-16) in which there are six developmental phases of CS. The first phase is "Rejection" which shows no commitment to sustainable development. In this phase, all the resources and infrastructures are misused by business to make money. The second phase is called "Non-responsiveness". In this phase, CS is ignored due to lack of awareness and information about it, not due to severe opposition. The next phase is "Compliance", where owner/managers

provide a safe and healthy workplace and observe the sustainability principles because they want to reduce the "risk of sanctions for failing to meet minimum standards as an employer or producer" (Dunphy et al., 2007, p. 15). The fourth phase is "Efficiency" in which businesses confirm that sustainability adoption is beneficial for their businesses and it leads to increased efficiency. The fifth phase, "Strategic Pro-activity", makes CS a significant and fundamental part of the business strategy. Firms in this phase view CS as a tool to provide competitive advantage. The last phase which is the ideal one is called "The Sustaining Corporation". This phase is a strong version of CS where firms "internalise the ideology of working for a sustainable world" (Dunphy et al., 2007, p. 16). Firms in this final phase, have a strong ideological commitment to their ecosystem and community, providing safe working conditions and preserving the natural environment.

To sum up, CS at its highest development phase is a corporate business approach which creates lifelong advantages for corporates, communities and ecosystems. This is achieved through the efficient use of resources by combining financial, environmental and social principles in the management system. In other words, the CS challenge is to consider the economic, social and environmental dimensions of sustainability in large business context (Lo & Sheu, 2007). As CS is a specific concept related to the sustainability adoption within the corporates or large businesses, so the term Business Sustainability (BS) embraced in this study is based on sustainability adoption in general business operations. This allows a distinction to be made on sustainability adoption between large corporates and SMEs (see Chapter 1, Section 1.8). Discussion about BS will be presented later in this chapter in Section 2.5.

2.4 Small and Medium Sized Enterprises (SMEs)

Definition

The term SME is defined based on various criteria. These criteria vary from country to country and vary between sources reporting SME definitions. Also, SME has different definitions based on economic activity sectors. Among the several criteria for SME's definition, some of the more commonly used ones are the number of employees, total net assets, sales and investment level, number of annual working hours, annual turnover, annual balance sheet or production volume, and independence of the company (Harjula, 2008). The

number of employees and the annual turnover seem to be the most important criteria used to define SMEs (Peacock, 2004).

Peacock (2004) notes that although there is no globally accepted definition of SMEs, they have some special characteristics that are common across all SME contexts. These special characteristics are: (i) relatively small share of the market they operate in, (ii) managed by their owner(s), (iii) independently owned and operated, and thus not part of a large enterprise. However, SMEs are different from each other even in a same business category (Yu & Bell, 2007). Convenience stores and small shops which are single-family operated with few (or no) employees other than the owners such as bakeries, village handicraft makers, hairdressers, tradesmen, lawyers, accountants, restaurants, guest houses, photographers, small-scale manufacturers and computer software firms are typically referred to as SMEs (Schaper & Volery, 2004). Moreover, SMEs could act as the suppliers to large firms. Howarth and Fredericks (2012) believe that large firms (as the customers of SME suppliers) should track and identify the environmental requirements of the SMEs. It could be done through improving the SMEs' engagement in the supply-chain. It is further supported by Hunt (2000) who suggests that reliable networks such as supply-chains and trade associations play a key role in the information dissemination to SMEs.

Characteristics of SMEs

The main constraint of SMEs is the availability of finance; typically SMEs are constrained by their available resources, sometimes requiring owners to mortgage their family home and/or pay higher finance costs (Poutziouris et al., 2000). Also, SMEs usually cannot afford to employ highly skilled employees to compete with larger businesses or grow with opportunities, because the skilled employees are attracted to larger firms which are perceived as 'less risky' and able to offer better employee benefits (Yusof & Aspinwall, 2000).

Large businesses rarely communicate with SMEs due to SMEs' remoteness (Yu & Bell, 2007), except in supply-chain relations when SMEs act as suppliers to large businesses (Howarth & Fredericks, 2012). One of the prominent differences of SMEs from large businesses is related to SMEs' vulnerability to external factors (Lee et al., 1999; Schaper & Volery, 2004). As a result, SMEs tend to concentrate their efforts in niche market segments in order to operate successfully (Bishop, 1995; Lee et al., 1999). Also, as SMEs' flexibility and adaptability are high compared to large businesses, they have a better capacity to survive in

unstable situations created by external factors outside their very limited control (Fiegenbaum & Karnani, 1991). Table 2.1 shows the different characteristics of large businesses and SMEs. Due to the simple structure of SMEs, the decision process is shorter and dissemination of decisions is faster than larger firms. Also, owner/managers have closer relationships with their customers and therefore are more responsive to them. Furthermore, SMEs have organic structure rather than bureaucratic structure leading to higher levels of employees' participation and contentment (Yusof & Aspinwall, 2000).

Table 2.1 The Characteristics of SMEs and Large Businesses

SMEs	Large Businesses
Dominant role of owner/manager	Management control between directors and stakeholders
Limited resources (assets, time, knowledge and skill)	Economy of scale, resource abundance
Flexible organisation capacities	Bureaucratic rigidity
Focus on short term	Focus on mid to long term
Strong local/regional focus and customer needs orientation	Strong (inter) national focus and looser ties with customers
Low level of formalisation	High level of formalisation

Source: Bos-Brouwers (2010, p. 419).

Importance of SMEs

SMEs represent in excess of 95% of all enterprises and are the major generators of private employment in developed OECD countries (Lukacs, 2005). SMEs act as the mainstay of the economy (Drew, 2003). They comprise a large number of businesses in many national economies, having a significant contribution to economic activities (Udayasankar, 2008). Tse and Soufani (2003) believe that SMEs play a significant role in the future economies. In their study, it is argued that relationships, networks and information are more dominant in new Information Technology-based industries ('the new economy') rather than the size and physical dominance of established traditional industries ('the old economy'). In this regard, SMEs could act as an engine to facilitate the transformation of traditional industries to modern ones. In other words, SMEs are in a unique position to embrace sustainability practices, as Trainer (1998) believes that growth and development of SMEs is a significant part of a sustainable world.

Roxas and Chadee (2012) believe that the importance of SMEs to sustainability is associated with their significant contribution to the global economy. Around the world, the largest

portion of the total number of businesses, employment and gross domestic product belong to SMEs (Ayyagari et al., 2007; Organisation for Economic Co-operation Development, 2009). In this regard, given the largeness of the SME sector, it is difficult to calculate the SMEs' contribution to environmental degradation because there is no comprehensive pollution or resource statistics for SMEs (Organisation for Economic Co-operation Development, 2009). Based on rough estimations, it is known that SMEs contribute to over 70% of global pollution and 60% of carbon emissions (Walker et al., 2008; Martin-Tapia et al., 2010).

Although the total emissions from the production facilities of large and small businesses has been reduced during the past 30 years, the relative share of SMEs' emissions has increased compared to large businesses (Organisation for Economic Co-operation Development, 2009). Each individual SME does not produce large quantities of pollution, but due to SMEs large population, they have a significant environmental impact collectively (Organisation for Economic Co-operation Development, 2009). Given the much larger population of SMEs than large businesses, it is estimated that the total environmental impacts of SMEs outweighs the total environmental impacts of large businesses (Martin-Tapia et al., 2010).

Australian SMEs

In Australia, SMEs account for almost half of the employment in the private non-financial sector. Their highest contribution to employment is in agriculture (86% of the employment). Also, over half of the employment in construction and business services industries belongs to SMEs. Industries which require substantial investment in equipment such as manufacturing and mining have the lowest share of SMEs employment (Connolly et al., 2012).

SMEs in regional areas of Australia contribute to the innovation and job growth and stability in the Australian economy (Evans & Sawyer, 2010). In regional areas of Australia, small businesses account for 35% of all the businesses which are slightly more prevalent compared to 33% for medium and large ones. Regional Queensland and Tasmania have the highest share of small businesses. By business category, agriculture and business services are the most common industries in regional Australia (each accounting for a quarter of small businesses) (Connolly et al., 2012).

2.5 Business Sustainability[4]

Businesses have responsibilities beyond the production of goods and services and making money. They should be involved in helping to solve community problems (Frederick, 2006; Husted et al., 2008), support community activities and programs (Pirsch et al., 2007; Shahin & Zairi, 2007) and be careful of their local environmental impacts (Aragon-Correa et al., 2008). Business sustainability (BS) is associated to having a triple bottom line of social, environmental and economic conditions (Elkington, 1997) in the business management systems (Zwetsloot & Van Marrewijk, 2004; Luken & Stares, 2005; Kleine & Hauff, 2009) for the long term. In other words, BS is referred to a "business's economic, social and environmental initiatives in ensuring the future" (Schoenherr, 2011, p. 116). Thus, businesses should integrate not just the economic profits but also the environmental and social friendly activities into their strategies (Zwetsloot & Van Marrewijk, 2004; Masurel, 2007). They need to integrate environmental and social concerns into the business culture, decision making process, strategy, operation and interaction with different stakeholders (Zwetsloot & Van Marrewijk, 2004; Alcaniz et al., 2010; Linnenluecke & Griffiths, 2010). This helps businesses to develop goals that protect the natural environment and provide a better quality of life for communities (Branzei & Vertinsky, 2002; Zwetsloot & Van Marrewijk, 2004; Roxas & Chadee, 2012).

Savitz and Weber (2006, p. 26) define BS as a tool which assists businesses to be viable for a long time through managing based on principles. It results in strengthening the firm's roots in the environment, community and the economy. According to Figge and Hahn (2005), contribution to BS occurs when capital is used by a business in more efficient ways than by other businesses. BS assists businesses to manage in better ways through reducing the risk of harm, improving productivity, reducing costs, reducing wastes, opening new markets, increasing the innovation, increasing customer satisfaction, growing market shares,

[4] It may be recalled that BS (Business Sustainability) is the term adopted in this study because CS is a concept which cannot be applied to SMEs as it assumes similarity with large corporates (Jenkins, 2004) (see Chapter 1, Section 1.8). Hence, the author applies the more general term of BS which covers all business forms including corporates and SMEs as well (Bansal & DesJardine, 2014). As a concept, there is no difference between BS and CS, since the triple bottom line of economic, social and environmental is applicable in both cases. However, there is a difference in the context where these two terms are applied. CS is used when referring to the sustainability orientation of corporates and large firms only. However BS refers to the sustainability orientation of all types of businesses including SMEs (Lawrence et al., 2006) and family businesses (Zachary, 2011).

improving brand value and reputation and obtaining access to capital at lower costs (Savitz & Weber, 2006).

BS, as adopted in the multitude of ways identified in the paragraph above, implies a set of sustainability principles that enable businesses to support strategies such as engaging stakeholders in the business decisions and adopting policies on social, environmental and economic accountabilities (GRI, 2014). The main reason to adhere to BS principles is a simple fact of needing to survive and succeed in today's competitive world (Parker, 2003; Deegan, 2007; Branco & Rodrigues, 2007; Sawyer & Evans, 2009, 2010). Long term commitment to sustainability enables businesses to capture new markets resulting in improved competitiveness and reputation (Azapagic, 2003). In other words, BS is increasingly seen as a source of competitive advantage.

Engagement with BS principles allows businesses to make profit for their stakeholders who are considered the businesses' potential beneficiaries and or risk-carriers as they are affected by practices adopted within businesses (Savitz & Weber, 2006). Post et al. (2002) define stakeholders as the people and bodies which help a business to make profits. Stakeholders are only satisfied with the business activities, if the business policies and strategies regularly respect the community and natural environment (Evans & Sawyer, 2010). Stakeholders' engagement with the business is an essential part of the business sustainability strategy (Azapagic, 2003). They evaluate the business's performance based on triple bottom line of economic (e.g. price of a product or service), environmental (e.g. recyclability of the product), and social (e.g. prevention of child working) (Azapagic, 2003). According to Savitz and Weber (2006), businesses could succeed in today's competitive market provided that they adhere to BS principles by developing close relationships with the wide range of stakeholders and providing new products and services for them. Azapagic (2003) believes that the identification of stakeholders and understanding their needs and wants are the preconditions for a successful and sustainable business.

To sum up, the business mission is adjusted by the sustainable development principles (Azapagic, 2003). Businesses need to demonstrate an unceasing improvement of the sustainability's triple bottom line, i.e. economic, social and environmental performance outcomes. Following subsections provide more insight about the triple bottom line of business sustainability.

Triple bottom line

Triple bottom line (Elkington, 1997) is a widely accepted framework in BS which helps to better understand the role of business in the sustainable development (Roxas & Chadee, 2012). Triple bottom line framework explains that businesses regardless of their size, should accept pressure from the community to adopt strategies and practices to reduce their negative environmental and social impacts which come from their economic activities (Fraj-Andres et al., 2009; Alcaniz et al., 2010; Roxas & Chadee, 2012). In order to engage with sustainable development, businesses are required to show that their activities are socially justified, economically viable and environmentally friendly (Roxas & Chadee, 2012). In triple bottom line framework, businesses are needed to consider economic, social and environmental dimensions of their activities in order to engage with sustainable development in the long term (Elkington, 1997; Roxas & Chadee, 2012).

Economic Dimension

Economic contribution of sustainability is associated with the business essence to make money and keep the 'liveability' of an investment body (Elkington, 1997; Roxas & Chadee, 2012). Economic dimension of BS requires a firm to affect the financial status of its stakeholders positively via long-term participation in the market (Chow & Chen, 2012). It is related to being economically practicable and having sufficient "cash flow" (Dyllick & Hockerts, 2002 p. 133), and also making adequate returns to firm's shareholders or equity owners (Benn & Bolton, 2011). Baumgartner and Ebner (2010) believe that economically sustainable businesses prefer to achieve economic success rather than financial returns. Based on Azapagic (2003), economic dimension of sustainability plays a central role in sustainable development in the business context. It improves the community wellbeing via profit making and employing community people. In this regards, economic dimension is divided into two parts: 1) micro-economic issues which are related to the financial performance of the businesses like sales or turnover, 2) macro-economic issues which are related to the contribution of the business to national and international economies such as employment (Azapagic, 2003).

Social Dimension

Social sustainability asks businesses to meet the various needs and expectations of their stakeholders (Elkington, 1997; Roxas & Chadee, 2012). BS-based businesses should accept

their broader responsibilities towards the community and stakeholders to satisfy their needs and improve their commitments (Baumgartner & Ebner, 2010). According to some scholars (Sharma & Ruud, 2003; Foot & Ross, 2004; Lawrence et al., 2006), social sustainability is the least known dimension of the sustainable development and needs to be better defined and adopted by businesses. Social dimension of BS aims to reduce community inequality, contribute to better quality of life and provide better relationships with the firms' stakeholders (Chow & Chen, 2012). The social part of BS involves the firm's stakeholders in the decision making processes (Geibler et al., 2006) and observes transparency (Erol et al., 2009) and equal distribution of values (Halme et al., 2006). Also, it considers the health and safety of the society and provides a safe working condition for employees (Baumgartner & Ebner, 2010). Based on Azapagic and Perdan (2000), social dimension of sustainable development in the business context is divided into three parts: 1) social welfare, in particular education and providing a healthy and safe working and living setting, 2) equal opportunity for the community (e.g. non-discrimination), and 3) ethical concerns with observance of human rights (e.g. non-exploitation of young or immigrant workers). Socially sustainable businesses commit to the communities in which they operate and the value of human resources is very well known in the ethics profile of such businesses (Azapagic, 2003). They try to increase human capital and contribute to societal capital in a way that the community and social groups accept these businesses' attitudes and support their motivation (Dyllick & Hockerts, 2002).

Environmental Dimension

Environmental sustainability is a strategic construct within the business philosophy which is an exposure of the firm's awareness, engagement and commitment to practices related to natural environment protection (Roxas & Chadee, 2012). Environmental dimension of BS is related to a process through which a firm manages its operation in order to minimise its harm to the environment (Chow & Chen, 2012), preserve the natural environment and improve the health of the biosphere (Benn & Bolton, 2011). This dimension of sustainability in business context is demonstrated in different ways; some businesses adopt waste reduction and recycling practices to prevent air pollution (Keijzers, 2002). Others use technologies and materials which are less harmful for the environment (Branzei & Vertinsky, 2002). This dimension does not go further into the more complex adaptive system of ecological sustainability (Walker & Salt, 2006) which is inappropriate at this level of investigating environmental practices of SMEs.

The importance of the environment has been emphasised by Branco and Rodrigues (2007, p.5) who believe that "regardless of any stakeholders' pressures, actions which lead to things such as the conservation of the earth's natural resources or bio-diversity preservations, are morally praiseworthy". This issue has been amplified by the climate change crisis (Roxas & Chadee, 2012). Environmental sustainability acts as a catalyst in business to transform the business activities to environmental friendly ones, making a balance between economic and environmental goals (Tilley & Fuller, 2000; Roxas & Chadee, 2012).

Based on environmental sustainability, businesses should monitor and control their activities' environmental impacts to be less damaging to the natural environment (Elkington, 1997; Roxas & Chadee, 2012). For being environmentally sustainable, a business should invest in some activities such as reducing water consumption (Erol et al., 2009), buying green products (Zsidisin & Siferd, 2001), using less traditional fuels (Lindgreen et al., 2009), and reducing the negative impact on animal species and natural habitats (Rueda-Manzanares et al., 2008). By investing in environmental practices, businesses obtain competitive advantage leading to improved operational performance (Melnyk et al., 2003; Pagell & Gobeli, 2009; Yang et al., 2010, 2011). Schoenherr (2011, p. 124) believes that adopting environmental practices is useful not only in terms of "doing the right thing" but also in terms of operational performance. In addition, there is an increased social awareness about the environmental protection which demands businesses to make their practices compatible with efficient management of the environment and natural resources (Buysse & Verbeke, 2003). Hence, businesses are required to take responsibility of their practices and try to reduce their businesses environmental impacts if they want to be able to compete in the business environment of which they operate (Wagner, 2005, 2009).

2.6 Sustainability in SMEs

Four major research issues arise in the literature on sustainability and SMEs. First is that no business, not even an SME, is exempt from the sustainability challenge. Second, the misconception by SME owner/managers that they do not have the potential to impact on the environment needs to be addressed. Third, there are benefits that SMEs can gain from sustainable practices. Fourth, SMEs can play a unique role in the sustainability challenge due to their position in local communities (especially in Regional Australia). These issues are discussed below in the context of the extant literature.

SMEs are no more exempt from the sustainability challenge. They face many business challenges including employee issues, product quality and pricing, environmental impact and government regulation problems (Evans & Sawyer, 2010). Owner/managers of SMEs more and more are required to operate in a socially and environmentally friendly manner. Kerr (2006) finds that SMEs with strong social and environmental ethics are more interested in confronting the issues of environmental and social sustainability which is due to the pressure of the internal business culture for fostering an awareness of sustainability issues. this presuure is critical as Roxas et al. (2009) consider SMEs to be "the engine of economic growth" due to their significant contribution to the global economy. The huge number of SMEs around the world justifies the essential need to research about their environmental and social consequences as they collectively consume more energy and produce more wastes in their daily operation (Roxas & Chadee, 2012).

Previous sustainability research has concentrated on large businesses and paid limited attention to the social and environmental friendly activities of SMEs. Generally, sustainability practices are different in SMEs and large businesses because there are significant structural, cultural and resource-based differences between these two types of businesses (Bos-Brouwers, 2010). Azapagic (2003) believes that most large businesses are cautious about how to deal with the natural environment as they know the environmental impacts of their business activities. But many SME owner/managers believe that they do not have the potential to impact the environment due to their businesses' small size (Rowe & Hollingsworth, 1996; Lee, 2000). Moreover, SMEs are often not researched because it is too expensive and time consuming to reach them (Rutherfoord et al., 2000; Sawyer & Evans, 2009). In other words, little information is available about how SMEs are oriented towards the business sustainability issues (Perrini et al., 2007; Lee & Klassen, 2008; Dangelico & Pujari, 2010; Kuckertz & Wagner, 2010) particularly in developing economies (Luken & Stares, 2005) and dispersed smaller communities (Moyeen & Courvisanos, 2012). Past studies about the status of sustainability in SMEs are usually conceptual or theoretical (Van Marrewijk & Werre, 2003; Kuckertz & Wagner, 2010; Linnenluecke & Griffiths, 2010; Roxas & Chadee, 2012). The absence of enough studies on SMEs orientation towards sustainable development might be due to the emergent nature of the sustainability concept and its relationship with large businesses and industries (Evans & Sawyer, 2010; Kuckertz & Wagner, 2010).

Realising the importance of SMEs in contributing to sustainability, some research (Thompson & Smith, 1991; Welford, 1994; Hillary, 1995; Merritt, 1998) has been carried out to fill the research gap, but they mainly focus on environmental aspects of sustainability within SMEs (Welford, 1994; Hillary, 1995; O'Laire & Welford, 1996; Petts, 2000; Williams et al., 2000; Friedman et al., 2000; Simpson et al., 2004). Social sustainability has been studied less than environmental sustainability (Yu & Bell, 2007).

Sustainable practices adoption is very beneficial in the SMEs context; for instance, waste reduction programs could reduce costs, and better quality products and services are resultants from environmental and social friendly practices (Gadenne et al., 2009). However, some scholars (Groundwork, 1995, 1998; Roberts et al., 2006) believe that SMEs engagement with sustainability is not an easy task as they usually are sceptical of the financial and non-financial advantages obtained from investment in sustainability. In this regard, there are some external and internal groups which are able to convince the SME owner/managers of the advantages from the adoption of sustainability practices. Customers (through purchasing), suppliers (through information distribution about improved environmental and social practices), local communities (through public scrutiny and sanctioning) and employees (through participation in sustainable activities) are groups who have the position to influence the owner/managers of SMEs to adopt social and environmental friendly practices (Smith & Oakley, 1994; Biondi et al., 2000; Yusof & Aspinwall, 2000; Gerstenfeld & Roberts, 2000; Lepoutre & Heene, 2006; Deegan, 2007). Based on Williamson and Lynch-Wood (2001), suppliers and customers are recognised as the key sources of sustainability information.

Apart from the human resources, the nature and amount of resources is represented by the size of the firm (Lepoutre & Heene, 2006; Penrose & Pitelis, 2009). Limited resources, limited operation and limited visibility compared to large businesses are common characteristics of small firms (Udayasankar, 2008). Accessibility to different kinds of resources in SMEs is vital as it contributes to the development of SMEs' competitive advantage and better performance (Roxas & Chadee, 2012). When a business encounters resource shortage, it is perceived as very difficult to integrate social and environmental friendly practices to its business process because the business can only meet its economic needs with limited resources (Roxas & Chadee, 2012). In other words, limited resources in SMEs force them to meet their economic needs, resulting to a very low level of the adoption of sustainability practices. Pedersen (2009) shows that limited financial resources impact on SMEs' involvement in business sustainability. Sarbutts (2003) further confirms that SMEs

tend to engage in sustainable practices which have clear, measurable and short or medium term return on investment. Because sustainable practices have long term and intangible advantages, so SMEs engagement with BS is often low (Roxas & Chadee, 2012).

Udayasankar (2008) believes that lack of resources in SMEs restrict their engagement with sustainability. SMEs have "less visibility" compared to large businesses (Udayasankar, 2008, p. 168). Also, they have limited and small-scale business operations (Udayasankar, 2008). All these characteristics of SMEs may cause the low adoption of sustainable practices. SMEs have limited time and resources to dedicate to long-term concerns such as sustainability strategies because they are normally fully occupied and also they operate daily (Hobbs, 2000). The costs of sustainability implementation in SMEs are high, especially in the manufacturing and primary resource sectors, so low environmental impact products are difficult to produce by SMEs (Princic, 2003). Also, due to the competitive nature of the business environment, the cost of environmental initiatives could not be passed on to the customer, since it is seen as a business cost. In other words, the firms have to make operational change which leads to reduced costs and progressive environmental performance, simultaneously, but the motivating factor is cost efficiency rather than environmental responsibility (Simpson et al., 2004).

In spite of the limited resources of SMEs, Spence (2007) believes that SMEs have the potential to successfully adopt socially and environmentally friendly practices as they are an integral part of their local community so they would consider it appropriate to alter their physical integrity to an ethical one. It confirms the notion by Sinha and Akoorie (2010) on the SMEs' sustainability adoption. They believe that SMEs can respond easily to business sustainability challenge due to their flexibility and adaptability. Trainer (1998) believes that SMEs are in a unique position to embrace sustainability practices so growth and development of SMEs is a significant part of a sustainable world. In particular, SMEs develop close relationships with their customers, so they can depict the value of sustainable services and products to their customers (Kerr, 2006; Aragon-Correa et al., 2008). Also, SMEs can easily respond to sustainability issues in the communities through their diversity and flexibility (Hawken, 1993; Sinha & Akoorie, 2010) provided that they receive enough support and incentive to match their diversity and adaptability (Welford, 1997). Similarly, their low usage of non-renewable resources due to their small size means they are able to adopt sustainability in their businesses easier than large businesses (Jones & Welford, 1997).

According to Simpson et al. (2004), SMEs engagement with sustainability could bring various benefits including waste reduction, cost savings, customer satisfaction, more commitment of employees, improved products, improved public relations and competitive advantage. Sustainable SMEs are able to increase their market value and overtake their business rivals (Porter & van der Linde, 1995) as empirical tests show a significant correlation between SMEs' effort to adopt sustainability and enhanced performance efficiency, increased profits and better business image (Naffziger & Montagno, 2003). In addition, empowering employees by letting them share their views with owner/managers and providing training and development opportunities are important for having a sustainable SME. Keeping a happy workplace, addressing employees needs and providing fair salaries and monetary remuneration have a positive effect on the employees' satisfaction leading to more sustainable businesses (Evans & Sawyer, 2010).

Apart from the employee issues, supporting the community and engaging with a community's programs is an indication of a sustainable SME. Socially friendly SMEs usually adopt different social activities ranging from donation of goods and services to local bodies and charities to sponsoring events and school projects (Evans & Sawyer, 2010). As well, environmentally friendly SMEs are concerned about their environmental impacts. They usually try to avoid unnecessary waste of energy and materials, adopt recycling programs, reduce the use of vehicles, use bicycles for local deliveries, use environmentally friendly products and keep the neighbourhood around their premises clean (Evans & Sawyer, 2010).

Due to SMEs unique characteristics and the lack of knowledge about their diverse characteristics, sometimes government and business-support bodies fail to help SMEs to promote their adoption of sustainable practices (Hillary, 2000). According to Roxas and Chadee (2012), government policies and programs for encouraging SMEs to adopt sustainability should concentrate not just on monetary assistance because the adoption of sustainable practices does not only rely on financial resources.

SMEs are usually unaware of the advantages from sustainability adoption (O'Laire & Welford, 1996) because management models are unable to integrate SMEs management strategies into the sustainability issues (Hass, 1996). As a result, strategies and tools for adopting sustainability practices are usually developed for large companies and it is very difficult for SMEs to transfer and incorporate them into their management processes (Ammenberg & Hjelm, 2003; Holt et al., 2000). Moreover, most SMEs do not know about

the concept of sustainability, let alone incorporate it into their business strategies (Yu & Bell, 2007). So a different approach to SMEs' business sustainability is needed to be developed.

Management attitudes play a prominent role in the level of adoption of sustainability by SMEs. In some cases, the owner/managers of SMEs feel little responsibility towards the environment and society because they think that their businesses have little individual impact on the environment (Yu & Bell, 2007). However some studies show a different perspective. For example, in UK, where SMEs constitute 99.8% of the businesses in private sector, a study about the environmental practices of 220 UK SMEs by Revell et al. (2010) reports that the large number of owner/managers of these firms are ready to pay the costs of the environmental regulations and taxation because they feel more responsibility towards the environment and their community. This study shows that owner/managers can be encouraged to adopt sustainability not just by "push of legislation" but also by the "pull of cost saving, new customers, higher staff retention and good publicity for their firm" (Revell et al., 2010, p. 273).

SMEs, as significant regional development agents, can play an important role in the adoption of sustainability. This is especially the case in Regional Australia where SMEs constitute approximately 95% of all businesses in services and industry sectors (Australian Bureau of Statistics, 2011). However, the literature on Australian SMEs and sustainability issues is very limited, particularly in the regional context. One of the reasons behind the limited studies about sustainability in regional SMEs is related to the confidentiality of SMEs financial statements and absence of sustainability reports covering Regional Australia (Lucas et al., 2009).

In a study by Sawyer and Evans (2009), which looks at a regional area of South Australia, the study found that the majority of SME owner/managers adopt socially responsible practices due to their attitude towards the community. They believe that being socially responsible gives them personal pride and is the right thing to do. This confirms the study by Fassin (2008) who discusses that low engagement of SMEs with sustainability is to do with their own commitment and not due to any formal sustainability reporting requirement. Based on this study, most SME owner/managers adopt sustainable practices informally because they 'feel right' and it is the 'decent thing to do'. According to Lucas et al. (2009), the extent of socially and environmentally responsible SME behaviour in their North Coast regional study has very low correlation with demographic variables like age. They conclude that

sustainability requires additional resources because they impact negatively on short term financial performance in SMEs. Also, significant differences exist in owner/managers' attitudes towards broader environmental issues (Rutherfoord et al., 2000) and their community (Miller & Besser, 2000). Based on a study by Dawson et al. (2002), for Australian small businesses operators, ethical concerns are significant, but there are some variations according to age, gender and education.

2.7 Factors Affecting Business Sustainability

The reasons for sustainability adoption within businesses refer to different issues. Some businesses want to gain competitive advantage; they want to enter to the market and create an effective business image (Bhattacharya & Sen, 2004; Marshall et al., 2005; Tullberg, 2005; Bhaskaran et al., 2006; Castka & Balzarova, 2008). While some businesses adopt sustainability due to its monetary advantages such as cost saving, improved efficiency and profit (Munilla & Miles, 2005; Marshall et al., 2005; Bhaskaran et al., 2006). Furthermore, customers demand sustainable products and services and business owner/managers feel pressure from investors, society and their business rivals to adopt sustainable practices. Also, employees act as positive motivators to engage owner/managers with sustainable activities. Azapagic (2003) believes that the increased awareness of sustainability among employees will not only create practical innovation, but will also enhance the enjoyment of being part of a business that is committed to respect the community in a socially and environmentally responsible manner. Understanding the meaning of sustainability in general and how it is linked to the business practices is very important in the adoption of sustainability. If sustainability is going to be taken seriously and integrated into the business practice, awareness raising and training among all employees are needed (Azapagic, 2003).

Apart from the employees, owner/managers attitudes towards sustainability contribute to its adoption (Bhattacharya & Sen, 2004; Bjorner et al., 2004; Marshall et al., 2005; Tullberg, 2005; Haigh & Jones, 2006; Chahal & Sharma, 2006). Potts (2010) believes that BS originates from socially progressive influences on the traditional business base, but the points of distinction relate to the commitment to sustainable development. A study on New Zealand wine industry by Gabzdylova et al. (2009) finds that owner/managers personal values, preferences and satisfaction with the work affect their engagement with sustainability. This confirms Quazi (2003) who explains that businesses are managed and represented by people

with social obligations, thus SME owner/managers (as people) with internal values and attitudes toward the environment and community are critical drivers to the adoption or non-adoption of sustainable activities.

Cost, management's time and knowledge/skills are reported as the three important limitations or barriers to the adoption of BS in the study of Collins et al. (2010). Azapagic (2003) summarises the potential barriers to the adoption of sustainability in business context as 1) lack of time and resources, 2) giving too much importance to financial priorities, 3) complications in explaining the advantages of sustainability in monetary manner, 4) long payback time, and 5) lack of knowledge about the sustainability issues and what can be done to have a sustainable business. Moreover, product quality and customers' demand are important drivers for the adoption of sustainable practices (Gabzdylova et al., 2009). This view is confirmed by a New Zealand Business Council online survey in which 70% of respondents suggest that business engagement with sustainability is a prominent reason for the purchase of products or services from such engaged businesses (New Zealand Business Council , 2007). Collins et al. (2010) argue that businesses are requested by customers to adopt sustainability issues.

2.8 Factors Affecting Business Sustainability in SMEs

The purpose of every business is to improve its economic value in the market by meeting customer needs, wants and benefits. SME businesses are the mainstay of economic contribution so they are not exempt from this purpose. If SMEs want to be successful, they should respond to the sustainability challenges because customers evaluate a firm based on the sustainable practices (Wells, 2011). In this respect, there are some factors which contribute to appreciation of customer demand through the adoption of sustainability practices within SMEs.

Kusyk and Lozano (2007) identify internal and external drivers and barriers affecting the socially and environmentally responsible behaviour of SMEs. They find that the "moral and ethical attitude of the owner/managers towards the community and environment" and "lack of financial resources and time" are the main internal drivers and barriers for SMEs to be social and environmental responsible, respectively. From an external perspective, customers, suppliers and community are found as the most effective drivers to adopt responsible

activities. Moreover, "cost cutting top-down pressure from the suppliers" is recognised as the main external barrier. According to Roxas and Chadee (2012, p. 221) three major factors affect the adoption of environmental friendly activities, these factors are called the "3A's" of environmental sustainability orientation: (i) Awareness of environmental sustainability issues, (ii) Actions for environmental sustainability, and (iii) Appreciation of environmental sustainability. The awareness of environmental sustainability issues acts as a precondition towards the adoption of business sustainable practices because it is an important factor impacting the firm's strategic orientation. Actions for environmental sustainability represent the nature and extent of sustainable practices adopted by SMEs. Appreciation for environmental sustainability is related to the tangible and positive returns of the sustainability adoption during the long term of business operations.

In relation to the BS literature, two groups of effective factors are offered. One group is internal factors that influence the adoption of sustainable practices from inside of SMEs. The other is external factors that affect the sustainability adoption from outside of the business. The following subsections provide the relevant literature on the internal and external factors affecting BS in SMEs.

2.8.1 Internal Factors Affecting Business Sustainability in SMEs

SME owner/managers work long hours with limited financial resources so they do not have enough time to learn about environmental and social friendly practices (Hillary, 1999; Friedman et al., 2000; Rutherfoord et al., 2000; Schaper, 2002). Gadenne et al. (2009) believe that lack of time, which is related to less positive attitudes, impact on the limited adopted practices in SMEs but not on the owner/managers' knowledge about the environment. However, in contrast, Hillary (1999) shows that limited resources affect the owner/managers' knowledge about the sustainability issue and its advantages, rather than the actual adoption of social and environmental friendly activities. Based on this latter study, lack of financial resources in SMEs is related to the low operating margins and low cost savings, such that sustainability implementation comes from practices which are adopted in SMEs with "a degree of scepticism" (Hillary, 1999, p. 22). Overall, the consensus of these studies is that SMEs lack resources to fully implement social and environmental sustainable practices in a manner considered 'sustaining' in terms of Dunphy et al. (2007)'s highest phase.

According to Sawyer and Evans (2009), the main barriers to sustainability adoption identified by regional SMEs in South Australia are time and financial resources limitations. Regional SMEs believe that only a few customers consider ethical issues when they purchase from small businesses. In general, lack of time and financial resources are seen as barriers for SMEs to adopt sustainability (Tilley, 1999; Biondi et al., 2000; Gerrans & Hutchinson, 2000; Lepoutre & Heene, 2006; Roberts et al., 2006). In a survey study of UK SMEs by Simpson et al. (2004), they observe that 75% of owner/managers of SMEs consider environmental action as a business cost and 80% of them believe that there is no relationship between sustainability adoption and improved customer satisfaction. It confirms the study of Jamali et al. (2009) which shows that the main reason for non-adoption of sustainable practices in SMEs is related to the lack of resources. Given this view, the limited number of SME focused research on sustainability issues justifies such a study as this current PhD study.

SME operators usually reject implementation of sustainability principles, as it increases business costs (Revell & Blackburn, 2007; Bos-Brouwers, 2010). In a study by Luken and Stares (2005) of 22 SMEs in Asian countries, they confirm that cost is a major barrier to adopting sustainability practices. Further, owner/managers of SMEs have a negative attitude towards the financial returns from sustainability investment (Petts et al., 1998; Revell & Rutherfoord, 2003; Bos-Brouwers, 2010; Revell et al., 2010).

In the SME context, sustainability is seen as a business cost which is not transferrable to the customers due to the competitive nature of the market business environment (Simpson et al., 2004). It supports the findings of Revell and Rutherfoord (2003)'s study in which SME owner/managers perceive no link between improved sustainability performance and financial benefits. SME owner/managers usually ignore the business case for sustainability in favour of the more pragmatic view that environmental sustainability leads to an increase in business costs providing insufficient incentive to adopt sustainability voluntarily (Revell & Blackburn, 2007). Therefore, SMEs cannot be left to voluntarily change their impacts on the environment, and government intervention is required, whether through regulation or incentive and education. Along with governments, suppliers should encourage adoption of sustainability practices by SMEs (Rutherfoord et al., 2000), as both stakeholders would create pressure on SME owner/managers to follow sustainability principles (Drake et al., 2004).

SME owner/managers' motivation is a factor impacting attitudes towards customer satisfaction and dealing with suppliers. Also, face to face transactions lead to an enhanced

customer satisfaction (Evans & Sawyer, 2010). Kerr (2006) believes that the key factor for the SMEs engagement with sustainability is that owner/managers provide a business culture to achieve environmental and social improvement. This culture should formulate environmental and social objectives, and encourage employees to have positive attitudes towards sustainability issues.

Owner/managers of SMEs usually ignore the physical environmental impact of their enterprises due to what such SMEs perceive as little or negligible environmental impact that each individual SME contributes (Hillary, 1995; Ammenberg & Hjelm, 2003; Simpson et al., 2004; Revell et al., 2010). This supports Bos-Brouwers (2010) who specifies SMEs' perception of little individual impact on the environment as the primary barrier to SME sustainability. Moreover, Lawrence et al. (2006) in a research of SMEs in New Zealand find that fewer barriers to sustainability adoption are reported by SMEs compared to large businesses. They conclude that SMEs do not beilieve in their environmental and social impacts compared to large businesses. In contrast, some scholars find that the owner/managers of SMEs know about their businesses' impact on the environment (e.g. Roberts et al., 2006; Tilley, 1999; Groundwork, 1995). According to Gadenne et al. (2009), those owner/managers who are aware of the impact of their businesses on the environment, are more likely to respond to the sustainability challenge.

Individual concerns of the owners/managers are reflected in their beliefs and attitudes towards sustainability issues (Ajzen & Fishbein, 1980). So respecting the environment and community in which SMEs operate, is an ethical concern (Gadenne et al., 2009) and those owner/managers who perceive environmental management as an ethical issue, will be more likely to involve in a group of environmental friendly practices like recycling and waste reduction irrespective of engaging in formal certification process (Hillary, 1999). In other words, owner/managers' individual concerns about sustainability act as effective factors to adopt sustainable practices in SMEs (Bansal & Roth, 2000). For instance, some of the owner/managers of SMEs are ready to engage with sustainable practices regardless of regulation requirements or financial and non-financial benefits obtained from this action (Gadenne et al., 2009).

About the attitudes of owner/managers towards sustainability issues, there are conflicting views. Since preserving the environment is considered as an ethical issue, so some owner/managers adopt sustainability in their management processes due to their personal

belief and commitment to their local community and environment, regardless of regulation pressure or financial benefits from sustainability adoption. In other words, some studies show that there is a positive correlation between owner/managers' individual concerns and their expending time and resources on sustainability (Hillary, 1995; Roberts et al., 2006; Gadenne et al., 2009).

Naffziger and Montagno (2003) find that the owner/managers, who have more positive attitudes towards the environment, are more ready to spend the time and resources on the environmental friendly practices. In a study of regional SMEs in South Australia, Evans and Sawyer (2010) find that many of the participated SMEs adopt social and environmental friendly activities because they believe that it is a right thing to do and gives them a sense of pride. It aligns with the study of Fassin (2008), who claims that most SMEs consider their informal responsible performance as normal, because they feel right and it is the noble thing to do. Personal values of SME owner/managers is reported as one of the important motivators to adopt sustainability in a study of SMEs in New Zealand by Lawrence et al. (2006).

In contrast, some studies find no correlation between positive attitudes towards the environment and environmental friendly actions. For instance, Tilley (1999) report a gap between the attitudes of SME owner/managers towards the environment and their adopted environmental friendly practices. Also, Schaper (2002) acknowledges that there is no relationship between positive attitudes towards the environment and positive environmental performance in SMEs context.

Apart from personal values, owner/managers' personal characteristics such as age and education are effective in the adoption of BS by SMEs (Petts et al., 1998; Schaper, 2002). For example, Besser (1999) finds a correlation between demographic variables and the adoption of sustainability, i.e. owner/managers with the higher level of education and experience show higher level of commitment to environment and community. In a study of Australian SME owner/managers, Schaper (2002) find that age of the owner/managers has an impact on their engagement with sustainability. This study finds a negative relationship between age and positive attitudes towards the sustainability. In other words, younger owner/managers are more likely to be concerned about the environment and community. Moreover, Olli and Wollebaek (2001) find that younger owner/managers seem more interested in the environment while older owner/managers are more likely to act in a less wasteful manner because they have experienced more challenging financial situations.

The owner/managers of SMEs are reported to have poor knowledge about the environment and various environmental regulations and standards (Groundwork, 1995; Tilley, 1999; Gerrans & Hutchinson, 2000; Williamson & Lynch-Wood, 2001; Simpson et al., 2004). They are not even aware of the relevant bodies which offer support and information for small businesses (Tilley, 1999). Generally, SMEs' access to the information regarding BS is limited (Lepoutre & Heene, 2006; Roberts et al., 2006) which leads to the low level of sustainability adoption within SMEs (Gadenne et al., 2009). Hence one of the benefits of environmental regulations is that it would raise the environmental knowledge of the owner/managers in SMEs and provide clear guidelines for them to embark on sustainability (Gadenne et al., 2009).

SMEs usually do not have enough expertise and understanding of the environmental strategies and standards (Tilley, 1999; Welford, 1994; Ammenberg & Hjelm, 2003; Simpson et al., 2004; Bos-Brouwers, 2010). According to Olli and Wollebaek (2001), higher education of owner/managers is related to the higher level of environmental and social concerns but is not necessarily associated with environmental behaviour. Lack of expertise in environmental, technical and financial management (Borga et al., 2009), lack of knowledge and information about sustainability (Del Brio & Junquera, 2003) and lack of enough tools and resources to deal with environmental issues (Revell et al., 2010; Roxas & Chadee, 2012) are seen as barriers to sustainability by SMEs.

2.8.2 External Factors Affecting Business Sustainability in SMEs

Based on the review of the literature in this study, it is observed that influences of key external groups (or stakeholder) of government, suppliers, customers and local communities, which combined with internal influences of employees and owner/managers, impact on the adoption of environmental and social friendly practices by SMEs. The impact of business on the environment and community is considered as a concerning issue not only among environmental and social bodies and legislators, but also among customers, local communities, suppliers and employees (Petts et al., 1998; Bubna-Litic & De Leeuw, 1999; Deegan, 2007). In particular, SMEs are faced with increasing pressure to engage in sustainability. Such pressure on SMEs to adopt environmental and social friendly practices can come from suppliers (by demanding ISO 14000 certificate), employees and customers

(by observing the advantages obtained from other businesses' adoption of sustainability) (Gadenne et al., 2009).

Legislation, suppliers, trade associations and customers put pressure on SMEs to perform in the socially responsible and environmentally friendly manner (Sawyer & Evans, 2010). Apart from these sources, SMEs are required to commit to sustainable development if they want to survive in the commercial world. For example, they need to be protected against future cost increases such as tax or transport through adopting cost saving practices and better management of waste and resources. Moreover, they need to consider market opportunities for environmental goods and services. Also commitment to BS is demanded by insurers, financial institutions, shareholders and contract specifications (Friedman et al., 2000).

Environmental regulation forces SMEs to have clear environmental procedures and practices (Williamson et al., 2006) requiring certificates such as ISO 14000 so that financial benefits can be gained from the environmental friendly activities (Gadenne et al., 2009). One of the benefits for SMEs from environmental certification is waste reduction leading to cost saving. This certification improves the public relations of the SMEs and provides some intangible advantages such as enhanced employee morale and better relationship with legislation bodies (Gadenne et al., 2009, p.47). In addition, environmental regulation is effective in encouraging SMEs to embrace sustainability and engage in environmental friendly practices (Bansal & Roth, 2000; Williamson et al., 2006; Masurel, 2007; Gadenne et al., 2009). As Drake et al. (2004) believe, legislation not only influences sustainability adoption but also is a tool which contributes to the better understanding of environmental problems. Thus, Drake et al. (2004) show that SMEs wait for the regulation before engaging in sustainability. Similarly, Gadenne et al. (2009) find that environmental regulations encourage SMEs to adopt sustainable practices while their knowledge about the benefits of sustainability adoption in their businesses is limited.

Kerr (2006) argues that compliance with regulations and pressure from the suppliers are main players in motivating SMEs to operate sustainability. According to Tilley (1999), for SME owner/managers, regulation is a valuable tool in which it clearly explains what is required for sustainability adoption. Also they see regulation as a fair tool because there are indirect forfeits (such as not getting financial benefits) for those owner/managers who disrespect the environment. However, Lawrence et al. (2006, p. 252) find that there is little pressure from the government for SMEs to adopt sustainable practices due to their invisibility. Although

SMEs usually do not have formal environmental management systems, they adopt environmental-friendly practices because they are influenced by their suppliers (Gadenne et al., 2009) who are more 'visible' to SMEs.

Extending further the external factor analysis, Gadenne et al. (2009) find that the adoption of environmental practices is influenced by three external factors: (i) legislation and regulation (through raising awareness and impacting environmental systems and conservation processes), (ii) suppliers (through raising cost-benefit awareness and impacting on conservation processes), and (iii) environmental bodies or groups (through their concerns, especially within local communities, putting pressure on owner/manager). This study suggests that owner/managers' attitudes towards legal compliance, supplier pressure and environmental groups concerns, may affect the adoption of environmental friendly activities.

Customers is the other key group affecting the adoption of sustainability in SMEs according to the Gadenne et al. (2009) study. Evans and Sawyer (2010) find that customer satisfaction is increased by giving responsibility to SME employees and addressing the feedback from them. A study of Lawrence et al. (2006) finds that SMEs tend to be close to their communities and actively engage in employee and community support activities. However, in a study of 210 Western Australian SMEs by Gerrans and Hutchinson (2000), the majority of SMEs believe that sustainability adoption is not important for customers. They also conclude that adopting the environmental and social friendly activities is believed by the SMEs to be neither a source of competitive advantage, nor a selling factor affecting the suppliers.

McKeiver and Gadenne (2005) find that only 19% of Australian SMEs believe that they earn financial benefits from the investment for sustainability. This can be due to limited demand for sustainable goods from consumers and the lack of customer pressure, which is considered as one of the significant reasons of non-adoption of sustainability by SMEs (Hillary, 2004). The awareness of sustainability in the community is developed by education, leading to increase in the demand for environmental products and services. In other words, it is desirable that environmental education strategies and programs extend to cover local business communities and SMEs (Potts, 2010) and the government should motivate consumers to purchase environmental friendly products and services (Drake et al., 2004). In general, public, private and community environmental education play an important role in generating support and ideas which lead to the creation of sustainable business.

2.9 Theoretical Foundation

A number of sustainability researchers (Roberts, 1992; Polonsky, 1995; Branco & Rodrigues, 2007; Gadenne et al., 2009; Evans & Sawyer, 2010) have grounded their research on Stakeholder Theory (ST). ST is based on the groups who are driving forces in the firm's performance. In other words, this theory assesses broadly the stakeholders to whom the firm is supposed to be responsible (Polonsky 1995). Using this theory and other literature in SME sustainability, the most influential stakeholders behind firms' sustainability adoption are identified.

ST was first introduced by the Stanford Research Institute (Freeman, 1984). Based on ST, a firm is required to "consider its relationship with specific stakeholder groups as it sets the firm's direction and formulates its strategies" (Roberts, 1992, p. 597). This theory has been used by researchers for different aspects of sustainability. For example, Gadenne et al. (2009) used ST to find the external influences of different stakeholders on the environmental awareness of SMEs. In a study about the environmental management systems in SMEs, Biondi et al. (2000) specified the external stakeholders as consumers, customers, local communities and public authorities. Also, Deegan (2007) identified suppliers, financial institutions, and other interest groups as the relevant stakeholders.

Apart from the external stakeholders, internal stakeholders influence the firm's performance as well. In SME context, the two internal groups of employees (Petts et al., 1998; Bubna-Litic & De Leeuw, 1999; Azapagic, 2003; Evans & Sawyer, 2010) and management (Gerrans & Hutchinson, 2000; Rutherfoord et al., 2000, Revell & Rutherfoord, 2003; Kusyk & Lozano, 2007; Henriques & Catarino, 2015) have been identified as the effective internal stakeholders. According to Polonsky (1995), there are many internal and external stakeholders to whom the firm is accountable and each of them has a different set of expectations from the firm's performance. For example, owners/managers may consider the sustainability adoption as a costly action which contradicts their expectation of profit maximisation, while employees expect safe and healthy working conditions.

In the current study, drawing from ST, the internal and external stakeholders are explained in relation to sustainability adoption by SMEs. In the next chapter, the research conceptual framework is established which is derived from the review of literature and guides the research through its empirical investigation and analysis. The two main aims of this research are the social and environmental practices adopted by regional SMEs, and the factors

affecting such adoption as specified in Chapter One; both of which are encompassed in the research conceptual framework.

2.10 Summary

The literature review in this chapter provided a scholarly background to the BS and literature development in relation to the adoption of sustainability by SMEs and factors affecting such a challenge. Research that concentrates largely on the perspective of CS is widely available, but limited attention has been paid to BS in SMEs, especially in regional areas. The insights and knowledge gained from the literature review identify a research gap in the study of SMEs' orientation towards sustainable development in regional Australia. This research addresses this gap and it is anticipated that it will contribute to informed professional debates and discussions in the field.

The aim of this research is to investigate the sustainable practices adopted by regional SMEs. This thesis also examines factors affecting the sustainability adoption by SMEs in a regional context. Based on the literature review presented in this chapter, the research conceptual framework will be presented in the next chapter. This framework highlights internal and external groups of factors which have been identified as effective in the sustainability adoption by SMEs in previous research. This framework guides the research through its empirical investigation and analysis. Also two groups of practices, social and environmental are encompassed in this research conceptual framework. More details of the research conceptual framework and methodology will be presented in the next chapter.

Chapter 3: Data Collection

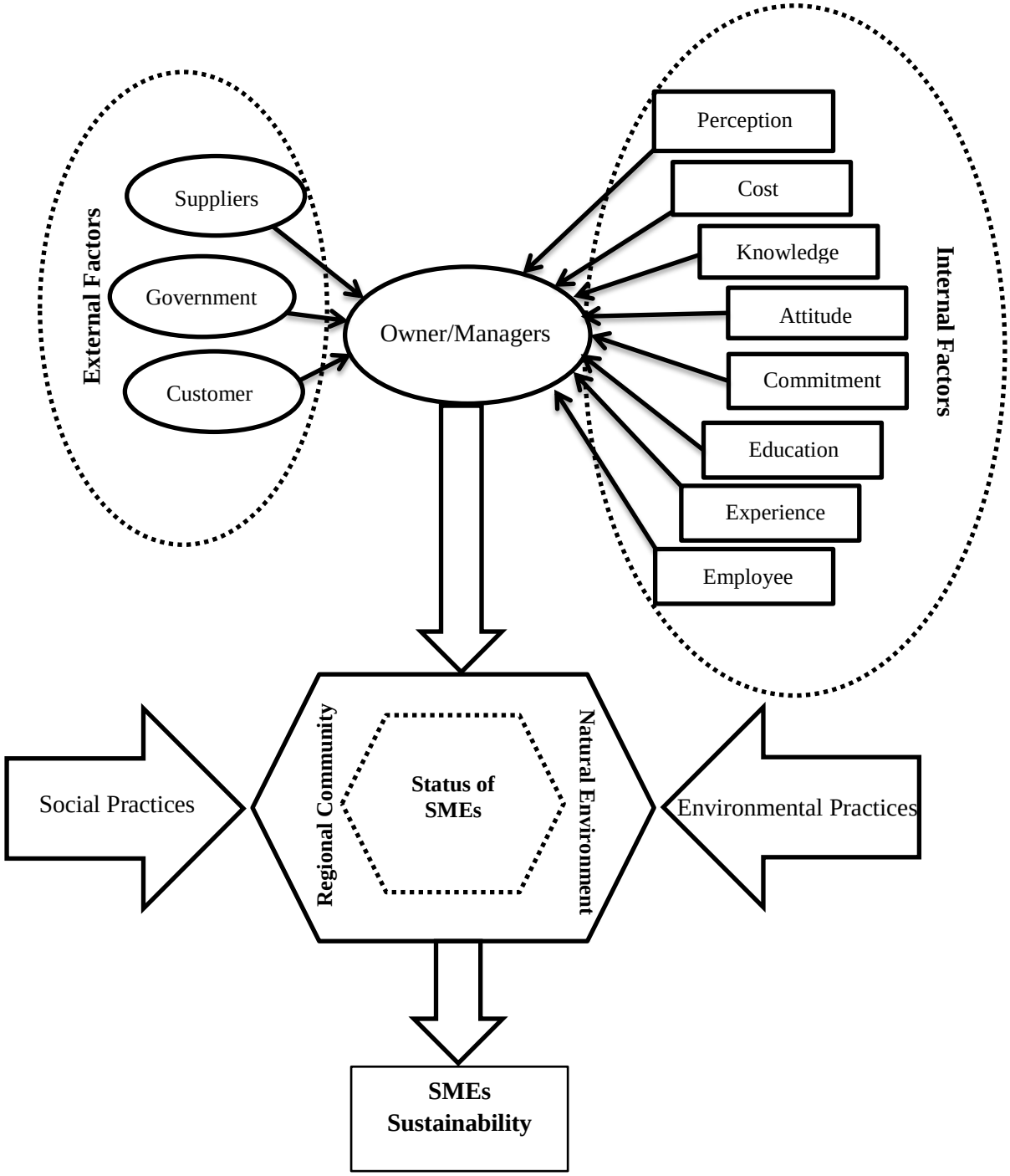
3.1 Introduction

This research is designed to obtain an understanding of what practices are adopted by SMEs in Regional Australia in order to respond to sustainability challenges. Also, this study aims to investigate the factors affecting sustainability adoption by SMEs in Regional Australia. In considering these issues, this research focuses on the firm and the role of its owner/manager in regard to how SMEs engage with sustainable development and what factors affect their engagement with this issue. The literature review in the previous chapter shows that scant attention has been paid to these areas and identifies a gap in relation to the research on sustainability adoption by regional SMEs. This chapter outlines the process of data collection applied in this study. It details the research framework, the research philosophy that determines the quantitative methodology, population frame, survey instrument, and data collection procedure.

3.2 Conceptual Framework

In this study, built from the relevant literature, a research framework was developed and presented to guide the empirical study. In this conceptual framework, the unit of analysis is SME. It also illustrates the relationships between theoretical constructs and variables under analysis in this study. It takes into consideration the three key groups who influence owner/managers of SMEs to adopt sustainable practices. These three groups were suppliers, government and customers who affect owner/managers of SMEs from outside of the business. Also, there were some internal factors identified that influence adoption (or non-adoption) of sustainable practices by owner/managers of regional SMEs. Figure 3.1 depicts this conceptual framework and how different groups and factors affect the sustainability adoption within regional SMEs.

Figure 3.1 Conceptual Framework



Source: Author

As can be seen in Figure 3.1, suppliers, government and customers are three external factors (groups) which are effective in the transformation of SMEs towards sustainable development. Suppliers can set sustainability principles as important priorities for their own activities and in their relations to SMEs they deal with. They then would encourage SME owner/managers to adopt sustainable practices (Rutherfoord et al., 2000).

Governments play a significant role in the adoption of sustainability by SMEs via setting (or not) the regulations and standards to preserve the environment and society. Government regulation is one of the significant external factors affecting sustainability in regional SMEs. As such, regulation controls environmental behaviour, but also encourages owner/managers to look at ecologically-based innovations in the future (or "eco-innovations") as outlined in Courvisanos (2012). Moreover, government can promote public awareness about sustainability through education and support (financial and infrastructure).

Customers in regional areas can also affect the sustainability of SMEs through encouraging environmental friendly practices by purchasing and demanding sustainable products and services. In this regard, customers can pressure owner/managers of SMEs to observe sustainability issues in their performances leading to increase the market value of the sustainable SMEs products and services. Hence, customers are identified as a key driver for the adoption of sustainability in SMEs (Ionescu-Somers, 2004). They affect the SMEs sustainability adoption by either positively buying their products and services or negatively by rejecting them (Porter & Kramer, 2006). In this study, the influences of external groups of supplier, government and customers were measured through an aggregate response to Likert scale questions relating to the impact and importance of external groups' environmental and social concerns on the SMEs.

Internal factors that drive (or are barriers) to the adoption of sustainable practices are also set out in Figure 3.1. Employees of SMEs is an internal group which can be effective in the adoption of sustainability in SMEs. According to Henriques and Catarino (2015), for successful implementation of BS, management support of employees is the first priority. If owner/managers provide education and technical assistance about environmental and social management practices to their employees, then employees would devote more time and resources to the adoption of sustainability. Besides, there are some other internal factors which act on the ability of owner/managers themselves to adopt sustainable practices. For instance owner/managers' perception of their business's environmental impact is one of the significant internal factors affecting the sustainability adoption by SMEs (Lawrence et al., 2006).

Cost of sustainability implementation is considered as one of the significant internal factors preventing the adoption of sustainable practices in SMEs. In SME context, sustainability is seen as a business cost which is not transferrable to the customers due to the competitive

nature of the business environment (Simpson et al., 2004). It supports the findings of Revell and Rutherfoord (2003)'s study in which SME owner/managers perceive no link between improved sustainability performance and financial benefits. SME owner/managers usually ignore the business case for sustainability in favour of the more pragmatic view that environmental sustainability leads to an increase in business costs providing insufficient incentive to adopt sustainability voluntarily (Revell & Blackburn, 2007).

The owner/managers of SMEs are reported to have poor knowledge about the environment and various environmental regulations and standards (Groundwork, 1995; Tilley, 1999; Gerrans & Hutchinson, 2000; Williamson & Lynch-Wood, 2001; Simpson et al., 2004). They are not even aware of the relevant bodies which offer support and information for small businesses (Tilley, 1999). Generally, SMEs' access to the information regarding BS is limited (Lepoutre & Heene, 2006; Roberts et al., 2006) which leads to the low level of sustainability adoption within SMEs (Gadenne et al., 2009).

Owner/managers' attitude and commitment to sustainable development are two other internal factors affecting the adoption of BS in SMEs. For instance, some of the owner/managers of SMEs are ready to engage with sustainable practices regardless of regulation requirements or financial and non-financial benefits obtained from this action (Gadenne et al., 2009). Naffziger and Montagno (2003) find that the owner/managers, who have more positive attitudes towards the environment, are more ready to spend the time and resources on the environmental friendly practices. In a study of regional SMEs in South Australia, Evans and Sawyer (2010) find that many of the participated SMEs adopt social and environmental friendly activities because they believe that it is a right thing to do and gives them a sense of pride. It aligns with the study of Fassin (2008), who claims that most SMEs consider their informal responsible performance as normal, because they feel right and it is the noble thing to do.

Apart from personal values, owner/managers' personal characteristics such as education and experience are effective in the adoption of BS by SMEs (Petts et al., 1998; Schaper, 2002). For example, Besser (1999) finds a correlation between demographic variables and the adoption of sustainability, i.e. owner/managers with the higher level of education and experience show higher level of commitment to environment and community.

In this study, internal factors were measured through compiling a series of responses to different item statements adopted from Gadenne et al., 2009; Lucas et al., 2009; Revell et al., 2010; Bos-Brouwers, 2010; Belz and Schmidt-Riediger, 2010; Evans and Sawyer, 2010; Roxas and Chadee, 2012; Chow and Chen, 2012. The external and internal factors (as drivers and barriers) for the adoption of sustainable practices needed to be placed within the context of this study. This context is described in Figure 3.1 as the status of the SMEs to be examined in this study. Two sets of SME business practices make up this status. One is social practices in regards to the regional community (for example, sponsorship of a local club). The other set is environmental practices in regards to the natural environment (for example, extent of waste recycling). In this study, social and environmental practices were measured through an aggregate response to Likert scale questions on conducting social and environmental activities such as monetary and non-monetary contributions to community programs, promoting healthy work practices, recycling activities, waste reduction programs and changing business processes to reduce raw materials consumed and energy.

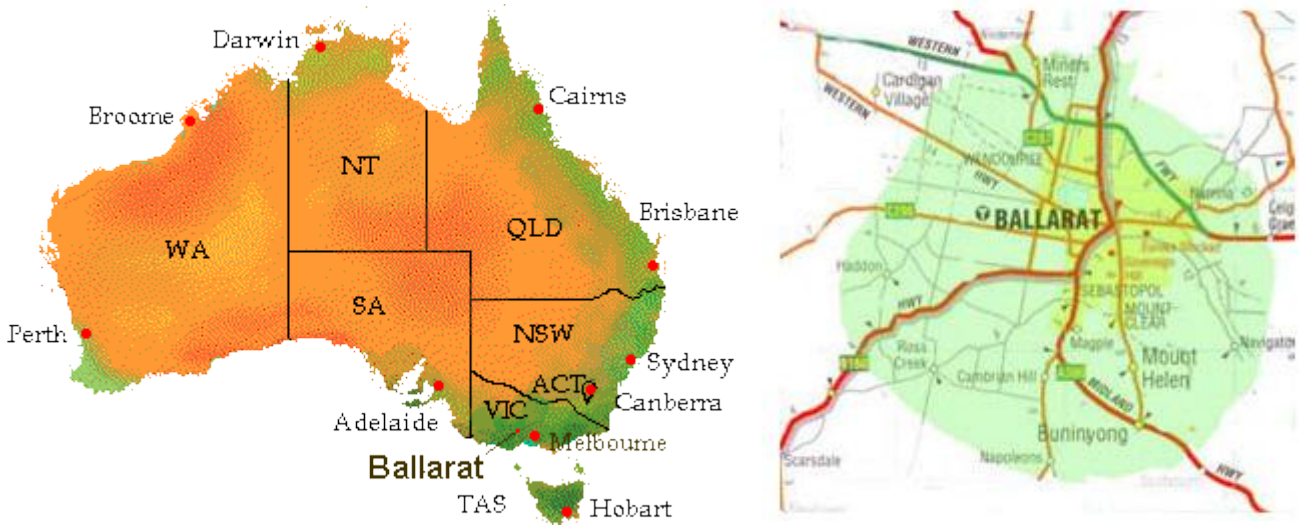
The sustainability status of the SMEs under investigation is specified by how frequently they adopt these practices. Then, the drivers and barriers of sustainability is evaluated from the external and internal factors affecting the adoption of such practices. This framework is a tool to assess sustainability of regional SMEs; a framework that to this date does not exist – unlike the many corporate frameworks available for large business sustainability investigations.

3.3 Selection of Region: Ballarat

The study area in this research was the major regional city of Ballarat which is located in Western Victoria, with an estimated population of around 98,000 (City of Ballarat, 2013). As shown in Figure 3.2, Ballarat is within the inner regional location of the State of Victoria. The inner regional classification describes minor accessibility limitations to services and includes Victorian locations such as Ballarat and Bendigo (Australian Bureau of Statistics, 2013). Whereas, the outer regional classification describes moderate limitations to services and includes Victorian locations such as Horsham, Swan Hill and Traralgon (Australian Bureau of Statistics, 2013).The focus on inner regional locality is founded on the belief that regional cities and towns act as service hubs beyond metropolitan centres (Baum et al., 2005;

Doherty et al., 2013) and thus would be a central location for regional SMEs to operate their businesses.

Figure 3.2 Ballarat's Location



Source: (City of Ballarat, 2013)

Moreover, Ballarat is the third largest city in Victoria, and it is surrounded to the north, west and south by rural areas and small townships (City of Ballarat, 2013). Ballarat has a key strategic position at the centre of Victoria's most important freight, tourist and commuter transport routes (City of Ballarat, 2013). As such, Ballarat is a good representative of a major regional city in Australia which has an economy with a large SME business population.

3.4 Research Philosophy

This section describes the research philosophy used in this study. This study adheres to positivism, which is a philosophy based on real facts that can be experienced and proved, rather than on ideas formed in the mind (Saunders et al., 2009). In the path of positivism, a research person must analyse and interpret survey data objectively and without bias as far as possible. This study makes efforts to adhere to the principle of objectivity enshrined in the philosophy of positivism. In this chapter the objectivity of the philosophy is explained through the methodology adopted.

The primary reason for choosing the positivist approach is that it supports data collection from a large number of SMEs (Czaja et al., 2014). The strength of this approach is in

exploring a terrain that has not been explained before except in very small population studies. This sets the strong framework and quantitative basis for further quantitative studies in other regions and deeper qualitative studies. Moreover, the deductive approach is used when the literature helps the researcher to identify rigorously theories and ideas which will be tested using the data (Saunders et al., 2009). According to Pedhazur and Schmelkin (1991), another important principle of positivism is that a researcher must neither affect respondents nor be affected. Since the study collected the data by a survey method, it may be asserted that researchers and respondents remained independent of each other. Hence, the above principle of positivism stated by Pedhazur and Schmelkin was observed.

3.5 Quantitative Method

Research methods are the techniques to analyse collected data using different tools such as questionnaires, observations, and interviews (Saunders et al., 2009). Selecting an appropriate research method helps the researcher to achieve the research objectives defined in the theoretical framework (Cavana et al., 2001). Having discussed the underpinning research questions in Chapter One, the cross-sectional survey method within the deductive approach was used in this research. In this context, the quantitative research method of a detailed questionnaire was implemented because this study focused on hypothesis tests, determination of causation (relationships) between variables and measures the frequency (number) of observations (Bryman & Bell, 2003; Chiang, 2003; Zikmund, 2003). Both descriptive and exploratory aspects can be seen in this study.

While qualitative techniques are used to explore new topics (Sekaran, 2003; Zikmund, 2003) and generate ideas (theory) or hypotheses, (Bryman & Bell, 2003), quantitative research is more helpful when there is a need to determine certain facts, or correlations between facts (De Vaus, 2001). Quantitative methods are particularly helpful when conducting research on a broad scale, since results obtained through a well conducted statistical testing are safer for purposes of generalisation. In short, due to the ability of quantitative research methods to measure data using statistics, it was considered an efficient method for this study because the main challenge of this study was testing pre-specified concepts, constructs and hypotheses in a regional context.

The reason for choosing questionnaire as the main data collection tool in this study was that "where the theoretical framework demonstrates a reasonable knowledge of the variables, the researcher is more likely to be interested in the relationship between variables and would use hypothesis testing methods such as survey questionnaire" (Cavana et al., 2001, p. 115). Moreover, survey strategy is a very popular research method for studying about sustainability and environmental issues in the small firm context (Carter & Easton, 2011). Using a questionnaire enables researchers to collect predominantly quantitative data in a systematic way. The data collected using a questionnaire can be used to suggest possible reasons for particular relationships between independent and dependant variables and to produce models of these relationships (Saunders et al., 2009). Furthermore, respondents prefer the questionnaire because the questions are likely to be easily understood and answerable in their own pace and time (Sekaran, 2003).

Furthermore in this study's questionnaire, except for initial demographic questions, statements are set out which require respondents to tick the most appropriate response by determining their frequency of adoption and level of agreement/disagreement using a four-point and five-point Likert Scale formats, respectively. The first reason for choosing Likert Scale is related to the fact that Likert Scale is the most commonly used scale for statements dealing with preferences and perceptions. Also, the points in this scale allowed the respondents to understand them and indicate their responses correctly. Moreover, this scale offers the distinguishable labels allowing a clear comparison (Zikmund, 2003).

In this study, unit of analysis was SME and time horizon was cross sectional as the required data for this study were gathered just once (over weeks) (Cavana et al., 2001). Moreover probability or non-probability sampling was not related to this study as the study applied census method for collecting the required data.

The respondents of the questionnaire were owner/managers of SMEs. So, all the variables in this study were measured perceptually. The perceptions of business owner/managers are considered the driving behaviour in strategic decisions (Pansiri, 2005) and they play a critical role in strategic practices like BS adoption. From the economic perspective, owner/managers are perceived as "rational utility maximisers" (Stubbart, 1989; Johnson & Hoopes, 2003). However, this economistic view ignores the differences of owner/managers' cognitive style in strategic decisions (Gallen, 1997). Wiersema and Bantel (1992) believe that each owner/manager's perception and interpretations will reflect their cognitive base in

engagement with the strategic decision making process. Hence, it is considered that the perceptual process of respondents directs their answers to the questionnaire. In this process it is acknowledged that selective perception may occur because owner/managers only pay attention to some of the motivations in their field of interest and vision (Pansiri, 2005), but it is the cognitive motivations selected by the questionnaire participants that underpin this study.

3.6 Data Collection Approach

Data for this study was collected by means of a survey questionnaire in five sections with ten demographic questions and 58 statements. It was mailed out to 1127 regional SMEs operating in Ballarat area. All questions/statements were designed to collect quantitative data. The data collection procedure is based on ethics approval given by the University of Ballarat (former name of Federation University Australia) Human Research Ethics Committee (Project No. B13-146).

It is a Commonwealth legislative requirement in Australia that all projects involving human subjects must meet certain standards and have written approval from accredited ethics committees. In this regards, the Human Research Ethics Committee (HREC) at Federation University has responsibility for ensuring that research within University gives adequate consideration to participants' welfare, rights, beliefs, perceptions, customs and cultural heritage, both individual and collective. All research and similar projects within the university are subjected to the requirements of the "National Statements on Ethical Conduct in Research Involving Humans". Hence the researcher had a responsibility to ensure that ethics approval was obtained in writing before commencing the data collection process including the pilot survey. It meant that no data could be collected from any human participants without such an approval.

During the ethics process for this study, an important principle to be adhered was providing details of grievance mechanism. It was proposed to the approval sub-committee that in case a respondent participating in the study had any concern about the participation, or a complaint, he or she could contact either the research supervisor or the researcher in the first instance. If the issues raised could not be solved, then the Federation University Ethics Officer must be contacted. An approved grievance resolution procedure was outlined in the initial pages of

the survey questionnaire. Included were all relevant contact addresses, telephone numbers, fax numbers and email addresses.

A completed application form for HREC approval (Expedited) together with copies of the cover letter and survey questionnaire were forwarded to the Human Research Ethics Committee for its approval. The committee accepted the proposed research protocol and gave written full approval to conduct the survey. It suggested no changes to the survey questionnaire.

The study area in this research was the major regional city of Ballarat. In order to address the research questions, it was necessary to collect quantitative data from SMEs in Ballarat. Since the response rate in past business studies was found to be low (Gadenne et al., 2009; Revell et al., 2010; Belz & Schmidt-Riediger, 2012), it was decided to include all the SMEs in Ballarat to ensure that as large a number of responses as possible to be collected.

Due to the lack of statistical information and contact details on regional SMEs in the Ballarat region, all the SMEs registered on the Manta website were identified and a survey questionnaire was sent out to them. Manta is the world's largest online community for promoting and connecting small businesses, with more than one million registered users and 87 million company profiles. Manta visitors can find company details such as company contact, address, number of employees, estimated annual sales and more (About Manta Website, 2014). Further details on the development of the valid population frame are provided in Section 3.8. Because all SMEs in the database with a valid and current contact address were contacted, there is no sampling bias from the database itself. In other words, the census method on the Manta website was used for data collection and sampling methods were not applied in this research. Preparation of a list of SMEs with valid contact details is presented later in this chapter.

3.7 Survey Instrument

The required data for this research was collected using a survey questionnaire. Survey packs were sent to all SMEs operating in Ballarat that are listed on the Manta website. The survey pack consisted of the following items:

i. A covering letter titled "Plain Language Information Statements" (see Appendix 1),

ii. A support letter from Committee for Ballarat (see Appendix 2),

iii. The survey questionnaire titled "Sustainable Practices of Small Businesses in Regional Australia" (see Appendix 3),

iv. A reply paid envelope on which was printed the researcher's name and office address.

Yellow coloured paper was used to print the cover letter in order to ensure that it stood out and not become mixed with other papers. Copies of the cover letter, support letter and the survey questionnaire are provided in the Appendices Section.

The survey instrument (see Appendix 3) was addressed to the owner or manager of the business. In SME context, ownership and management are usually integrated so that the main power of control is in the hands of the owner/managers who decide about the allocation of resources (Sawyer & Evans, 2009). In addition, personal attitudes and beliefs of owner/managers play a key role in accepting or rejecting a specific issue (Sweeney, 2007). Hence, owner/managers of SMEs were the first point of contact in this study as they have the strongest influence within the firm.

The cover letter (see Appendix 1) explains the purpose of the research, benefits to a participating business, university affiliation of the researcher and her supervisors, the estimated time required to fill out the questionnaire, assurances about confidentiality and issues related to ethics. The support letter (see Appendix 2) was provided by the Committee for Ballarat. The letter introduced this study as strategic research to improve the quality of life for the community in Ballarat. The support letter provided by the Committee for Ballarat made a positive impact on many owner/managers motivating them to spend ten minutes on the survey questionnaire. No material inducements were provided for respondents to participate. An assurance was given to the participating owner/managers that on completion of the examination of the thesis, the findings would be given them as a short report based on their request.

The questionnaire (see Appendix 3) used in the study for the collection of data titled "Sustainable Practices of Small Businesses in Regional Australia" consists of five sections and 68 questions/statements. The sections were designed to reflect the conceptual framework (see Figure 3.1). In order to avoid response bias, questions/statements and words used in the questionnaire were very simple and the use of jargon-language was avoided. For example, instead of using the word 'sustainability', specific social, economic and environmental practices/factors were identified. This assumes that the concept of sustainability is not well known in the small business community yet (Sweeney, 2007; Sawyer & Evans, 2009). Also the questionnaire was as short as possible because long questionnaires are rarely answerable by the respondents as they might feel tired and confused (Bryman & Bell, 2003).

For developing the questionnaire, five owner/managers of SMEs in Ballarat reviewed the items and statements in the questionnaire. Also, six MBA students of Federation University Australia who are SME operators in Ballarat were asked to read the questionnaire and give their feedbacks. Moreover, Mr. John Kilgour, CEO of Committee for Ballarat was requested to review the survey questionnaire. After receiving all mentioned reviewers' comments, the questionnaire was revised based on their feedbacks.

The questionnaire was designed in five sections. The first section consists of questions related to the selected situational characteristics of the respondents. Particularly, this related to business category, gender, age of owner/manager, age of business, number of employees, position, level of experience, educational qualification. The list of business category was obtained from the 'Australian and New Zealand Standard Industrial Classification' published by the Australian Bureau of Statistics (Mardaneh, 2012b).

In sections two and three, there are 24 statements on social and environmental practices adopted by SMEs. They were constructed from insights gleaned from the extant literature in social and environmental practices of sustainable businesses; in particular, sustainability practices of small businesses (Lawrence et al., 2006; Yu & Bell, 2007; Lucas et al., 2009; Collins et al., 2010; Revell et al., 2010; Schoenherr, 2011). See Table 3.1 for details. This table shows all the statements included in the sections two and three of the questionnaire. It also highlights the reason for selecting such statements and the references where the statement was taken.

Table 3.1 References for the Statements of Social and Environmental Practices

Statement	Reason	Reference
Sponsored of clubs or community programs.	Sponsoring a club or community programs helps SMEs to get better publicity and create good images (Revell et al., 2010).	Yu & Bell (2007); Lucas et al. (2009); Collins et al. (2010); Revell et al. (2010).
Been active in community issues.	It is a common practice for SMEs to create better relationships with the community (O'Laire & Welford, 1996). Also, according to Pirsch et al., (2007), businesses should support the community activities and programs.	Lawrence et al. (2006); Yu & Bell (2007); Collins et al. (2010); Revell et al. (2010).
Been active in business associations.	SMEs could easily share their achievements with their stakeholders through such associations (Ammenberg et al., 2000).	Lawrence et al. (2006); Revell et al. (2010).
Shared information with stakeholders.	Sharing information with stakeholders is one of the social activities by which SMEs are able to enhance the sustainability (Zwetsloot & Van Marrewijk, 2004; Alcaniz et al., 2010).	Lucas et al. (2009).
Included stakeholder concerns in business decisions.	Engaging the stakeholders concerns in the business decisions is one of the preconditions for a sustainable business (Azapagic, 2003).	Lucas et al. (2009).
Created awareness of social concerns within the business.	According to Linnenluecke and Griffiths (2010), sustainable businesses integrate the social concerns into the business culture and operation.	Lucas et al. (2009); Collins et al. (2010).
Donated to community fund raising activities.	Donation of goods and services to local charities is a common social practice for SMEs (Evans & Sawyer, 2010).	Lawrence et al. (2006); Yu & Bell (2007); Lucas et al. (2009); Collins et al. (2010); Revell et al. (2010).
Participated in regional committees of stakeholders.	Such regional committees help SMEs to be connected to the social context they operate (Sawyer & Evans, 2010).	Lucas et al. (2009); Revell et al. (2010)

Statement	Reason	Reference
Held an 'Open day' for public to visit.	It is common for such open days in mining rural communities; see for example, Petkova et al. (2009).	Yu & Bell (2007); Revell et al. (2010).
Provided free technical assistance to local community or projects.	One of the social sustainability practices that a business could adopt is engagement with local community projects through providing assistance and support (Pirsch et al., 2007).	Lawrence et al. (2006); Yu & Bell (2007); Lucas et al. (2009); Collins et al. (2010); Revell et al. (2010).
Engage in business operations that are socially responsible.	Sustainable businesses engage in such practices to improve their social impacts in the community (Revell et al., 2010).	Revell et al. (2010)
Allowed staff paid time off to participate in charitable activities.	Such practice helps SMEs to be involved in the community problems and contribute to solve such problems (Frederick, 2006).	Lawrence et al. (2006); Yu & Bell (2007); Collins et al. (2010).
Allowed staff time off to attend TAFE or University courses.	One of the dimensions of social sustainability is to provide education opportunity to employees (Azapagic & Perdan, 2000).	Lawrence et al. (2006); Yu & Bell (2007); Lucas et al. (2009); Revell et al. (2010).
Allowed staff to work flexible hours to fit their family circumstances.	Such practice could lead to the enhancement of human capital in businesses which is one of the features of socially sustainable businesses (Dyllick & Hockerts, 2002).	Lawrence et al. (2006); Lucas et al. (2009); Revell et al. (2010); Collins et al. (2010).
Demonstrated willingness to provide congenial workplace conditions.	Improving the workplace conditions is one of the activities which businesses could do to improve their engagement with sustainability (Baumgartner & Ebner, 2010).	Yu & Bell (2007); Lucas et al. (2009); Revell et al. (2010).
Demonstrated willingness to address staff remuneration issues.	Based on Evans and Sawyer (2010), addressing employees needs and providing fair salaries and monetary remuneration have a positive effect on the employees' satisfaction which leads to the sustainable business.	Yu & Bell (2007); Lucas et al. (2009).

Statement	Reason	Reference
Implemented socially inclusive employment policies.	Implementing socially inclusive employment policies such as providing equal opportunity for community like non-discrimination is one of the activities adopted by sustainable businesses (Azapagic & Perdan, 2000).	Lawrence et al. (2006); Yu & Bell (2007); Collins et al. (2010); Revell et al. (2010).
Recycling.	Sustainable businesses respect the environment through adopting some environmentally friendly practices such as recycling (Keijzers, 2002; Azapagic, 2003; Gadenne et al., 2009; Evans & Sawyer, 2010; Potts, 2010).	Lawrence et al. (2006); Yu & Bell (2007); Lucas et al. (2009); Collins et al. (2010); Revell et al. (2010); Schoenherr (2011).
Waste reduction.	Reducing wastes is one of the environmentally friendly practices adopted by sustainable businesses (Keijzers, 2002; Simpson et al., 2004; Savitz & Weber, 2006; Gadenne et al., 2009; Evans & Sawyer, 2010).	Lawrence et al. (2006); Yu & Bell (2007); Lucas et al. (2009); Collins et al. (2010); Revell et al. (2010); Schoenherr (2011).
Energy efficiency.	Such practice is commonly used by some businesses to address sustainable development (Evans & Sawyer, 2010; Potts, 2010; Coric et al., 2011).	Lawrence et al. (2006); Yu & Bell (2007); Lucas et al. (2009); Collins et al. (2010); Revell et al. (2010).
Use environmentally friendly products.	For being environmentally sustainable, a business should invest in using green products (Zsidisin & Siferd, 2001).	Yu & Bell (2007); Lucas et al. (2009); Revell et al. (2010).
Work to reduce carbon emissions.	Such practice could contribute SMEs to engage with sustainability as the relative share of SMEs' emissions has been increased compared to large ones during the past 30 years (Organisation for Economic Co-operation Development, 2009).	Lawrence et al. (2006); Yu & Bell (2007); Revell et al. (2010).
Improve the impact of your business on the local surroundings.	According to Evans and Sawyer (2010), environmentally friendly SMEs keep the neighbourhood around their premises clean.	Lawrence et al. (2006); Lucas et al. (2009); Collins et al. (2010); Revell et al. (2010).

Statement	Reason	Reference
Environmental management policies.	Gadenne et al. (2009) believe that environmental management policies such as ISO 14000 help businesses to have clear environmental procedures leading to more engagement with sustainability.	Yu & Bell (2007); Lucas et al. (2009); Revell et al. (2010).

Source: Author

A header was the hub of the sections two and three that read as follows: 'Please identify how frequently you or your business has engaged in these social/environmental practices' below this header, the items were presented as statements. Four-point Likert scale was used so that a respondent could choose one of the four points for each item. The scale points were labelled in order to assist a respondent to perceive how frequently an item was adopted by the business owner/manager (Nayak, 2007). The labels were as follows: Often, Sometimes, Seldom, and Never. The scale is an interval scale because differences between any two adjacent points are considered to be equal (Sekaran, 2003).

Reasons for considering this scale format are as follows. First, it allows the presentation of the statements pertaining to all the items as a concise list (Nayak, 2007). Second, it is easy to go through the statements. Third, this format makes data coding into a spreadsheet with statistical software, easy and straightforward (Sekaran, 2003).

The survey in this study also contains two scales (Internal Factors and External Factors) that are available in the literature. The internal factors scale (section four) has 23 statements which set out factors affecting SMEs' sustainability adoption. These factors originate from inside the business. Similarly, external factors scale (section five) was measured by 11 statements. These statements set out the outside influences on SMEs to the adoption of sustainability. The specific statements in each of the sections of the questionnaire have been extracted from questionnaires used in the following related studies: Lawrence et al. (2006); Yu & Bell (2007); Gadenne et al. (2009); Lucas et al. (2009); Belz & Schmidt-Riediger (2010); Bos-Brouwers (2010); Evans & Sawyer (2010); Collins et al. (2010); Revell et al. (2010); Chow & Chen (2012); Roxas & Chadee (2012). See Table 3.2 for details. This table shows all the statements included in the sections four and five of the questionnaire. It also highlights the reason for selecting such statements and the references where the statement was taken.

Table 3.2 References for the Statements of Internal and External Factors

Statement	Reason	Reference
My firm has low impact on the local community and environment.	SMEs' perception of little individual impact on the local community and environment is one of the primary barriers to SME sustainability (Hillary, 1995; Ammenberg & Hjelm, 2003; Simpson et al., 2004; Lawrence et al., 2006; Revell et al., 2010; Bos-Brouwers, 2010).	Yu & Bell (2007); Lucas et al. (2009); Gadenne et al. (2009); Bos-Brouwers (2010); Revell et al. (2010).
Business owners cannot be expected to help solve social issues.	According to Gadenne et al. (2009), there is a positive correlation between owner/managers responsibility towards the community and environment and their effort to adopt sustainability.	Yu & Bell (2007).
Environmental issues aren't relevant to my business.	Management attitudes play a prominent role in the level of adoption of sustainability by SMEs (Sawyer & Evans, 2009).	Yu & Bell (2007).
I'm not in the right industry to make a difference to local community.	One of the factors affecting the adoption of sustainability is that owner/managers of SMEs feel little responsibility towards the environment and society (Yu & Bell, 2007).	Yu & Bell (2007); Evans & Sawyer (2010).
Being environmentally and socially friendly increases my business costs.	SME operators usually reject implementation of sustainability principles, as it increases business costs (Luken & Stares, 2005; Revell & Blackburn, 2007; Bos-Brouwers, 2010).	Lawrence et al. (2006); Gadenne et al. (2009); Evans & Sawyer (2010); Collins et al. (2010); Bos-Brouwers (2010).
My business has poor infrastructure to support some activities like recycling.	One of the main reasons for non-adoption of sustainable practices in SMEs is related to the lack of resources (Tilley, 1999; Biondi et al., 2000; Gerrans & Hutchinson, 2000; Simpson et al., 2004; Lepoutre & Heene, 2006; Roberts et al., 2006; Jamali et al., 2009; Sawyer & Evans, 2009).	Evans & Sawyer (2010); Roxas & Chadee (2012).
My business will not benefit financially from environment-friendly activities.	Owner/managers of SMEs have a negative attitude towards the financial returns from	Gadenne et al. (2009); Evans & Sawyer (2010); Bos-Brouwers (2010).

Statement	Reason	Reference
	sustainability investment (Petts et al., 1998; Revell & Rutherfoord, 2003; Bos-Brouwers, 2010; Revell et al., 2010).	
I realise that most of the electricity in Victoria is produced by burning highly polluting brown coal.	Management's knowledge about sustainability issues is reported as an important motivator to the adoption of sustainability in the study of Collins et al. (2010).	Lawrence et al. (2006); Collins et al. (2010); Roxas & Chadee (2012).
I am aware of environmental protection programs organised by the government or external organisations.	According to Roxas and Chadee (2012), awareness of environmental sustainability issues is effective in the sustainability adoption by SMEs.	Lawrence et al. (2006); Collins et al. (2010); Roxas & Chadee (2012).
Socially and environmentally responsible businesses have the potential to break into new markets or promote existing markets.	According to Lo and Sheu (2007), higher level of commitment to sustainability is strongly associated with higher market value.	Lawrence et al. (2006); Belz & Schmidt-Riediger (2010); Collins et al. (2010).
Socially and environmentally responsible businesses achieve cost savings from energy or other resource efficiencies.	Azapagic (2003) shows that if businesses adopt sustainability in their management system, they can take advantages such as reducing costs, managing risks, creating new products and driving structural internal changes in the business culture.	Lawrence et al. (2006); Yu & Bell (2007); Gadenne et al. (2009); Evans & Sawyer (2010); Collins et al. (2010).
Environmental issues should be a very high management priority.	One of the important motivators to adopt sustainable practices within SMEs is the personal responsibility and commitment of the owner/managers toward the community and environment (Hillary, 1995; Naffziger & Montagno, 2003; Roberts et al., 2006; Lawrence et al., 2006; Gadenne, et al., 2009).	Yu & Bell (2007).
It is the responsibility of every business owner/manager to have policies that help improve society.	According to Revell et al. (2010), there is a positive relationship between the owner/managers' responsibility towards the environment and community and the effort they put to the sustainability	Yu & Bell (2007).

Statement	Reason	Reference
	adoption.	
Contributing to protecting environment and supporting the local community gives me personal pride and enjoyment.	Regardless of regulation pressure or financial benefits from sustainability adoption, personal belief and commitment of the owner/managers towards the local community and environment is effective in the adoption of sustainability (Hillary, 1995; Naffziger & Montagno, 2003; Roberts et al., 2006; Lawrence et al., 2006; Gadenne, et al., 2009).	Evans & Sawyer (2010); Roxas & Chadee (2012).
Preserving the environment and respecting local community is simply the right thing to do.	Management attitudes play a prominent role in the level of adoption of sustainability by SMEs (Yu & Bell, 2007; Revell et al., 2010).	Evans & Sawyer (2010); Roxas & Chadee (2012).
Business should regulate itself to improve environmental practices.	There is a positive correlation between owner/managers' individual concerns and their expending time and resources on sustainability (Naffziger & Montagno, 2003; Roberts et al., 2006).	Yu & Bell (2007).
Transition to a low-carbon economy will bring opportunities for business growth.	Management knowledge about the sustainability would affect SMEs' adoption of sustainable practices (Azapagic, 2003; Collins et al., 2010).	Lawrence et al. (2006); Collins et al. (2010).
Small firms should ensure the health and safety of its employees.	Responsibility and commitment of the owner/managers towards the employees is effective in the adoption of sustainability (Naffziger & Montagno, 2003; Roberts et al., 2006; Lawrence et al., 2006; Gadenne, et al., 2009).	Yu & Bell (2007); Belz & Schmidt-Riediger (2010); Chow & Chen (2012).
Small firms should ensure the health and safety of its community.	Responsibility and commitment of the owner/managers towards the local community is effective in the adoption of sustainability (Hillary, 1995; Naffziger & Montagno, 2003; Roberts et al., 2006; Lawrence et al., 2006; Gadenne, et al., 2009).	Yu & Bell (2007); Belz & Schmidt-Riediger (2010); Chow & Chen (2012).
Business must spend some	Revell et al. (2010) believe that	Belz & Schmidt-Riediger

Statement	Reason	Reference
money and efforts for environmental protection and management.	commitment of SME owner/managers towards the environment is effective in the adoption of sustainable practices.	(2010)
Socially and environmentally responsible businesses are able to attract and retain staff.	Sustainable SMEs are able to attract and retain employees because they adopt the services and activities which are not detrimental to employees and community health (O'Laire & Welford, 1996; Revell et al., 2010).	Lawrence et al. (2006); Yu & Bell (2007); Collins et al. (2010); Evans & Sawyer (2010).
Staff and employees should put pressure on businesses to be socially and environmentally friendly.	According to Gadenne et al. (2009), employees could put pressure on SMEs to adopt sustainable practices.	Lawrence et al. (2006); Yu & Bell (2007); Collins et al. (2010).
I don't have enough time to introduce socially/environmentally-friendly activities to my employees.	Kerr (2006) believes that the key factor for the SMEs engagement with sustainability is that owner/managers provide a business culture to achieve environmental and social improvement.	Lawrence et al. (2006); Gadenne et al. (2009); Collins et al. (2010); Evans & Sawyer (2010).
Socially and environmentally responsible businesses can minimise the risk of damage to their own reputation by dealing with socially responsible suppliers.	According to Gadenne et al. (2009), suppliers could put a pressure on SMEs to adopt environmental and social friendly practices (by demanding ISO 14000 certificate).	Lawrence et al. (2006); Yu & Bell (2007); Gadenne et al. (2009); Belz & Schmidt-Riediger (2010); Evans & Sawyer (2010); Collins et al. (2010); Roxas & Chadee (2012).
Suppliers and trade bodies should put pressure on businesses to be socially and environmentally friendly.	Suppliers play a key role in putting a pressure on SMEs to perform in the socially responsible and environmentally friendly manner (Sawyer & Evans, 2010).	Lawrence et al. (2006); Yu & Bell (2007); Gadenne et al. (2009); Belz & Schmidt-Riediger (2010); Collins et al. (2010); Roxas & Chadee (2012).
Government should offer some form of recognition of businesses that have good environmental management practices.	Sometimes government and business-support bodies fail to help SMEs to promote their adoption of sustainable practices (Hillary, 2000).	Lawrence et al. (2006); Yu & Bell (2007); Belz & Schmidt-Riediger (2010); Collins et al. (2010).

Statement	Reason	Reference
It is not the individual responsibility of business owner/managers to solve environmental problems.	The owner/managers responsibility towards the environment affects his/her effort to adopt sustainability (Gadenne et al., 2009).	Lawrence et al. (2006); Yu & Bell (2007); Belz & Schmidt-Riediger (2010); Collins et al. (2010).
National and local environmental laws and regulations should be strictly enforced in the business context.	Governments play a significant role in the adoption of sustainability by SMEs via setting the regulations and standards to preserve the environment and society (Drake et al., 2004).	Lawrence et al. (2006); Yu & Bell (2007); Gadenne et al. (2009); Belz & Schmidt-Riediger (2010); Collins et al. (2010).
Small businesses should leave the government to tackle environmental issues.	SMEs cannot be left to voluntarily change their impacts on the environment, and government intervention is required, whether through regulation or incentive and education (Revell & Blackburn, 2007).	Lawrence et al. (2006); Yu & Bell (2007); Gadenne et al. (2009); Belz & Schmidt-Riediger (2010); Collins et al. (2010).
It's better that government enforces environmental taxes for businesses.	Legislation is one of the effective factors on the sustainability adoption by SMEs (Sawyer & Evans, 2010).	Lawrence et al. (2006); Yu & Bell (2007); Gadenne et al. (2009); Belz & Schmidt-Riediger (2010); Collins et al. (2010).
Businesses with sound environmental management practices are well supported by customers.	SMEs develop close relationships with their customers, so they can depict the value of sustainable services and products to their customers (Kerr, 2006; Aragon-Correa et al., 2008).	Lawrence et al. (2006); Yu & Bell (2007); Gadenne et al. (2009); Belz & Schmidt-Riediger (2010); Collins et al. (2010).
Pressure from existing customers could force businesses to preserve the natural environment.	Customers (through purchasing) have the position to influence the owner/managers of SMEs to adopt social and environmental friendly practices (Smith & Oakley, 1994; Biondi et al., 2000; Yusof & Aspinwall, 2000; Gerstenfeld & Roberts, 2000; Lepoutre & Heene, 2006; Deegan, 2007).	Lawrence et al. (2006); Yu & Bell (2007); Gadenne et al. (2009); Collins et al. (2010); Belz & Schmidt-Riediger (2010).

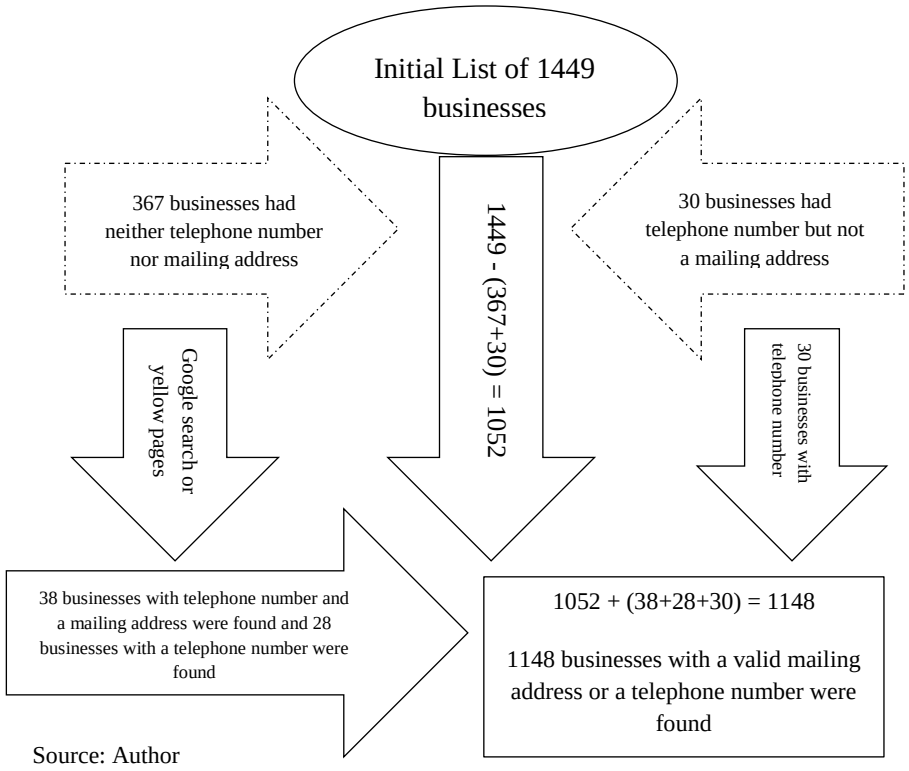
Statement	Reason	Reference
There is an increased public demand for ethical products and services.	Customers demand sustainable products and services and business owner/managers feel pressure from them to adopt sustainable practices (Gabzdylova et al., 2009).	Lawrence et al. (2006); Yu & Bell (2007); Gadenne et al. (2009); Belz & Schmidt-Riediger (2010); Evans & Sawyer (2010); Collins et al. (2010).
Being socially and environmentally responsible attracts new customers.	Collins et al. (2010) argue that sustainable businesses are supported by customers.	Lawrence et al. (2006); Yu & Bell (2007); Belz & Schmidt-Riediger (2010); Collins et al. (2010); Roxas & Chadee (2012).

Source: Author

3.8 Population Frame

The population frame for this study is a list of small and medium-sized businesses in regional city of Ballarat. This list was prepared from the Manta Website. At first investigation, there were 1449 businesses listed in this website which are located in Ballarat (List of Small Businesses in Ballarat, 2013). An initial list of all 1449 businesses was created using Excel. After checking this list, it was noticed that 397 businesses in this list did not have complete contact details (i.e. 367 businesses had strange addresses without a valid telephone number and 30 businesses had a telephone number but not a valid mailing address). For finding a valid contact detail for 367 businesses a Google search was applied. Contact details of 66 businesses were found (a valid telephone number was found for 28 businesses and valid telephone number and mailing address were found for 38 businesses) using yellow pages website. Figure 3.3 shows the steps taken to create a list of businesses with valid contact details. As shown in this figure, the final valid list of Ballarat's businesses was composed of 1148 businesses so that 1090 businesses had a valid telephone number and mailing address and a further 58 had just a telephone number.

Figure 3.3 Flowchart of Creating Population Frame



Source: Author

A telephone call was made to each of 58 businesses, which did not have mailing addresses, and they were asked whether they would be willing to participate in the survey. Table 3.3 highlights the results of all 58 telephone calls. As shown in this table, nine calls were unsuccessful due to wrong telephone numbers, four businesses expressed their unwillingness to participate and refused to give their contact details and eight businesses mentioned that they do not have a business in Ballarat anymore. The remaining 37 were willing to participate, 28 businesses gave their email addresses, seven businesses gave their mailing addresses and two businesses agreed to participate in the study on phone at the time.

Table 3.3 Results of 58 Telephone Calls

Unwillingness			**Willingness**		
Unsuccessful	Not Interested	Not in Business anymore	Email	Mailing Address	Participated on phone
9	4	8	28	7	2
Total Unwillingness: 9+4+8=21			Total Willingness: 28+7+2=37		
Total calls: 21+37=58					

Source: Author

Finally, a valid list of (1090+37=) 1127 businesses was created as the population frame for this study.

3.9 Data Collection Procedure

The purpose of the pre-test in this study was to determine the baseline knowledge and to gain better understanding of the survey questionnaire used in this thesis. In particular, the pre-test was done to evaluate the time needed to answer the questionnaire, pattern and layout of sections of the questionnaire and simplicity of the language used in the questionnaire.

Three academic staff from Research Services and two PhD graduates in Federation University were asked to read and answer the questionnaire. Pre-test respondents checked the design, structure and clarity of the survey questionnaire to ensure that there were no ambiguous, unclear and misleading questions/statements. A few minor changes were made to the survey questionnaire after the feedback from the pre-test. Based on the pre-test respondents' comments, the survey questionnaire was revised and prepared for a pilot study.

A pilot study was conducted before the main study in order to address potential deficiencies of the questionnaire's design before time and resources are expended on the large scale study (Meyers et al., 2013). The purpose of conducting a pilot survey was to test the validity and reliability of the scales in the questionnaire (Sekaran, 2003). This subsection presents the validity and reliability results for the data collected from the pilot survey conducted in this study.

Validity of the scales refers to the appropriateness, meaningfulness, and usefulness of the specific inferences made from the test score (Pedhazur & Schmelkin, 1991). In this study, besides being specific about the purpose and objective of the study, the validity of the scales was established by a pilot test that helped modify each facet of validity in accordance with the requirements of the population and the nature of the respondents (Nayak, 2007).

Telephone calls were made to 60 SME owners/managers who were randomly selected from the Manta Website and asked them about their willingness to participate in the pilot survey. 53 of them agreed to participate so 53 copies of the questionnaire were physically handed out to them. It was requested that participating SMEs complete the questionnaire and return it within a week. Apart from the request by researcher, no other inducements were provided to the participants. A copy of Plain Language Information Statement (PLIS) (see Appendix 1) was attached to the survey questionnaire. Within a week, 48 completed questionnaires were collected. Sekaran (2003) suggests that a sample size of 30 is sufficient to conduct reliability test. Therefore, no further attempts were made to increase the response. Since 48 completed

questionnaires were collected out of total 53 respondents, it indicated a response rate of 90.57%.

The population frame of the pilot study consisted of 11 females (22.9%) and 30 males (62.5%) within the age groups of 18-29 years (4.2%); 30-49 years (41.7%); 50-64 years (39.6%); and more than 64 years (14.6%). The pilot study respondents' positions were owner (10.4%); manager (22.9%); and owner and manager (66.7%). The pilot study respondents hold PhDs (2.1%), Masters (20.8%), Bachelors (18.8%), TAFE (31.3%) and High School (27.1%) qualifications.

According to Pedhazur and Schmelkin (1991) the internal consistency approach to the estimation of reliability, particularly in terms of Cronbach's α (alpha) is useful when dealing with measures of phenomena that are derived from a theoretical frame of reference and are of interest on substantive grounds (e.g. traits, characteristics, attributes). In the case of this study, Cronbach's α (alpha) for reliability of internal consistency (Pedhazur & Schmelkin, 1991; Tabachnick & Fidell, 2007) was obtained for four sections in the survey questionnaire, i.e. Social Practices, Environmental Practices, Inside your Firm and Outside Influences on your Firm with the help of the statistical software namely 'SPSS Version 20 for Windows'.

The results of the reliability tests performed on the data were as follows: The Cronbach's α for social practices was found to be 0.883 and for environmental practices was 0.835. Moreover the Cronbach's α for internal and external factors were 0.914 and 0.824 respectively. Nunnally (1978) recommends a minimum Cronbach's α of value 0.7. Caplan et al. (1984) state that the value must be at least 0.5. Based on these two recommendations, it was concluded that reliability of the four sections was more than adequate. Pedhazur and Schmelkin (1991) contend that a reliable scale measures the underlying concept consistently.

The main data collection method in this study was a mail survey. However, email and phone call were used to complete the data collection process. Respondents can fill out the postal survey questionnaire in their preferred time, this is especially true in the case of SMEs as there are limited numbers of employees, and each employee is often responsible for more than one job. Also, postal surveys have greater response rate than web-based surveys (Dillman et al., 2009). Moreover a postal survey can reach those respondents who only provide post office boxes as mailing addresses (Mansi, 2012).

Table 3.4 provides an overview of the data collection procedure in this study. As mentioned before, two businesses in the population frame agreed to participate in the survey by phone. Also, 28 businesses gave their email addresses to receive the survey pack electronically. As shown in Table 3.4, mailing the survey packs was started on 31 March 2014 and 96 survey packs were mailed every following business day. This process continued for 12 business days. During this process, 1097 survey packs were mailed out. Also 28 survey packs were emailed to those businesses that provided only their email addresses. From 28 emails, one email was undelivered and two businesses answered the questionnaire and returned it via email. From 1097 postal questionnaires, 158 were returned to sender due to wrong addresses or addresses left by businesses, while 102 questionnaires were completed and returned by mail/email. Moreover two businesses owners (one by email and one by telephone call) asked the researcher to pull out their businesses' names from the population frame list as they were not interested to participate in the study.

Table 3.4 Data Collection Procedure: First Round

Date	Mode of Delivery	How Many	Number of Returns to Sender	Number of Completed	Number of Pull Outs
12/03/2014	Phone	1	0	1	0
17/03/2014	Phone	1	0	1	0
27/03/2014	Email	28	1 (Undelivered)	2	0
31/03/2014	Mail	96	9	9	0
01/04/2014	Mail	96	14	10	0
02/04/2014	Mail	96	13	7	0
03/04/2014	Mail	96	16	10	0
04/04/2014	Mail	96	27	8	0
07/04/2014	Mail	96	11	12	0
08/04/2014	Mail	96	13	9	0
09/04/2014	Mail	96	14	11	1 (Call)
10/04/2014	Mail	96	11	5	0
11/04/2014	Mail	96	12	6	1 (Email)
14/04/2014	Mail	96	11	11	0
15/04/2014	Mail	41	6	0	0
Total		**1127**	**158**	**102**	**2**

Source: Author

As Table 3.4 shows, the response rate was calculated as follows:

1127-158 =969; Response Rate: $\frac{102\times100}{969}$ =10.53%

The target response rate for this study was 30%. This means that a further 338 completed questionnaires needed to be collected. Initially, on the closing date, only 102 questionnaires were returned. At this stage, it was realised that the number of completed and returned questionnaires was not even half the target. Therefore, the researcher decided to embark on sending a reminder letter to the businesses that had not participated.

As Table 3.5 shows, sending the survey packs with the reminder letter (see Appendix 4) was started on 7 May 2014. The process of sending the reminder letter continued for 12 business days. During this process, 841 survey packs with the reminder letter were mailed out. A further 25 survey packs with a reminder letter (see Appendix 5) were emailed. From these 25 emailed businesses, only three completed questionnaires were received electronically. From 841 postal questionnaires, 48 were returned to sender due to wrong addresses or addresses left by businesses, while 161 questionnaires were completed and returned by mail/email. Moreover one business owner called and asked the researcher to pull out his business's name from the population frame list as he was not interested to participate in the study.

Table 3.5 Data Collection Procedure: After Reminder Letter

Day	Mode of Delivery	How Many	Number of Returns to Sender	Number of Completed	Number of Pull Outs
07/052014	Reminder Email	25	0	3	0
12/05/2014	Reminder Mail	96	5	22	0
13/05/2014	Reminder Mail	96	6	18	0
14/05/2014	Reminder Mail	96	7	24	0
15/05/2014	Reminder Mail	96	11	21	1 (Call)
16/05/2014	Reminder Mail	96	9	13	0
19/05/2014	Reminder Mail	92	2	16	0
23/05/2014	Reminder Mail	17	1	6	0
26/05/2014	Reminder Mail	8	0	3	0
29/05/2014	Reminder Mail	95	3	17	0
30/05/2014	Reminder Mail	96	4	12	0
02/06/2014	Reminder Mail	53	0	6	0
Total of Reminders		**866**	**48**	**161**	**1**
Total		**1127**	**48+158=206**	**161+102=263**	**3**

Source: Author

As weeks progressed, the number of returned questionnaires approached the final target. In the process, it was realised that sending a reminder letter significantly increased the response

rate. From Table 3.5, 206 returns are subtracted from the 1127 sent out, so that a response rate of 28.55% was achieved, as per the calculation below:

1127-206 =921; Response Rate: $\frac{263\times100}{921}$ =28.55%

As the final step in data collection procedure, it was decided to email the last reminder letter (see Appendix 6) to those businesses that had not participated. In the population frame list, email addresses of 64 businesses were available, so the last reminder letter with survey packs were sent out to 64 businesses electronically on 4 August 2014. From these 64 emails, five of them were undelivered and two completed questionnaires were received by email. Thus, a total of 265 completed questionnaires were collected back out of 921 that were distributed, showing a response rate of 28.77%. Macpherson and Wilson (2003) believe that it is difficult to engage SME owner/managers in survey research because response rate in SME research is usually low. According to Hart (1987), response rate in industrial or business survey vary from 17 percent to 60 percent, with an average of 36 percent. Therefore, the response rate of 28.77% was found to be within the acceptable range of response rates for business surveys. Also it was very close to the target of 30% for this study.

3.10 Limitation of Method

One of the limitations of this study was related to its survey nature which is a self-assessment instrument and it is unavoidable that respondents answered based on their perception without any external help. This self-assessment is also limited to the particular statements listed in the questionnaire. In this respect, this study assumes that perceptions identified through the statements drive the adoption or rejection of sustainable practices. Furthermore, there is a lack of statistical information and contact details on regional SMEs in Ballarat which forced the researcher to use the registered SMEs on the Manta website. However, the large number (1449 SMEs) on the website ensured that this database was representative of the nature of SMEs in Ballarat. Finally, there were a few businesses on the Manta database with contact addresses that were out-of-date or with no contact address at all. This was only a marginal reduction of the database which had to be completely determined.

3.11 Summary

This chapter explained the research framework which was built from the relevant literature. It also discussed the reasons for selecting Ballarat as the study area. This chapter detailed the research philosophy, survey instrument, population frame, and data collection procedure. Also, this chapter described the pre-test and pilot study which enables an indication as to whether to progress to the main study. The next chapter presents the research methodology used to inform the social and environmental practices adopted by Ballarat area's SMEs and the effective factors on the adoption of sustainability.

Chapter 4: Methods

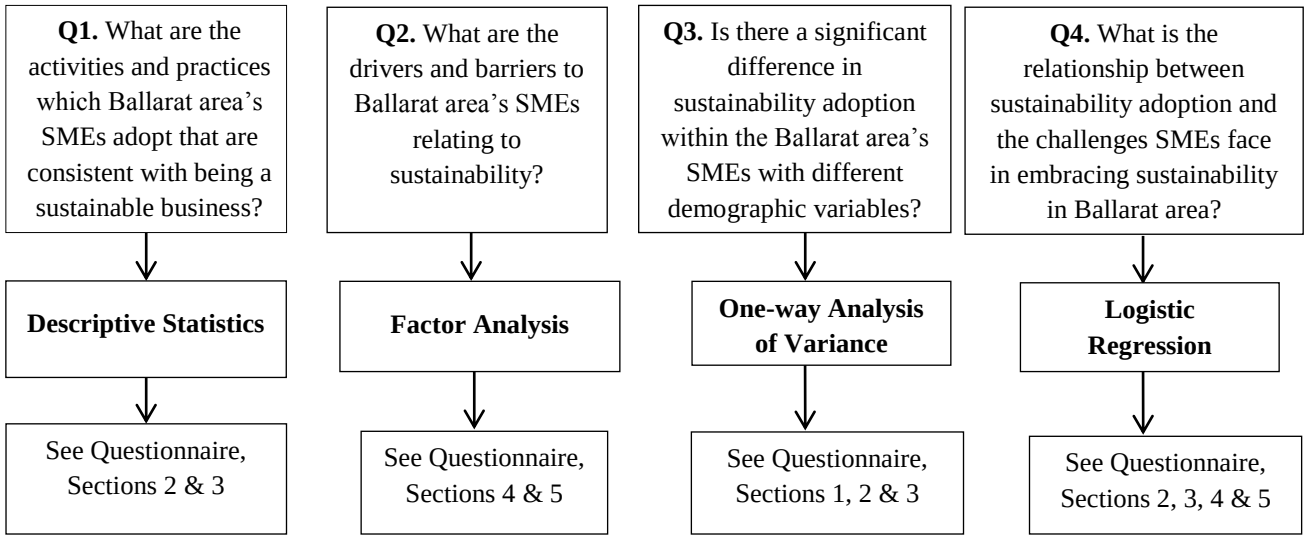
4.1 Introduction

This chapter outlines the research methods applied in this study to investigate the social and environmental practices adopted by the SMEs in Ballarat area and the factors affecting the adoption of such practices. This chapter sets out the research methods framework and explains each of the data analysis techniques employed in the study. Finally, the chapter outlines how the research design aims to address the research questions.

4.2 Research Methods Framework

The relevant analysis using Figure 3.1 (conceptual framework) was carried out using descriptive statistics, factor analysis, one-way analysis of variance, and logistic regression analysis. The results reveal the relationships between different variables and thus provide rigorous substantiation of the research framework. Figure 4.1 shows the techniques which were used in order to answer the research questions. The research questions in Figure 4.1 have replaced the phrase "regional city in Australia" with the specific region under study, i.e. "Ballarat area".

Figure 4.1 Research Methods Framework



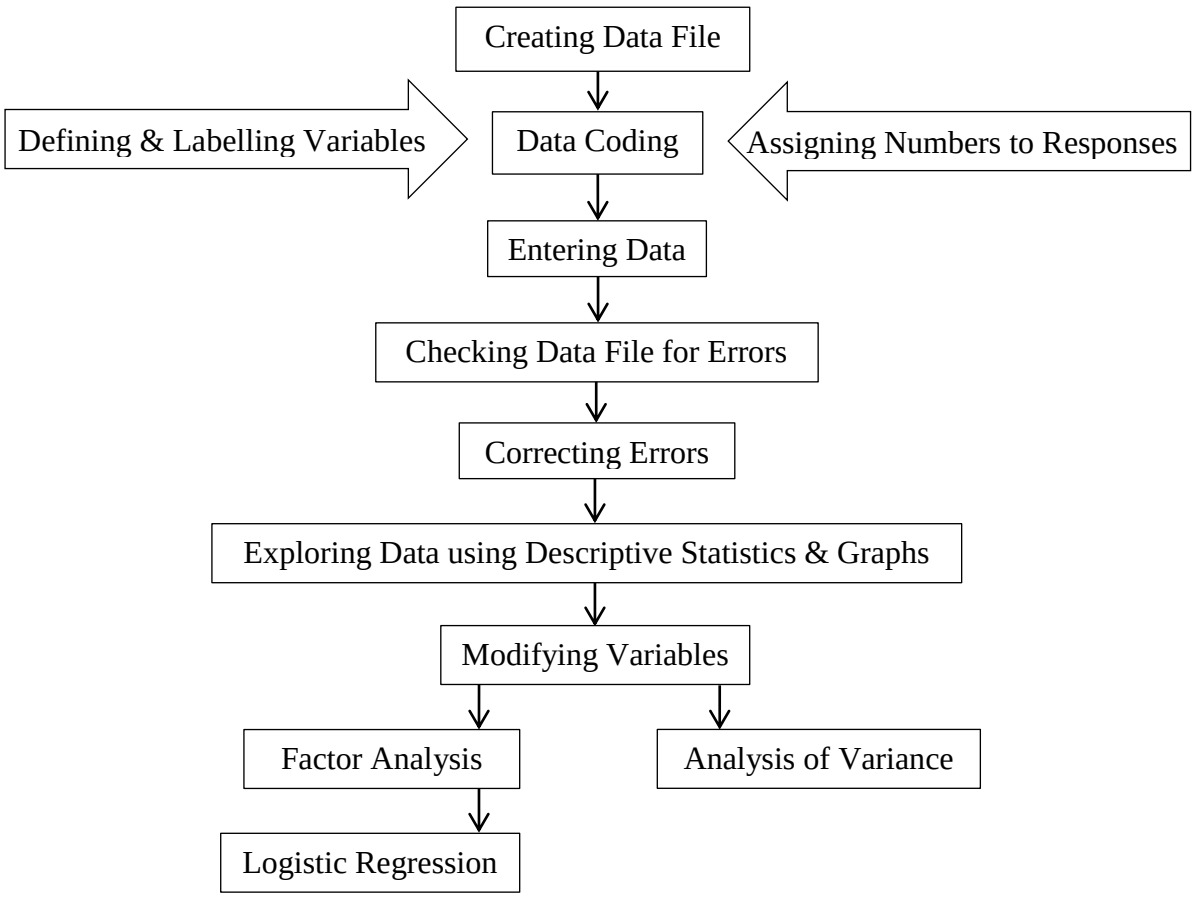
Source: Author

4.3 Data Analysis Process

As mentioned in Chapter Three, the main study observed the response rate at 28.77% which is close to the targeted response rate of 30%. Also, Cronbach's alpha values for the main four parts of the questionnaire (i.e. Social Practices, Environmental Practices, Inside your Firm and Outside Influences on your Firm) are in the range of high 0.8s and higher. This confirms that the scales are highly reliable in this study.

After completing the data collection, the data file was prepared using SPSS in order to begin the data analysis process. Figure 4.2 outlines the main steps of the data analysis process followed in this study. As shown in this figure, data preparation includes creating the data file and entering the data obtained from the survey questionnaire based on the defined codes. Data coding involves defining and labelling each of the variables and assigning numbers to each of the possible responses (Pallant, 2013). Once the data were coded, the researcher entered all the coded data into the SPSS file. Then the data file was checked for errors. Errors on data entry are very common and if the researcher starts data analysis without checking data file for errors, it is highly likely that all the analysis will need to be repeated. Hence, to avoid such a problem, the data file was checked and some typographical errors were found. Then those errors were corrected and the data file became ready for the statistical analysis. After the data were validated, the nature of the variables was explored and specific statistical techniques were conducted to address the research questions. The following subsections provide the details of each analysis and the way data were explored and modified.

Figure 4.2 Flowchart of Data Analysis Process



Source: Adapted from Pallant (2013, p. 28)

4.3.1 Descriptive Statistics

Descriptive statistics involve the arrangement, summary and presentation of data, to enable meaningful interpretation and support decision making (Martin & Pierce, 2002). According to Cavana et al. (2001), characteristics of the variables are well described by a descriptive study so the aim of a descriptive study is to obtain a clear profile of relevant aspects of a particular phenomenon.

This study asked some questions from the respondents about their demographic information so as to set the context for addressing the research questions. In the following subsection, the summaries of demographic variables of respondents are presented. These summaries include business category, gender, age of owner/manager, age of business, number of employees, position held, level of experience and education. This information was gathered from the first section (Business and Owner/Manager Demographics) of the survey questionnaire (see

Appendix 3). Although answering all questions/statements of the survey questionnaire was completely voluntary, the majority of respondents answered the whole questionnaire. Missing responses were limited to the question regarding gender.

4.3.1.1 Business and Owner/Manager Demographics

At the beginning, the questionnaire asked from the respondents: "Is your business in Ballarat a franchisee of a larger national/international firm?" Respondents who answered yes to this question were eliminated from further analysis because they do not belong to SME category as defined in this study. Same action was applied for the second question in the survey questionnaire: "Is your business in Ballarat a branch of a larger national/international firm?" (see Appendix 3).

Table 4.1 Distribution of Type of Businesses Eliminated

Type of Business	Frequency	Percent
Franchisee of a larger national/international firm	16	6.04
Branch of a larger national/international firm	12	4.53
Large Business with more than 200 employees	4	1.51
Total	32	12.08

Source: Author

Table 4.1 sets out the eliminated businesses by type. Total number of respondents was 265, of which 16 businesses were franchisees of a larger national/international firm and 12 businesses were branches of a larger national/international firm. Only four businesses were large and had more than 200 employees. Since this study is mainly about small and medium sized enterprises, all businesses with more than 200 employees were eliminated from the database. After eliminating these 32 businesses, further analysis was conducted on the remaining 233 respondent businesses.

Table 4.2 shows the distribution of population frame with respect to the number of employees. It provides the distribution of the two class intervals of SMEs and the number of employees in each interval. As this table shows, the majority of respondents in Ballarat (82.83%) were small businesses.

Table 4.2 Distribution of Number of Employees

Number of Employees	Frequency	Percent
0-19 (Small Businesses)	193	82.83
20-199 (Medium Businesses)	40	17.17
Total	233	100

Source: Author

Table 4.3 shows gender distribution of the SME respondents. This table shows 16.7% of the respondents did not provide an answer for their gender, while 62.7% and 20.6% of respondents were male and female respectively. The large proportion of male respondents confirms a gender disproportion in regional Australian SMEs (Lucas et al., 2009; Evans & Sawyer, 2010).

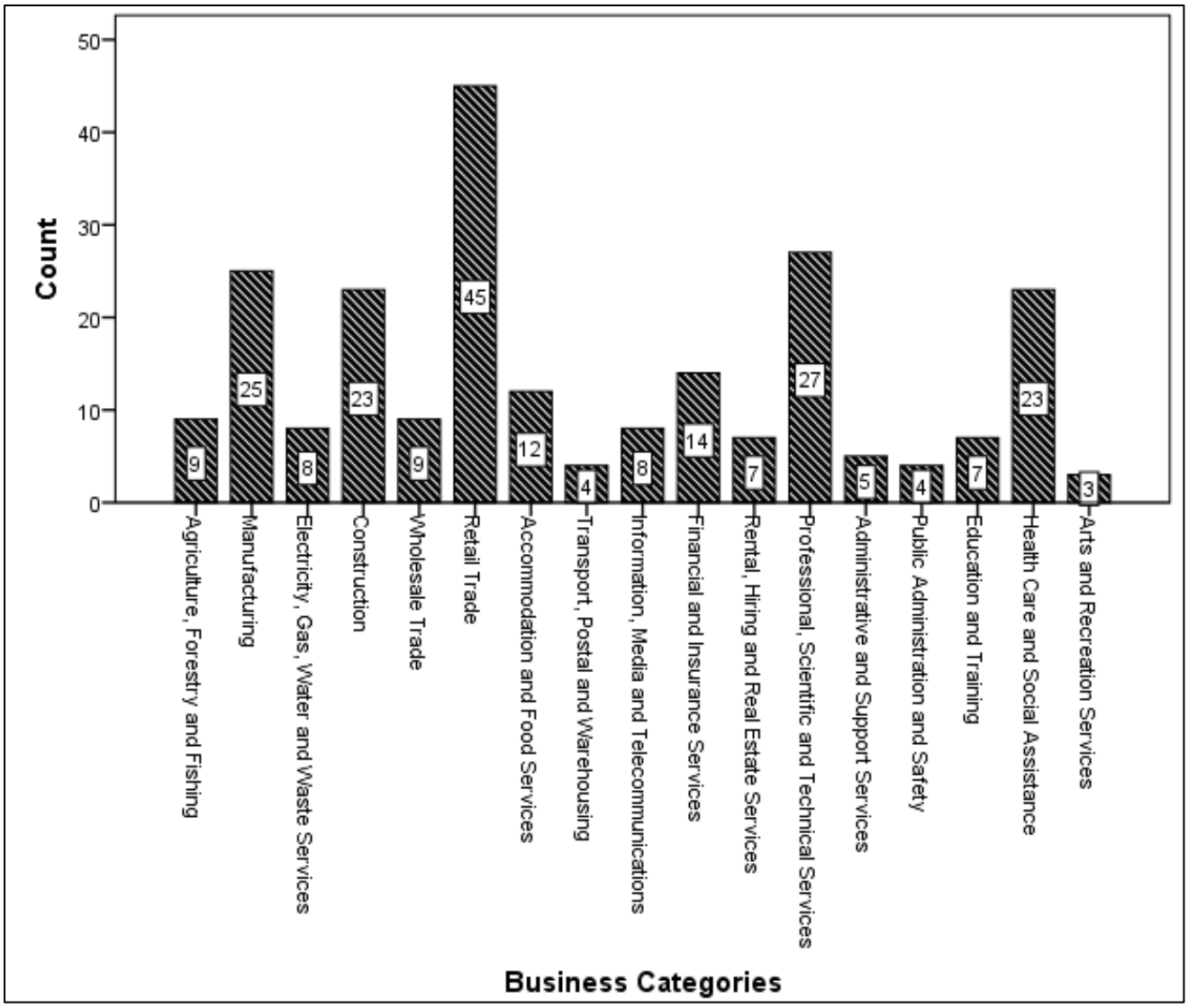
Table 4.3 Distribution of Respondents' Gender

Gender	Frequency	Percent
Female	48	20.6
Male	146	62.7
Non-response	39	16.7
Total	233	100

Source: Author

The businesses represented by the respondents were classified under 17 categories as shown in Figure 4.3. As shown, "Retail Trade" (45 businesses) and "Arts and Recreation Services" (3 businesses) were the most (by far) and least common business categories respectively.

Figure 4.3 Distribution of Business Category of Respondents



Source: Author

Table 4.4 provides the result of cross-tabulation between size and business category. It shows the number of observations (frequencies) in different categories and their percentage relative to number of employees. After retail trade (19.31%), professional, scientific and technical services sector had the highest number of businesses (11.59%). And 39.91% of businesses from different categories had up to four employees and 37.77% of them had 5 to 19 employees. Only 5.15% (12 businesses) of them had no employees.

Table 4.4 Distribution of Respondents across Business Category and Size

Business Category	Number of Employees (Size)				Total
	none	Up to 4	5-19	20-199	
Agriculture, Forestry and Fishing	1 (0.43%)	4 (1.72%)	3 (1.29%)	1 (0.43%)	9 (3.86%)
Manufacturing	1 (0.43%)	10 (4.29%)	9 (3.86%)	5 (2.15%)	25 (10.73%)
Electricity, Gas, Water and Waste Services	1 (0.43%)	5 (2.15%)	2 (0.86%)	0 (0%)	8 (3.43%)
Construction	2 (0.86%)	10 (4.29%)	8 (3.43%)	3 (1.29%)	23 (9.87%)
Wholesale Trade	0 (0%)	6 (2.57%)	2 (0.86%)	1 (0.43%)	9 (3.86%)
Retail Trade	2 (0.86%)	15 (6.44%)	21 (9.01%)	7 (3%)	45 (19.31%)
Accommodation and Food Services	0 (0%)	1 (0.43%)	6 (2.57%)	5 (2.15%)	12 (5.15%)
Transport, Postal and Warehousing	0 (0%)	3 (1.29%)	0 (0%)	1 (0.43%)	4 (1.72%)
Information, Media and Telecommunications	1 (0.43%)	4 (1.72%)	1 (0.43%)	2 (0.86%)	8 (3.43%)
Financial and Insurance Services	1 (0.43%)	6 (2.57%)	5 (2.15%)	2 (0.86%)	14 (6.01%)
Rental, Hiring and Real Estate Services	0 (0%)	0 (0%)	4 (1.72%)	3 (1.29%)	7 (3%)
Professional, Scientific and Technical Services	0 (0%)	12 (5.15%)	12 (5.15%)	3 (1.29%)	27 (11.59%)
Administrative and Support Services	0 (0%)	3 (1.29%)	2 (0.86%)	0 (0%)	5 (2.15%)
Public Administration and Safety	1 (0.43%)	2 (0.86%)	1 (0.43%)	0 (0%)	4 (1.72%)
Education and Training	0 (0%)	2 (0.86%)	3 (1.29%)	2 (0.86%)	7 (3%)
Health Care and Social Assistance	1 (0.43%)	9 (3.86%)	9 (3.86%)	4 (1.72%)	23 (9.87%)
Arts and Recreation Services	1 (0.43%)	1 (0.43%)	0 (0%)	1 (0.43%)	3 (1.29%)
Total	12 (5.15%)	93 (39.91%)	88 (37.77%)	40 (17.17%)	233 (100%)

Source: Author

Table 4.5 shows the distribution of respondents' age in the studied area, 51.5% of them were 50 to 64 years old, indicating that the majority of business owner/managers in Ballarat are in their later years, while 35.2% of them were 30-49 years old. The large proportion of older aged respondents confirms a mature population of owner/managers in regional Australian SMEs (Sawyer & Evans, 2009). Only 2.1% and 11.2% of the respondents were 18-29 years old and more than 64 years old respectively.

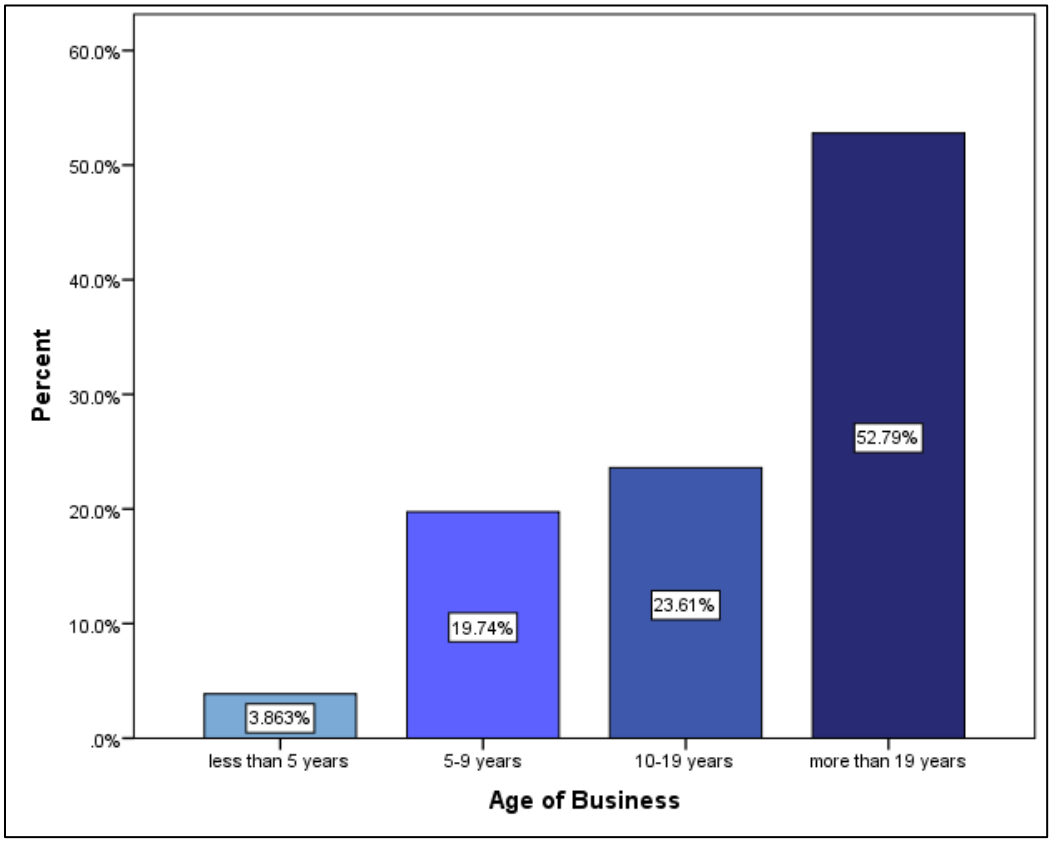
Table 4.5 Distribution of Respondents' Age

Age	Frequency	Percent
18-29 years	5	2.1
30-49 years	82	35.2
50-64 years	120	51.5
More than 64 years	26	11.2
Total	233	100

Source: Author

Figure 4.4 shows that 3.86% of the businesses have been established less than five years. Age of the majority of businesses (52.79%) was more than 19 years, i.e. they have operated as a business for more than 19 years. The large proportion of business owner/managers in the later years also confirms a high business age in the studied area.

Figure 4.4 Distribution of Business Age



Source: Author

Table 4.6 shows the distribution of respondents' position in the business. It appears that 59.66% of them were both owner and manager at the same time, while 15.88% and 24.46% of respondents were owners and managers respectively.

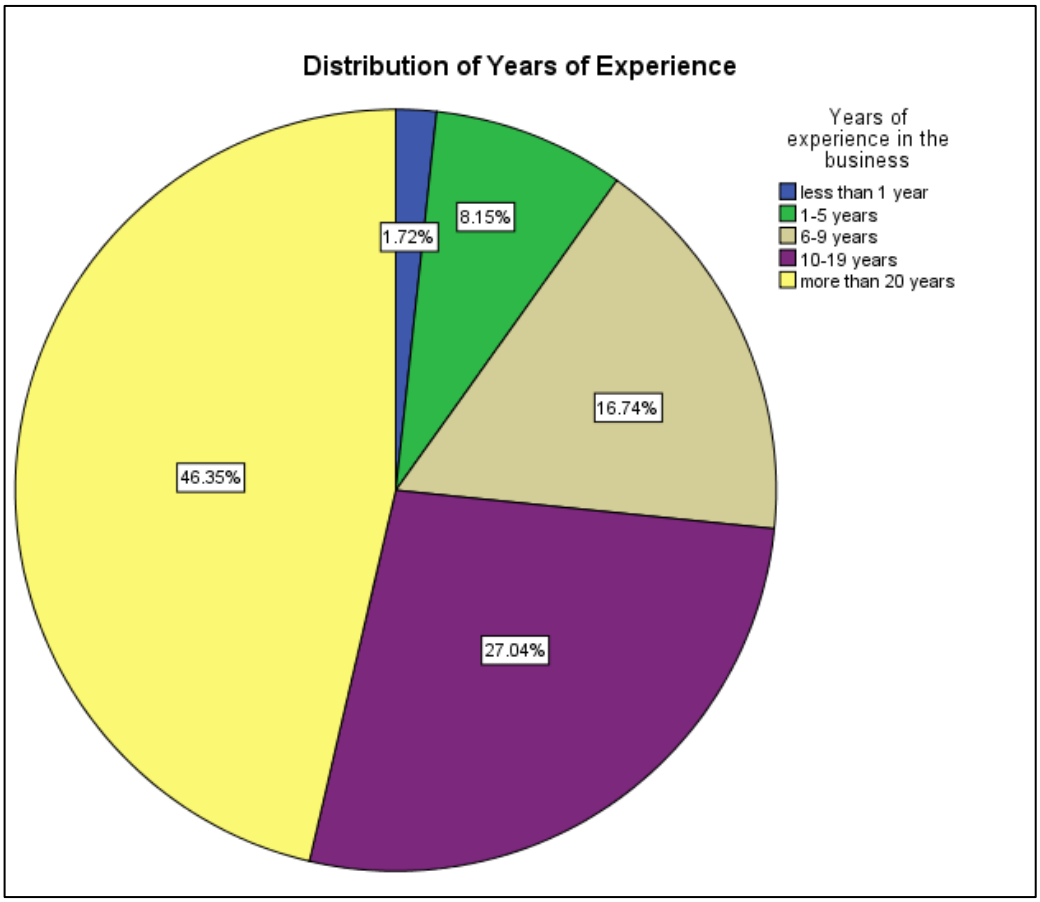
Table 4.6 Distribution of Respondents' Position

Position	Frequency	Percent
Owner	37	15.88
Manager	57	24.46
Owner & Manager	139	59.66
Total	233	100

Source: Author

Figure 4.5 shows the distribution of level of experience of the respondents. It is clear from the pie chart that 46.35% of respondents had more than 20 years of experience in their businesses. This finding confirms the high business age (more than 19 years) of 52.79% for respondent SMEs. Only 1.72% of the respondents had less than one year of experience.

Figure 4.5 Distribution of Level of Experience of Respondents



Source: Author

As Table 4.7 shows, the highest educational qualification of 30.47% of the respondents was high school while only 3.43% of the respondents had educational qualification below high school (primary and no formal education). With 26.18% of respondents having a TAFE degree, and 22.75% and 16.31% of the respondents had undergraduate and post graduate qualifications respectively, these statistics indicate a good level of academic education of business owner/managers in the studied area. Only two respondents had Doctoral or PhD qualification.

Table 4.7 Distribution of Formal Education of the Respondents

Formal Education	Frequency	Percent
No Formal Education	2	0.86
Primary	6	2.57
High School	71	30.47
TAFE	61	26.18
Undergraduate Bachelor's Degree	53	22.75
Post-graduate Qualification	38	16.31
Doctoral/PhD	2	0.86
Total	233	100

Source: Author

4.3.2 Factor Analysis

Factor analysis refers to a variety of statistical techniques, whose common objective is to represent a set of variables in term of a smaller number of hypothetical variables (Kim & Mueller, 1978). Fabrigar and Wegener (2012) explain that the aim of factor analysis usually is to assess a set of measures in order to create some distinct constructs which likely account for the structure of correlations among the measures. These measures are referred as factors (Fabrigar & Wegener, 2012). Factor analysis techniques help researchers to find out the number of factors which could be extracted from a set of measures. They also summarise the information underlying a set of measures by interpreting the nature of the factors (Fabrigar & Wegener, 2012). This is often achieved by including the maximum amount of information from the original variables in as few derived factors, as possible to keep the solution understandable. Each factor could be generalised in a way that is qualitatively distinct from that represented by any other factor (Nayak, 2007).

A measure of degree of generalisability found between each variable and each factor is calculated and referred to as a factor loading (Nayak, 2007). In other words, factor loadings are estimates of the strength and direction of the impacts of factors on each variable (Fabrigar & Wegener, 2012). Factor loading reflects quantitative relationships. The farther the factor loading is from zero, the more one can generalise from the factor to the variable. Comparing loadings of the same variable on several factors provides information concerning how easy it is to generalise to that variable from each factor (Gorsuch, 1983).

Pallant (2013) explains that there are two direct classes of factor analysis: Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). EFA is used to gather information about the interrelationships among a set of variables (Pallant, 2013). It mainly deals with discovering the factors in a measurement scale (Pedhazur & Schmelkin, 1991). On the other hand, CFA is used to test specific hypothesis or theories concerning the structure underlying a set of variables (Pallant, 2013). It mainly confirms the factors that govern the underlying relationships between variables (Pedhazur & Schmelkin, 1991).

EFA was conducted in this study. CFA which may follow exploratory factor analysis could not be performed due to a lack of data cases. Pallant (2013) notes that a new set of data must be used in CFA. As mentioned earlier in this chapter, the survey took a lot of time and other resources. It was necessary to wholly use the collected data set in the EFA. Since conducting one more survey was beyond the time frame and resource availability for the PhD study, the factor analysis was limited to an exploratory approach. Pallant (2013) explains that there are four main steps in conducting factor analysis:

Step 1: Assessment of the Suitability of the Data for Factor Analysis

In determining whether a particular data set is suitable for factor analysis, sample size and the strength of the relationship among the variables or items are two main issues to consider (Pallant, 2013).

I. Sample Size

While there is little agreement among scholars about the required sample size for doing factor analysis, the recommendation generally is the larger sample size, the better results. For example, Tabachnick and Fidell (2007) suggest a sample size of at least 300 for conducting factor analysis. Catell (1978) recommends a sample size of at least 200. Nunnally (1978) suggests a sample size that is at least 10 times the number of variables, i.e. ten cases for each item to be factor analysed. Wolins (1982) argues that a sample size depends on the specific items of analysis, the number of factors to be obtained, and the factor loadings. Thus these wide ranging rules of thumb suggested by the researchers show that deciding an appropriate sample size is a complex task. Stevens (2009, p. 372) suggests that the sample size requirements advocated by researchers have been reducing over the years as more research has been done on the topic. Some researchers suggest that the proportion of cases to items

(variables) is a more reliable criterion for factor analysis rather than overall sample size. For example, Tabachnick and Fidell (2007) suggest that five cases for each item are adequate in most cases. This suggestion was followed in this study when determining the adequacy of the sample size for factor analysis. As mentioned before (in Chapter Three), in this study, there were 34 variables for conducting factor analysis, so the sufficient sample size would be (34×5=) 170. As the total number of respondents in this study was 233 so it was concluded that the sample size for doing factor analysis in this study was reasonably adequate.

II. Strength of Relationships between Variables

Tabachnick and Fidell (2007) state that correlation coefficient demonstrates the strength of relationship between two variables. They recommend that correlation coefficients in a correlation matrix must be more than 0.3. The strength of relationships between variables determines the factorability of the data (Tabachnick & Fidell, 2007). For assessing the factorability of the data, many scholars (Thabachink & Fidell, 2007; Meyers et al., 2013; Pallant, 2013) recommend two tests in SPSS for Windows, the statistical software used in this study. They are 1) Bartlett's Test of Sphericity and 2) Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy. Tabachnick and Fidell (2007) state that data is factorable when Bartlett's test of sphericity is significant (p-value < 0.05) and KMO index is at least 0.6. In the current study (according to Table 4.8), the KMO value was 0.893. Since this value was more than the recommended minimum of 0.6 (Pallant, 2013), it was an indication that the data was factorable. Bartlett's Test of Sphericity provides a test of the null hypothesis that none of the variables (items) are significantly correlated (Meyers et al., 2013). This test gave the value of approximate $\chi 2$ (Chi-square) as 3594.328, with 561 degrees of freedom. The p-value was found to be 0.000. Since the p-value was less than 0.05, the approximate $\chi 2$ was considered as significant and the null hypothesis of lack of sufficient correlation between the items (variables) was rejected. This result also indicated that the data was suitable for factor extraction.

Table 4.8 KMO and Bartlett's Test

KMO Measure of Sampling Adequacy		0.893
Bartlett's Test of Sphericity	Approx. Chi-square	3594.328
	Df	561
	Sig.	0.000

Source: Author

Step 2: Factor Extraction

Factor extraction involves finding the smallest number of factors or components from a set of variables that can summarise the interrelationships between the variables (Pallant, 2013). Important factor extraction methods are Principal Component Analysis (PCA), Principal Factors, Maximum Likelihood Factoring, Image Factoring, Alpha Factoring, Unweighted Least Squares, and Generalised Least Squares (Pallant, 2013).

In this study, PCA method was used as it is the most commonly used approach for factor extraction (Pallant, 2013) and has the ability to avoid the problem of 'factor indeterminacy' associated with factor analysis and also is mathematically simpler (Stevens, 2009). Furthermore, Tabachnick and Fidell (2007) suggest that if a researcher is interested in an empirical summary rather than a theoretical solution, this being the case in this study, PCA is a better choice. Gorsuch (1983) contends that in PCA method, factors, which are also known as components in the method, are obtained by differentially weighing variables. A factor extracts both common variance and error variance.

For determining the number of factors to be retained in a scale, Pallant (2013) refers to the following two techniques in SPSS for Windows:

i) Kaiser criterion, and

ii) Cattell's Scree test

Kaiser criterion suggests that only those factors with an eigenvalue of one or more must be retained (Pallant, 2013). In this study, as Table 4.9 shows, the first eight components recorded eigenvalues above one (10.496, 2.379, 2.056, 1.498, 1.388, 1.237, 1.086, and 1.021). These eight components explained a total of 62.241% of the variance. Tabachnick and Fidell (2007) propose a rule of thumb that the accepted solution should account for at

least 50% of the variance. Often, using the Kaiser's criterion, too many components may be extracted, so it is important to also look at the other measures.

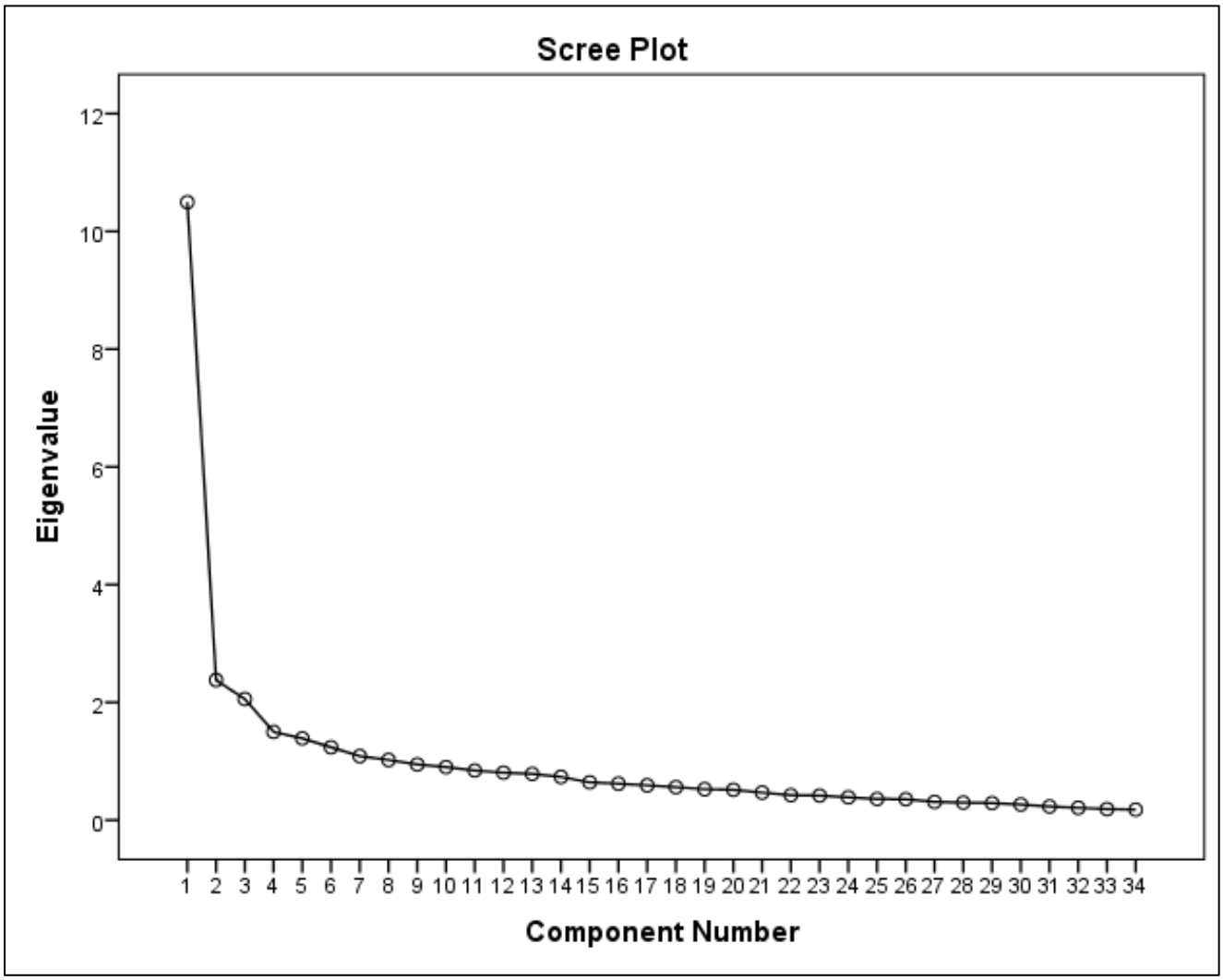
Table 4.9 Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	10.496	30.870	30.870
2	2.379	6.996	37.867
3	2.056	6.048	43.915
4	1.498	4.407	48.322
5	1.388	4.083	52.405
6	1.237	3.638	56.043
7	1.086	3.195	59.239
8	1.021	3.002	62.241
9	0.945	2.780	65.021
10	0.900	2.648	67.669
11	0.843	2.478	70.147
12	0.807	2.373	72.520
13	0.785	2.309	74.829
14	0.734	2.159	76.988
15	0.641	1.885	78.873
16	0.619	1.820	80.693
17	0.591	1.737	82.430
18	0.561	1.650	84.080
19	0.525	1.545	85.625
20	0.515	1.515	87.140
21	0.468	1.377	88.517
22	0.424	1.248	89.765
23	0.418	1.228	90.993
24	0.387	1.137	92.130
25	0.358	1.052	93.182
26	0.354	1.042	94.224
27	0.309	0.910	95.134
28	0.296	0.871	96.005
29	0.288	0.849	96.854
30	0.265	0.781	97.634
31	0.231	0.680	98.314
32	0.209	0.614	98.928
33	0.187	0.549	99.477
34	0.178	0.523	100.000

Source: Author

Cattell's Scree test, which displays a plot of eigenvalues against factors, recommends keeping all the factors above an elbow of a curve in the plot (Pedhazur & Schmelkin, 1991). In this test, there is a plot called "Scree Plot" which helps to find how many components can be extracted. In the scree plot, only components above change (or the elbow in the shape of the plot) are retained and extracted (Pallant, 2013). In other words, it should be considered where the scree plot is "still reasonably dropping (factors are still contributing to variance accounted for in potentially meaningful ways) and where it starts to straighten out (the point of diminishing returns where no gain is made by choosing additional factors)" (Meyers et al., 2013, p. 678). As Figure 4.6 shows, there is a clear breakdown between the third and fourth components. Components one, two, and three explain or capture much more of the variance than the remaining components. There is also another little break after the fourth component. Visual examination of Figure 4.6 reveals that not all eight components were located above the elbow of the curve, although they all had eigenvalues more than one.

Figure 4.6 Scree Plot



Source: Author

The final decision about the number of factors was made after considering more criteria. The following subsections provide more details about it.

Step 3: Factor Rotation

In EFA, the next step is the rotation of factors (Pallant, 2013). Gorsuch (1983) explains that the factors are rotated in order to increase their interpretability. This involves rotating the coordinate system about its origin. During a rotation, the distribution of variables from each other in the space remains the same, but the mapping of a variable on the coordinate axes, which refers to the loadings of the variable on several factors, do change.

Factor rotation should be done to obtain a simple structure of factors (Nayak, 2007). Based on Thurstone (1947) if another factor analysis with the same variables is conducted, the factor pattern of any given variable should be same. It is achievable if factors are rotated so that each variable loaded on as few factors as possible (Fabrigar & Wegener, 2012). According to Bryman and Cramer (2001), there are two factor rotation methods; orthogonal factor rotation, and oblique factor rotation. The main difference between these two methods is that oblique rotation could be conducted when some correlations exist between the factors. However, orthogonal rotation does not accept the correlation between the factors (Nayak, 2007). Bryman and Cramer (2001) contend that it is hard to specify which one of the above two groups can provide better factor interpretation. According to Tabachnick and Fidell (2007), orthogonal rotation results in solutions that are easier to interpret and to report; however, they do require the researcher to assume that the underlying constructs are independent.

Pallant (2013) points out that the statistical software SPSS for Windows provides the following orthogonal factor rotation methods: 1) Varimax, 2) Quartimax, and 3) Equamax and the following oblique factor rotation methods: 1) Direct Oblimin and 2) Promax. Gorsuch (1983) makes a comment that if a simple structure is already present, then any of the more popular factor rotation methods can be expected to lead to the same interpretation. For doing factor rotation in this study, the following rule of thumb proposed by Meyers et al. (2013) was applied.

At first a Promax rotation was used, and then the obtained factor correlation was examined:

- If the correlation of factors are in the range of high 0.3s or higher, an oblique rotation would probably be selected by most researchers.

- If the correlation coefficients of some of the factors are in the middle 0.3s or lower, an orthogonal rotation method (most likely Varimax) would be a good option.

- If some of the factors are correlated between these two ranges, the decision is less clear-cut and may vary substantially among researchers.

Details of the factor rotation method applied in this study are presented later in this chapter (Section 4.3.2.1), once all the required steps of factor analysis were described.

Step 4: Interpretation of Rotated Solution and Simple Structure

In the paragraphs that follow, several criteria for the interpretation of factor loadings are examined. It may be recalled from an earlier discussion that a factor loading refers to the loading of a variable on a factor. A variable may load on one or more factors (Gorsuch, 1983). Specific criteria were followed in the study for interpreting the factor loadings, including systematically discarding variables, which were not loading substantially on any factor.

Tabachnick and Fidell (2007) state that, if a simple structure is present (and factors are reasonably uncorrelated), several variables correlate highly with each factor and only one factor correlates highly with each variable. Gorsuch (1983) outlines a number of useful criteria for obtaining a simple structure, which were originally developed by Thurstone (1947). They are:

i) Each variable should have at least one zero loading,

ii) Each factor should have a set of linearly independent variables whose factor loadings are zero,

iii) For every pair of factors, there should be several variables whose loadings are zero for one factor but not for the other,

iv) For every pair of factors, a large proportion of the variables should have zero loadings on both factors whenever more than about four factors are extracted, and

v) For every pair of factors, there should be only a small number of variables with non-zero loadings on both.

For making a decision regarding how large a coefficient or loading of a variable should be to be included in a factor, the following recommendations used in the study were developed following Thurstone's simple structure criteria (Thurstone, 1947). First, Comrey and Lee (1992) determine coefficient of 0.7 as excellent, 0.6 as very good, 0.5 as good, 0.4 as fair and 0.3 as poor. Tabachnick and Fidell (2007) argue for 0.3 as the minimum loading. Based on Gorsuch (1983)'s suggestion, item loading of 0.3 may be too small, especially if there are many variables in the analysis. Stevens (2009) recommends 0.4 to achieve practical worth. Meyers et al. (2013) recommend a criterion based on the sample size. In their view, a range of 0.4 to 0.45 is considered as minimum loading for sample sizes less than 200. With larger sample sizes, variables with loadings in the high 0.3s might be captured in a factor. For the purpose of this study, a variable (item) was accepted to be related to a factor (component) if it contains a loading or coefficient of 0.425 or better. The results of the simple structure related to this study are presented in the Section 4.3.2.1.

Naming the factors obtained in a rotated solution is also a crucial part of interpreting factors. Pedhazur and Schmelkin (1991) advise that knowledge of the specific domains considered in a scale is immensely valuable in giving appropriate names to the factors. Nayak (2007) believes that understanding the fundamental concept in the variables (items) of a factor plays a key role in naming the factor in a meaningful and suitable manner. Hence, naming of factors is not considered as an easy task by researchers. For example, Shulman (1973) remarks that naming a set of factors is not a rational act but a primary process of thinking, untainted by the reality principles. Crawford and Lomas (1980) explain naming the factor as the major difficulty in doing factor analysis. They believe that variables do not show an easy and logical description as they usually do not form linear composites. The procedures of naming factors in this study and the reason for naming each factor are specified in Chapter Five.

4.3.2.1 Final Decision on the Number of Factors

Before making a final decision concerning the number of factors, Pattern Matrix was monitored to find the items loading on eight factors (or components). The pattern matrix presents pattern coefficient which are the weights that have been assigned to variables in the linear function (factors) (Meyers et al., 2013, p. 679). As mentioned before (in Step 4) for the

purpose of this study, a variable (item) was accepted to be related to a factor (component) if it contains a loading or coefficient of 0.425 or better.

Table 4.10 highlights the items loading on the eight factors with five items loading above 0.425 on component one (X_1), seven items loading on component two (X_2), four items on component three (X_3), four items on component four (X_4), three items on component five (X_5), one item on component six (X_6), two items on component seven (X_7), and two items loading on component eight (X_8). According to Pallant (2013), there should be three or more items loading above 0.4 (or more) on each factor. Also the sign of the item loadings is not considered because positive and negative loadings simply reflect the way the variable is measured and stronger relationships, whether direct or inverse, still reflect more association on the factor (Meyers et al., 2013).

Table 4.10 Pattern Matrix

	Component							
	1	2	3	4	5	6	7	8
X_1	0.696							
X_2	0.651							
X_3	0.602							
X_4	0.515							
X_5		-0.820						
X_6		-0.806						
X_7		-0.774						
X_8		-0.686						
X_9		-0.522						
X_{10}		-0.443						
X_{11}	0.435	-0.438						
X_{12}			-0.806					
X_{13}			-0.718					
X_{14}			-0.689					
X_{15}			-0.665					
X_{16}				-0.629				
X_{17}				-0.621			0.408	
X_{18}				-0.606		0.321		
X_{19}				-0.498				
X_{20}				-0.4				
X_{21}					-0.702			
X_{22}				-0.352	-0.652			
X_{23}					-0.545			
X_{24}	0.348		-0.336		-0.392			

	Component							
	1	2	3	4	5	6	7	8
X_{25}					-0.313			
X_{26}						0.771		
X_{27}			-0.334		-0.310	0.385		
X_{28}							0.681	
X_{29}	0.304	0.304				0.420	0.456	
X_{30}				-0.334			0.373	
X_{31}								0.804
X_{32}								0.720
X_{33}		-0.322						0.355
X_{34}								0.331

Source: Author

Considering all the obtained results from factor analysis, the final decision concerning the number of components (factors) was to retain the first five factors. Because visual examination of scree plot (Figure 4.6) revealed that five factors were located above the elbow of the curve. Also Kaiser Criterion showed that eight factors had eigenvalues larger than one, explaining a cumulative variance of 62.241%. However, according to Table 4.9, the cumulative variance at the fifth factor was 52.405% which was almost close to the cumulative variance of the sixth factor (56.043%). Moreover, the percentages of variance explained by seventh and eighth factors are 3.195 and 3.002 respectively which are small proportions of the total variance. Pedhazur and Schmelkin (1991) argue that PCA is a data reduction method and the aim of its application must be to obtain a relatively small number of factors that will extract most of the variance of a relatively large set of variables. In the light of these arguments, no theoretical rationale was found for keeping eight factors, thus only five factors were retained.

Based on the preliminary analysis conducted above, it appeared that five components (factors) are needed to describe the underlying structure of the 34 items on the survey questionnaire. Hence, it was necessary to go back and perform the five-component factor analysis. For presenting the output of five-component factor analysis, only those results that are specific to this particular analysis are shown. For example, because the extraction phase of this analysis is identical to that of the preliminary analysis, it is known that the five-component solution accounts for 52.405% of the total variance (see Table 4.9).

Table 4.11 shows the factor loadings of each variable. In order to identify and label five components, highest loading items on each component were monitored. As Table 4.11

highlights there are eight items loading above 0.425 on component one, five items loading on component two, five items loading on component three, five items loading on component four, and four items loading on component five. It should be noticed that the 26th item (Small firms should ensure the health and safety of its employees) had two item loadings on components four and five, but only item loading of -0.585 was included on component four, because this item loading (-0.585) had a greater absolute value than the item loading of -0.462 in component five. As Table 4.11 shows, from 34 items considered for factor analysis, 27 items were clustered in five factors and seven items did not belong to any factor.

Table 4.11 Pattern Matrix of Five-component Factor Analysis[5]

	Component				
	1	**2**	**3**	**4**	**5**
Businesses with sound environmental management practices are well supported by customers	0.843				
There is an increased public demand for ethical products and services	0.837				
Pressure from existing customers could force businesses to preserve the natural environment	0.818				
Being socially and environmentally responsible attracts new customers	0.725				
Suppliers and trade bodies should put pressure on businesses to be socially and environmentally friendly	0.684				
Socially and environmentally responsible businesses can minimise the risk of damage to their own reputation by dealing with socially responsible suppliers	0.585				
Socially and environmentally responsible businesses are able to attract and retain staff	0.487				
Staff and employees should put pressure on businesses to be socially and environmentally friendly	0.469				
It's better that government enforces environmental taxes for businesses					
Socially and environmentally responsible businesses have the potential to break into new markets or promote existing markets		0.683			
Socially and environmentally responsible businesses achieve cost savings from energy or other resource efficiencies		0.677			
I am aware of environmental protection programs		0.654			

[5] The semantic directions of the item statements included in each factor would be homogenised in the next chapter before conducting Exploratory Factor Analysis. For more details, see Chapter 5, Section 5.3.

	Component				
	1	2	3	4	5
organised by the government or external organisations					
I realise that most of the electricity in Victoria is produced by burning highly polluting brown coal		0.520			
Transition to a low-carbon economy will bring opportunities for business growth		0.437			
National and local environmental laws and regulations should be strictly enforced in the business context					
Environmental issues should be a very high management priority					
It is not the individual responsibility of business owner/managers to solve environmental problem					
My firm has low impact on the local community and environment			-0.781		
I'm not in the right industry to make a difference to local community			-0.761		
Environmental issues aren't relevant to my business			-0.756		
Business owners cannot be expected to help solve social issues			-0.683		
It is the responsibility of every business owner/manager to have policies that help improve society			-0.450		
I don't have enough time to introduce socially/environmentally-friendly activities to my employees					
Preserving the environment and respecting local community is simply the right thing to do				-0.669	
Small firms should ensure the health and safety of its community				-0.655	
Small firms should ensure the health and safety of its employees				-0.585	-0.462
Business should regulate itself to improve environmental practices				-0.549	
Contributing to protecting environment and supporting the local community gives me personal pride and enjoyment				-0.492	
My business has poor infrastructure to support some activities like recycling					-0.556
My business will not benefit financially from environment-friendly activities					-0.545
Business must spend some money and efforts for environmental protection and management					-0.435
Being environmentally and socially friendly increases my business costs					-0.425
Small businesses should leave the government to tackle environmental issues					

	Component				
	1	2	3	4	5
Government should offer some form of recognition of businesses that have good environmental management practices					

Source: Author

Table 4.12 shows correlation coefficients between components which were gained using Promax rotation method. As shown in this table, a high majority of factors are correlated in the range of high 0.3s and higher, so based on the strategy presented earlier (Step 3), an oblique factor rotation should be applied. Direct Oblimin method was used in this study to rotate the coordinate system about its origin (Meyers et al., 2013).

Table 4.12 Component Correlation Matrix by Promax Rotation[6]

Component	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1	1	0.414	0.508	0.496	0.412
Factor 2	0.414	1	0.369	0.475	0.417
Factor 3	0.508	0.369	1	0.397	0.393
Factor 4	0.496	0.475	0.397	1	0.368
Factor 5	0.412	0.417	0.393	0.368	1

Source: Author

4.3.3 One-way Analysis of Variance (ANOVA)

One-way, between-groups Analysis of Variance (ANOVA) is performed in order to compare the mean scores of a dependent variable in three or more groups (Tabachnick & Fidell, 2007). Bryman and Cramer (2001) explain that one-way, between-group ANOVA is essentially an F test in which an estimate of between-groups variance is compared with an estimate of within-groups variance by dividing the former by the latter. The total amount of variance of a dependent variable originates from two sources. First source of variance is the independent variable. This variance is referred to as explained variance. Second source of variance consists of measurement errors and other influences. The resulting variance is known as error variance or residual variance. It may be noted that the residual variance manifests as within-groups variance. On the other hand, the explained variance manifests as between-groups variance. If the explained variance is considerably higher than the residual variance, then the

[6] Nomenclature of the factors will be done in the next chapter based on the previous literature and the item statements included in each factor. Hence, instead of putting the name of factors in this table, Factors 1 to 5 have been mentioned.

value of the F ratio will also be higher, implying that the difference between the mean scores is unlikely to be due to chance (Bryman & Cramer, 2001).

F Ratio

Tabachnick and Fidell (2007) explain that the between-groups variance is same as the between-groups mean square (MS_{bg}). It is obtained by dividing the between-groups sum of squares (SS_{bg}) by its degrees of freedom (df). Similarly, the within-groups variance is same as the within-groups mean square (MS_{wg}), which is obtained by dividing the within-groups sum of squares (SS_{wg}) by its corresponding degrees of freedom (df). A significant F ratio indicates that the null hypothesis must be rejected and alternative hypothesis is accepted, which implies that there is a significant difference in the mean scores between the groups (Tabachnick & Fidell, 2007).

Post Hoc Comparisons

A significant F ratio may not indicate which particular two groups have a significant difference in their mean scores (Tabachnick & Fidell, 2007). Pallant (2013) recommends the Post Hoc Comparisons method for locating the two groups. This method is designed to guard against the possibility of Type I error by setting more stringent criteria for a significance test. In Post Hoc Comparisons method, the most commonly used techniques are Tukey's Honestly Significant Difference (HSD) test and Scheffe test (Pedhazur & Schmelkin, 1991).

Effect Size

One more aspect often considered in ANOVA analysis is the Effect Size or strength of association. Although ANOVA tools such as F ratio and Post Hoc Comparisons are designed to indicate the between-groups difference in a dependent variable, they do not directly inform the degree to which the independent variable and the dependent variable are related. The knowledge of this relationship is essential in order to avoid publicising trivial results of no practical utility (Tabachnick & Fidell, 2007). In order to evaluate the strength of relationship between an independent variable and its dependent variable, Pallant (2013) suggests an index namely Effect Size, which indicates the amount of total variance in a dependent variable that is predictable from the knowledge of an independent. Since the Effect Size is not provided by SPSS for Windows, the statistical software used in this study, Pallant (2013) explains how to roughly estimate the Effect Size from an index named η^2 (eta squared). η^2 is obtained by dividing SS_{bg} by (SS_{bg}+SS_{wg}). Tabachnick and Fidell (2007) provide rules of thumb to

determine the effect size from η^2 as follows: An independent variable has small effect on groups when η^2 is around 0.01; has medium effect when η^2 is around 0.06; and has large effect when η^2 is around 0.14.

4.3.3.1 Preparation of the Variables for ANOVA

All respondent SMEs in the data file used in the study were arranged into five sets comprising groups; first set determined by business category, the second set by business age, the third set by business size, the fourth set by education level, and the last set by experience level of the owner/managers. In the one-way ANOVA, business category, business age, business size, education and experience were considered as independent variables (Tabachnick & Fidell, 2007).

Based on business category, five categories which have the highest frequency (see Table 4.4) were selected. These categories were organised into five groups:

i. Retail Trade (45 businesses)

ii. Professional, Scientific and Technical Services (27 businesses)

iii. Manufacturing (25 businesses)

iv. Construction (23 businesses)

v. Health care and Social Assistance (23 businesses)

Based on business age, the respondents were divided into two groups (see Figure 4.4):

i. Less than 10 years old (55 businesses)

ii. 10 years old or more (178 businesses)

Based on business size, determined by number of employees, the respondents were divided into two groups (see Table 4.2):

i. Small (0-19 employees)

ii. Medium (20-199 employees)

Based on education level of owner/managers, the respondents were divided into three groups (see Table 4.7):

i. Elementary education (no formal education, primary and high school)

ii. Undergraduate education (bachelor degree and TAFE)

iii. Postgraduate education (master degree and PhD)

Based on experience level of owner/managers, the respondents were divided into three groups (see Figure 4.5):

i. 1-5 years

ii. 6-19 years

iii. More than 19 years

In the ANOVA analysis, the social and environmental practices became the dependent variables (Tabachnick & Fidell, 2007). Before performing ANOVA, the total scale scores for social and environmental practices were needed to be calculated (Pallant, 2013). It means that scores of social and environmental practices for each respondent consist of the addition of scores on each of the items related to social and environmental practices. The social practices scale is a 17-items scale with a response scale from 1 to 4 (see Appendix 3). Hence the minimum value for the total score would be 17 because if a respondent answered 1 (Never) to every item, that overall score would be 17×1=17 and the maximum value would be 68 as it means that a respondent answered 4 (Often) to each item (17×4=68). Same procedure was applied to the environmental practices scale as well. In the environmental practices section of the questionnaire, there are seven items with a response scale from 1 to 4 (see Appendix 3), so the minimum and maximum values for the total score of environmental practices would be 7 and 28 respectively.

4.3.3.2 Assumptions of ANOVA

Normal distribution and homogeneity of variance are two important assumptions needed to meet before doing ANOVA (Pallant, 2013). After preparing the variables for ANOVA, these assumptions should be addressed. In the following subsections, at first the required assumptions are examined and then the hypotheses are presented which will be tested by ANOVA in the next chapter.

Social Practices across Business Categories

The assumption of the normality was tested and the obtained results showed that data distributions come from a normal population. As Table 4.13 shows, the distributions of data are normal in all five business categories as all p-values (Sig) are more than 5% (or 0.05) so the null hypothesis of normal distribution is accepted.

Table 4.13 Normality Test for Social Practices across Five Business Categories

	Business Category	Hypothesis	Shapiro-Wilk			Result
			Statistics	df	Sig.	
Social Practices	Manufacturing	The data come from a normal distribution	0.965	24	0.552	Accept
	Construction	The data come from a normal distribution	0.986	21	0.983	Accept
	Retail Trade	The data come from a normal distribution	0.985	41	0.844	Accept
	Professional, Scientific & Technical Services	The data come from a normal distribution	0.907	26	0.223	Accept
	Health Care and Social Assistance	The data come from a normal distribution	0.970	22	0.717	Accept

Source: Author

Homogeneity of Variance is another assumption required for conducting ANOVA analysis. This means that the variability of scores for each of the groups is similar (Pallant, 2013). To test this, Levene's Test for equality of variances was performed. The results of this test revealed that data are suitable for doing ANOVA as the assumption of homogeneity of variances was satisfied. Levene Statistic was 1.446 and p-value was 0.223 which is greater than 0.05 (accepting the null hypothesis of equal variances) (Pallant, 2013). After meeting the required assumptions for doing ANOVA (normality and homogeneity of variances), the following hypotheses were tested using ANOVA.

H_0: There is no significant difference in the adoption of social practices between five business categories ($\mu_1=\mu_2=\mu_3=\mu_4=\mu_5$). It means that business category has had no effect on the adoption of social practices within the Ballarat area.

H_1: There is a significant difference in the adoption of social practices between five business categories ($\mu_1\neq\mu_2\neq\mu_3\neq\mu_4\neq\mu_5$). It means that business category has had effects on the adoption of social practices within the Ballarat area.

Environmental Practices across Business Categories

As Table 4.14 shows the distribution of data is normal in four business categories as the assigned p-values (Sig) are more than 0.05 so the null hypothesis of normal distribution is accepted. In Retail Trade category, the obtained p-value (0.002) is less than 0.05 indicating a violation of the assumption of normality. According to Pallant (2013), the violation of normality should not cause any major problem in groups with large enough sample sizes (more than 30). As the number of cases in the Retail Trade category is 45, so the violation of normality in this category does not affect the results of ANOVA as the sample size in this category is more than 30 (Tabachnick & Fidell, 2007).

Table 4.14 Normality Test for Environmental Practices across Five Business Categories

	Business Category	Hypothesis	Shapiro-Wilk			Result
			Statistics	df	Sig.	
Environmental Practices	Manufacturing	The data come from a normal distribution	0.918	25	0.074	Accept
	Construction	The data come from a normal distribution	0.973	23	0.767	Accept
	Retail Trade	The data come from a normal distribution	0.913	45	0.002	Reject
	Professional, Scientific & Technical Services	The data come from a normal distribution	0.930	27	0.071	Accept
	Health Care and Social Assistance	The data come from a normal distribution	0.960	23	0.457	Accept

Source: Author

The results of homogeneity of variance test showed that data are suitable for doing ANOVA as the assumption of homogeneity of variances was satisfied. Levene Statistic was 1.092 and p-value was 0.363 greater than 0.05 (accepting null hypothesis of equal variances) (Pallant, 2013). After meeting the required assumptions for doing ANOVA (normality and homogeneity of variances), the following hypotheses were tested using ANOVA.

H_0: There is no significant difference in the adoption of environmental practices between five business categories ($\mu_1=\mu_2=\mu_3=\mu_4=\mu_5$). It means that business category has had no effect on the adoption of environmental practices within the Ballarat area.

H_1: There is a significant difference in the adoption of environmental practices between five business categories ($\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5$). It means that business category has had effects on the adoption of environmental practices within the Ballarat area.

Social Practices across Business Ages

The assumption of normality was tested and the obtained results showed that data distributions come from a normal population. As Table 4.15 shows, the distribution of data is normal in the business age of less than 10 years as the p-value (Sig) is more than 5%. In the business age of 10 or more years, the p-value is less than 5% indicating a violation of the assumption of normality. Since the number of cases in this category is 167, so the violation of normality does not affect the results of ANOVA as the sample size in this group is more than 30.

Table 4.15 Normality Test for Social Practices across Two Business Ages

	Business Age	Hypothesis	Shapiro-Wilk			Result
			Statistics	df	Sig.	
Social Practices	<10 years old	The data come from a normal distribution	0.960	52	0.078	Accept
	≥10 years old	The data come from a normal distribution	0.979	167	0.014	Reject

Source: Author

Homogeneity of Variance is another assumption required for conducting ANOVA analysis (Pallant, 2013). To test this, Levene's Test for equality of variances was performed. The results of this test revealed that data are suitable for conducting ANOVA as the assumption of homogeneity of variances was satisfied. Levene Statistic was 4.932 and p-value was 0.072 which is greater than 0.05 (accepting the null hypothesis of equal variances) (Pallant, 2013). After meeting the required assumptions for conducting ANOVA (normality and homogeneity of variances), the following hypotheses were tested using ANOVA.

H_0: There is no significant difference in the adoption of social practices between both business ages ($\mu_1 = \mu_2$). It means that business age has had no effect on the adoption of social practices within the Ballarat area.

H_1: There is a significant difference in the adoption of social practices between both business ages ($\mu_1 \neq \mu_2$). It means that business age has had effects on the adoption of social practices within the Ballarat area.

Environmental Practices across Business Ages

As Table 4.16 shows the distribution of data is not normal in both business ages as the assigned p-values (Sig) are less than 0.05 indicating a violation of the assumption of normality. Since the number of cases in both groups are more than 30, so the violation of normality does not affect the results of ANOVA (Tabachnick & Fidell, 2007).

Table 4.16 Normality Test for Environmental Practices across Two Business Ages

	Business Age	Hypothesis	Shapiro-Wilk			Result
			Statistics	df	Sig.	
Environmental Practices	>10 years old	The data come from a normal distribution	0.896	55	0.000	Reject
	≤10 years old	The data come from a normal distribution	0.958	178	0.000	Reject

Source: Author

The results of homogeneity of variance test showed that data are suitable for doing ANOVA as the assumption of homogeneity of variances was satisfied. Levene Statistic was 0.05 and p-value was 0.823 greater than 0.05 (accepting null hypothesis of equal variances) (Pallant, 2013). After meeting the required assumptions for conducting ANOVA (normality and homogeneity of variances), the following hypotheses were tested using ANOVA.

H_0: There is no significant difference in the adoption of environmental practices between two business ages ($\mu_1=\mu_2$). It means that business age has had no effect on the adoption of environmental practices within the Ballarat area.

H_1: There is a significant difference in the adoption of environmental practices between two business ages ($\mu_1\neq\mu_2$). It means that business age has had effects on the adoption of environmental practices within the Ballarat area.

Social Practices across Business Sizes

As explained earlier, based on business size (independent variable) the respondent SMEs in Ballarat were organised into two groups as follows: 1) Small, 2) Medium. The assumption of the normality was tested and the obtained results showed that data distribution does not come from a normal population in small-sized businesses. As Table 4.17 shows in small-sized businesses, the obtained p-value (0.021) is less than 0.05 indicating a violation of the assumption of normality. Since the number of cases in the small-sized businesses is 179, so

the violation of normality in this category does not affect the results of ANOVA as the sample size in this group is more than 30. Moreover the distribution of data in medium-sized group is normal as the related p-value (Sig) is more than 0.05 (0.86) so the null hypothesis of normal distribution in medium-sized businesses is accepted.

Table 4.17 Normality Test for Social Practices across Two Business Sizes

	Business Size	Hypothesis	Shapiro-Wilk			Result
			Statistics	df	Sig.	
Social Practices	Small	The data come from a normal distribution	0.982	179	0.021	Reject
	Medium	The data come from a normal distribution	0.952	40	0.86	Accept

Source: Author

The results of homogeneity of variance test showed that data are suitable for doing ANOVA as the assumption of homogeneity of variances was satisfied. Levene Statistic was 1.674 and p-value was 0.197 greater than 0.05 (accepting null hypothesis of equal variances) (Pallant, 2013). After meeting the required assumptions for doing ANOVA (normality and homogeneity of variances), the following hypotheses were tested using ANOVA.

H_0: There is no significant difference in the adoption of social practices between two business sizes ($\mu_1=\mu_2$). It means that business size has had no effect on the adoption of social practices within the Ballarat area.

H_1: There is a significant difference in the adoption of social practices between two business sizes ($\mu_1\neq\mu_2$). It means that business size has had effects on the adoption of social practices within the Ballarat area.

Environmental Practices across Business Sizes

The assumption of the normality was tested and the obtained results showed that data distribution does not come from a normal population in small-sized businesses. As Table 4.18 shows in small-sized businesses, the obtained p-value (0.00) is less than 0.05 indicating a violation of the assumption of normality. Since the number of cases in the small-sized businesses is 193, so the violation of normality in this category does not affect the results of ANOVA as the sample size in this group is more than 30. Moreover the distribution of data in

medium-sized group is normal as the related p-value (Sig) is more than 0.05 (0.097) so the null hypothesis of normal distribution in medium-sized businesses is accepted.

Table 4.18 Normality Test for Environmental Practices across Two Business Sizes

	Business Size	Hypothesis	Shapiro-Wilk			Result
			Statistics	df	Sig.	
Environmental Practices	Small	The data come from a normal distribution	0.949	193	0.00	Reject
	Medium	The data come from a normal distribution	0.953	40	0.097	Accept

Source: Author

The results of homogeneity of variance test showed that data are suitable for doing ANOVA as the assumption of homogeneity of variances was satisfied. Levene Statistic was 1.205 and p-value was 0.273 which is greater than 0.05 (accepting null hypothesis of equal variances). After meeting the required assumptions for doing ANOVA (normality and homogeneity of variances), the following hypotheses were tested using ANOVA.

H_0: There is no significant difference in the adoption of environmental practices between two business sizes ($\mu_1=\mu_2$). It means that business size has had no effect on the adoption of environmental practices within the Ballarat area.

H_1: There is a significant difference in the adoption of environmental practices between two business sizes ($\mu_1\neq\mu_2$). It means that business size has had effects on the adoption of environmental practices within the Ballarat area.

Social Practices across Educational Levels

As Table 4.19 shows, the distribution of data is normal in two groups of undergraduate and postgraduate as the assigned p-values (Sig) are more than 0.05 so the null hypothesis of normal distribution is accepted in these groups. Table 4.19 shows that the obtained p-value in elementary group (0.024) is less than 0.05 indicating a violation of the assumption of normality. Since the number of cases in the elementary group is 74, so the violation of normality in this category does not affect the results of ANOVA as the sample size in this group is more than 30.

Table 4.19 Normality Test for Social Practices across Three Educational Levels

	Business Category	Hypothesis	Shapiro-Wilk			Result
			Statistics	df	Sig.	
Social Practices	Elementary	The data come from a normal distribution	0.961	74	0.024	Reject
	Undergraduate	The data come from a normal distribution	0.983	105	0.202	Accept
	Postgraduate	The data come from a normal distribution	0.972	40	0.412	Accept

Source: Author

To test homogeneity of variance, Levene's Test for equality of variances was performed. The results of this test revealed that data are suitable for doing ANOVA as the assumption of homogeneity of variances was satisfied. Levene Statistic was 1.428 and p-value was 0.242 greater than 0.05 (accepting null hypothesis of equal variances) (Pallant, 2013). After meeting the required assumptions for doing ANOVA (normality and homogeneity of variances), the following hypotheses were tested using ANOVA.

H_0: There is no significant difference in the adoption of social practices between three educational levels of owner/managers ($\mu_1=\mu_2=\mu_3$). It means that owner/managers' education has had no effect on the adoption of social practices within the Ballarat area.

H_1: There is a significant difference in the adoption of social practices between three educational levels of owner/managers ($\mu_1\neq\mu_2\neq\mu_3$). It means that owner/managers' education has had effects on the adoption of social practices within the Ballarat area.

Environmental Practices across Educational Levels

As Table 4.20 shows the distribution of data is not normal in three educational levels as the assigned p-values (Sig) are equal to or less than 0.05 so the alternative hypothesis of non-normal distribution is accepted indicating a violation of the assumption of normality. The violation of normality should not cause any major problem in groups with large enough sample sizes (more than 30). As the number of cases in three educational levels of elementary, undergraduate and postgraduate are 79, 114 and 40 respectively, so the violation

of normality in these groups does not affect the results of ANOVA as the sample size in these groups are more than 30.

Table 4.20 Normality Test for Environmental Practices across Three Educational Levels

	Business Category	Hypothesis	Shapiro-Wilk			Result
			Statistics	df	Sig.	
Environmental Practices	Elementary	The data come from a normal distribution	0.936	79	0.001	Reject
	Undergraduate	The data come from a normal distribution	0.947	114	0	Reject
	Postgraduate	The data come from a normal distribution	0.945	40	0.05	Reject

Source: Author

The results of homogeneity of variance test showed that data are suitable for doing ANOVA as the assumption of homogeneity of variances was satisfied. Levene Statistic was 2.282 and p-value was 0.104 greater than 0.05 (accepting null hypothesis of equal variances) (Pallant, 2013). After meeting the required assumptions for doing ANOVA (normality and homogeneity of variances), the following hypotheses were tested using ANOVA.

H_0: There is no significant difference in the adoption of environmental practices between three educational levels of owner/managers ($\mu_1=\mu_2=\mu_3$). It means that owner/managers' education has had no effect on the adoption of environmental practices within the Ballarat area.

H_1: There is a significant difference in the adoption of environmental practices between three educational levels of owner/managers ($\mu_1\neq\mu_2\neq\mu_3$). It means that owner/managers' education has had effects on the adoption of environmental practices within the Ballarat area.

Social Practices across Experience Levels

The assumption of the normality was tested and the obtained results showed that data distributions do not come from a normal population in two experience levels of 6-19 years and more than 19 years. As Table 4.21 shows in these groups, the obtained p-values (0.047 and 0.034) are less than 0.05 indicating a violation of the assumption of normality. Since the number of cases in these groups are 99 and 100 respectively, so the violation of normality in

these groups does not affect the results of ANOVA as the sample size in these groups are more than 30. Moreover the distribution of data in the experience level of 1-5 years is normal as the related p-value (Sig) is more than 0.05 (0.203) so the null hypothesis of normal distribution in this group is accepted.

Table 4.21 Normality Test for Social Practices across Three Experience Levels

	Business Size	Hypothesis	Shapiro-Wilk			Result
			Statistics	df	Sig.	
Social Practices	1-5 years	The data come from a normal distribution	0.936	20	0.203	Accept
	6-19 years	The data come from a normal distribution	0.974	99	0.047	Reject
	More than 19 years	The data come from a normal distribution	0.972	100	0.034	Reject

Source: Author

The results of homogeneity of variance test showed that data are suitable for doing ANOVA as the assumption of homogeneity of variances was satisfied. Levene Statistic was 2.329 and p-value was 0.1 greater than 0.05 (accepting null hypothesis of equal variances) (Pallant, 2013). After meeting the required assumptions for doing ANOVA (normality and homogeneity of variances), the following hypotheses were tested using ANOVA.

H_0: There is no significant difference in the adoption of social practices between three experience levels ($\mu_1=\mu_2=\mu_3$). It means that owner/managers' experience has had no effect on the adoption of social practices within the Ballarat area.

H_1: There is a significant difference in the adoption of social practices between three experience levels ($\mu_1\neq\mu_2\neq\mu_3$). It means that owner/managers' experience has had effects on the adoption of social practices within the Ballarat area.

Environmental Practices across Educational Levels

The assumption of the normality was tested and the obtained results showed that data distribution does not come from a normal population in two experience levels of 6-19 years and more than 19 years. As Table 4.22 shows in these groups, the obtained p-values (0.00) are less than 0.05 indicating a violation of the assumption of normality. Since the number of

cases in these groups are 102 and 108 respectively, so the violation of normality in these groups does not affect the results of ANOVA as the sample size in these groups are more than 30. Moreover the distribution of data in the experience level of less than 1 year up to 5 years is normal as the related p-value (Sig) is more than 0.05 (0.096) so the null hypothesis of normal distribution in this group is accepted.

Table 4.22 Normality Test for Environmental Practices across Three Experience Levels

	Business Size	Hypothesis	Shapiro-Wilk			Result
			Statistics	df	Sig.	
Environmental Practices	1-5 years	The data come from a normal distribution	0.927	23	0.096	Accept
	6-19 years	The data come from a normal distribution	0.938	102	0	Reject
	More than 19 years	The data come from a normal distribution	0.949	108	0	Reject

Source: Author

The results of homogeneity of variance test showed that data are suitable for doing ANOVA as the assumption of homogeneity of variances was satisfied. Levene Statistic was 1.463 and p-value was 0.234 greater than 0.05 (accepting null hypothesis of equal variances) (Pallant, 2013). After meeting the required assumptions for doing ANOVA (normality and homogeneity of variances), the following hypotheses were tested using ANOVA.

H_0: There is no significant difference in the adoption of environmental practices between three experience levels ($\mu_1=\mu_2=\mu_3$). It means that owner/managers' experience has had no effect on the adoption of environmental practices within the Ballarat area.

H_1: There is a significant difference in the adoption of environmental practices between three experience levels ($\mu_1\neq\mu_2\neq\mu_3$). It means that owner/managers' experience has had effects on the adoption of environmental practices within the Ballarat area.

4.3.4 Logistic Regression

In some research cases, the dependent variable of interest is categorical or dichotomous (such as yes/no; smoke/non-smoke), in these cases, the Logistic Regression is used to explore the relationship between the dependent variable and a number of independent variables

(predictors) (Pallant, 2013). So the main difference between logistic regression and multiple one is related to the dependent variable. If the dependent variable is a continuous one, the multiple regression is used but if the dependent variable is categorical and consists of two or more categories, the logistic regression must be used. Logistic regression tests models to predict categorical outcomes with two or more categories (Pallant, 2013). Logistic regression is more flexible than the other techniques. In logistic regression, the independent variables do not need to come from the normal distributions, they do not have to be linearly related to the dependent variable and they do not need to have an equal variance within each category or group (Tabachnick & Fidell, 2007).

There are three types of logistic regression: 1) Direct Logistic Regression, 2) Sequential Logistic Regression, and 3) Stepwise Logistic Regression (Tabachnick & Fidell, 2007). Direct logistic regression was used in this study and all predictors entered the equation at the same time (Pallant, 2013). According to Tabachnick and Fidell (2007), if there is no specific hypothesis about the order or importance of predictor variables, the direct logistic regression would be chosen by many researchers.

Logistic regression is relatively free of limitations and able to analyse a combination of continuous, discrete, and dichotomous predictors (Tabachnick & Fidell, 2007). However there are some assumptions which must be observed before performing this method. According to Pallant (2013), the following three assumptions of sample size, multicollinearity and outliers are the major assumptions of logistic regression:

Sample Size

The number of cases and predictors (independent variables) is one of the issues which must be considered before doing logistic regression. Pallant (2013) believes that a small sample size with the large number of predictors may cause a problem of the solution failing to converge. Moreover, the obtained results from a small sample size cannot generalise with other samples leading to low scientific value of the research. Stevens (2009) recommends 15 cases per each independent variable as the required sample size for doing logistic regression analysis. Based on Tabachnick and Fidell (2007), the number of cases (or sample size) must be >50+8n (where n is the number of predictors). This recommendation is followed by this study and the details of the adequate sample size are given in Sections 4.3.4.2-3.

Multicollinearity

In logistic regression it is ideal that the independent variables (predictors) are strongly related to the dependent variable but not strongly related to each other (Pallant, 2013). Multicollinearity refers to the relationship among the independent variables (when the predictors are strongly correlated) (Tabachnick & Fidell, 2007). According to Tabachnick and Fidell (2007, p. 445), the existence of multicollinearity is signalled by extremely large standard errors of parameters' estimates and/or failure of tolerance test in the computer run. In this study, the detail of checking for the absence of multicollinearity is provided in Sections 4.3.4.2-3.

Outliers

It is important to check for the presence of outliers before embarking on the logistic regression analysis. According to Pallant (2013, p. 167), an outlier is a case which is strongly predicted by the model to be one category but in reality it is classified in the other category. If there are enough outlier cases, the model has poor fit (Tabachnick & Fidell, 2007), so the outlying cases must be identified. These are found by inspecting the residuals which are the differences between the obtained and the predicted dependent variable scores (Pallant, 2013). The details of how to examine residuals to evaluate outliers are discussed in Sections 4.3.4.2-3.

Logistic regression assesses how well a set of predictor variables predicts or explains the categorical dependent variable (Pallant, 2013). This technique indicates the adequacy of the model by assessing 'Goodness of Fit'. It also examines the relative importance of each independent variable or the interaction among the independent variables by providing positive and negative predictive values (Tabachnick & Fidell, 2007). The procedure of doing logistic regression and interpreting the results are outlined in Chapter Five. However, the following subsections provide details on how the variables were prepared for the logistic regression.

4.3.4.1 Preparation of the Variables for Logistic Regression

As mentioned in earlier, in logistic regression, the dependent variable is a categorical (dichotomous) variable (Tabachnick & Fidell, 2007). In this study, whether SMEs are sustainable or non-sustainable was considered as dependent variable. For preparing the dependent variable, it was needed to recode the scale of social and environmental practices.

It may be recalled that in the "Social Practices" section of the survey questionnaire, it was asked from the respondents to specify how frequently they engage in the social practices using a 4-point Likert scale (see Appendix 3). This scale was recoded from 1 to 2 in the SPSS file, i.e. number 2 was assigned to "often", and "sometimes", and number 1 was assigned to "seldom", and "never". Then the total scale score for social and environmental practices was needed to be calculated (Pallant, 2013). It means that scores of social and environmental practices for each respondent consist of the addition of scores on each of the items related to social and environmental practices. The social practices scale is a 17-items scale with a response scale from 1 to 2. Hence the minimum value for the total score would be 17 because if a respondent answered 1 (Never or Seldom) to every item, that overall score would be 17×1=17 and the maximum value would be 34 as it means that a respondent answered 2 (Often or Sometimes) to each item (17×2=34). Same procedure was applied to the environmental practices scale as well. In the environmental practices section of the questionnaire, there are seven items with a response scale from 1 to 2, so the minimum and maximum values for the total score of environmental practices would be 7 and 14 respectively. It was also needed to recode the total score of social and environmental practices, as the dependent variable in the logistic regression must be a dichotomous one. For transforming the social and environmental practices to the dichotomous variables, the following steps (suggested by Pallant, 2013) were taken:

1. The median value of each practice was calculated. In this regard, the median value of social and environmental practices were 25.5 ((17+34)/2) and 10.5 ((7+14)/2) respectively.

2. The total score of social and environmental practices were recoded based on their median values. It means that for social practices, code 0 was assigned to the total scores of 17 to 25 and code 1 was assigned to the total scores of 26 to 34. For environmental practices, code 0 was assigned to the total scores of 7 to 10 and code 1 was assigned to the total scores of 11 to 14. Then code 0 was labelled as non-adoption of sustainability (No) and code 1 was labelled as adoption of sustainability (Yes).

Therefore, the dependent variable of social and environmental practices was transformed to a dichotomous variable with two categories of adoption of sustainability (Yes) and non-adoption of sustainability (No). For independent variables (predictors), it may be recalled that after doing factor analysis, SPSS created five columns of five factors extracted from this

analysis. All these five factors were considered as the independent variables in the logistic regression. To sum up, the dependent variable and independent (predictor) variables used for the logistic regression were as follows:

I. **Dependent Variable:** The adoption of social and environmental practices (with two categories of Yes and No)

II. **Independent Variables:** Factors affecting the adoption of sustainability. These factors include:

    1. Role of stakeholders in driving sustainability
    2. Instrumental drivers to strategic competitive advantage
    3. Negative perceptions on sustainability
    4. Intrinsic engagement for sustainable communities
    5. Resistance to change

The following subsections provide the details on how the assumptions of logistic regression were met in this study.

4.3.4.2 Assumptions of Logistic Regression for the Adoption of Social Practices

Three issues of sample size, multicollinearity and outliers were mentioned as the assumptions of doing logistic regression in earlier in this chapter. This subsection explains that how these assumptions were addressed in this study.

Based on the formula of Tabachnick and Fidell (2007), the number of cases (or sample size) must be >50+8n (where n is the number of predictors). In this study, the number of predictors were five, so the required sample size for doing logistic regression must be more than 90 (50+(8×5)=90). As Table 4.23 shows, 218 cases were included in the analysis indicating the adequate sample size for doing the logistic regression.

Table 4.23 Case Processing Summary of the Adoption of Social Practices

Cases	Number	Percent
Included in Analysis	218	93.6
Missing Cases	15	6.4
Total	233	100

Source: Author

The correlations between variables are provided in Table 4.24. Based on Pallant (2013) a correlation coefficient of 0.3 or above is preferable to find a relationship between independent variables and dependent variable. As shown in Table 4.24, all five factors correlated substantially with the adoption of social practices as all the related correlation coefficients were more than 0.3 (0.451, 0.361, 0.730, 0.411, and 0.422). As mentioned before in this chapter, the correlation between each of independent variables (predictors) should not be too high. According to Pallant (2013) two independent variables should not be included in the regression analysis if they have a correlation coefficient of 0.7 or above. In Table 4.24, all correlation coefficients of independent variables are less than 0.7, indicating the absence of multicollinearity.

Table 4.24 Correlation of Variables in the Adoption of Social Practices[7]

	Adoption of Social Practices	Factor One	Factor Two	Factor Three	Factor Four	Factor Five
Adoption of Social Practices	1.000	0.451	0.361	0.730	0.411	0.422
Factor One	0.451	1.000	0.414	0.508	0.496	0.412
Factor Two	0.361	0.414	1.000	0.369	0.475	0.417
Factor Three	0.730	0.508	0.369	1.000	0.397	0.393
Factor Four	0.411	0.496	0.475	0.397	1.000	0.368
Factor Five	0.422	0.412	0.417	0.393	0.368	1.000

Source: Author

According to Tabachnick and Fidell, (2007), SPSS provides 'collinearity diagnostics' on the independent variables. The result of this test is shown in Table 4.25. In this table, two values of Tolerance and Variance Inflation Factor (VIF) are provided. Based on Pallant (2013, p.156), 'Tolerance' is an indicator of how much of the variability of the specified independent variable is not explained by the other independent variables in the model. The correlations between independent variables are high, if the value of tolerance is less than 0.1, indicating the presence of multicollinearity (Pallant, 2013). Moreover, VIF values above 10

[7] Correlation coefficients are shown in this table by their absolute values.

indicate the presence of multicollinearity. VIF is the inverse of the tolerance value (1 divided by tolerance) (Pallant, 2013).

As shown in Table 4.25, the tolerance value for each independent variable was more than 0.1 (0.605, 0.681, 0.677, 0.648, and 0.725); therefore, the assumption of absence of multicollinearity was not violated. This was also supported by the VIF values which were well below the cut-off 10 (1.652, 1.469, 1.476, 1.543, and 1.380). These results supported the absence of multicollinearity based on the correlation coefficients in Table 4.24.

Table 4.25 Collinearity Diagnostics of Independent Variables in the Adoption of Social Practices

Predictor	Tolerance	VIF
Factor One	0.605	1.652
Factor Two	0.681	1.469
Factor Three	0.677	1.476
Factor Four	0.648	1.543
Factor Five	0.725	1.380

Source: Author

The presence of outliers can be detected by checking the Mahalanobis distances (Pallant, 2013). To identify which cases are outliers, the critical chi-square value must be determined using the number of independent variables as the degrees of freedom (Pallant, 2013, p.157). Using Tabachnick and Fidell's (2007) guidelines, the critical chi-square value with five independent variables (as there were five independent variables in this study) is 20.52. To find out if any of the cases had a Mahalanobis distance value more than 20.52, the maximum value of the Mahalanobis distance was compared to the critical value. The maximum value of the Mahalanobis distance was 20.63, which just slightly exceeds the critical value of 20.52 suggesting the absence of outliers in the regression model.

4.3.4.3 Assumptions of Logistic Regression for the Adoption of Environmental Practices

As mentioned before, based on the formula of Tabachnick and Fidell (2007), the number of cases (or sample size) must be >50+8n (where n is the number of predictors). In this study, the number of predictors were five, so the required sample size for doing logistic regression must be more than 90 (50+(8×5)=90). As Table 4.26 shows, 233 cases were included in the analysis indicating the adequate sample size for doing the logistic regression.

Table 4.26 Case Processing Summary of Adoption of Environmental Practices

Cases	Number	Percent
Included in Analysis	233	100
Missing Cases	0	0
Total	233	100

Source: Author

As shown in Table 4.27, all five factors correlated substantially with the adoption of environmental practices as all the related correlation coefficients were more than 0.3 (0.381, 0.372, 0.525, 0.432, and 0.643). Moreover, Table 4.27 shows that all correlation coefficients of independent variables were less than 0.7, indicating the absence of multicollinearity.

Table 4.27 Correlation of Variables in Adoption of Environmental Practices[8]

	Adoption of Environmental Practices	Factor One	Factor Two	Factor Three	Factor Four	Factor Five
Adoption of Environmental Practices	1.000	0.381	0.372	0.525	0.432	0.643
Factor One	0.381	1.000	0.414	0.508	0.496	0.412
Factor Two	0.372	0.414	1.000	0.369	0.475	0.417
Factor Three	0.525	0.508	0.369	1.000	0.397	0.393
Factor Four	0.432	0.496	0.475	0.397	1.000	0.368
Factor Five	0.643	0.412	0.417	0.393	0.368	1.000

Source: Author

As shown in Table 4.28, the tolerance value for each independent variable was more than 0.1 (0.605, 0.681, 0.677, 0.648, and 0.725); therefore, the assumption of absence of multicollinearity was not violated. This was also supported by the VIF values which were well below the cut-off 10 (1.652, 1.469, 1.476, 1.543, and 1.380). These results supported the absence of multicollinearity concluded based on the correlation coefficients in Table 4.27.

[8] Correlation coefficients are shown in this table by their absolute values.

Table 4.28 Collinearity Diagnostics of Independent Variables in Adoption of Environmental Practices

Predictor	Tolerance	VIF
Factor One	0.605	1.652
Factor Two	0.681	1.469
Factor Three	0.677	1.476
Factor Four	0.648	1.543
Factor Five	0.725	1.380

Source: Author

The maximum value of the Mahalanobis distance was 20.63, which just slightly exceeds the critical value of 20.52 suggesting the absence of outliers in the regression model.

4.3.4.4 Hypotheses Tested by Logistic Regression

After meeting the required assumptions for conducting Logistic Regression, the data were prepared for the required analyses. The following hypotheses are tested using Logistic Regression and the results obtained from the analysis are presented in the next chapter (Chapter Five).

H1: There is a significant relationship between the adoption of social and environmental practices and role of stakeholders in driving sustainability.

H2: There is a significant relationship between the adoption of social and environmental practices and instrumental drivers to strategic competitive advantage.

H3: There is a significant relationship between the adoption of social and environmental practices and negative perceptions on sustainability

H4: There is a significant relationship between the adoption of social and environmental practices and intrinsic engagement for sustainable communities.

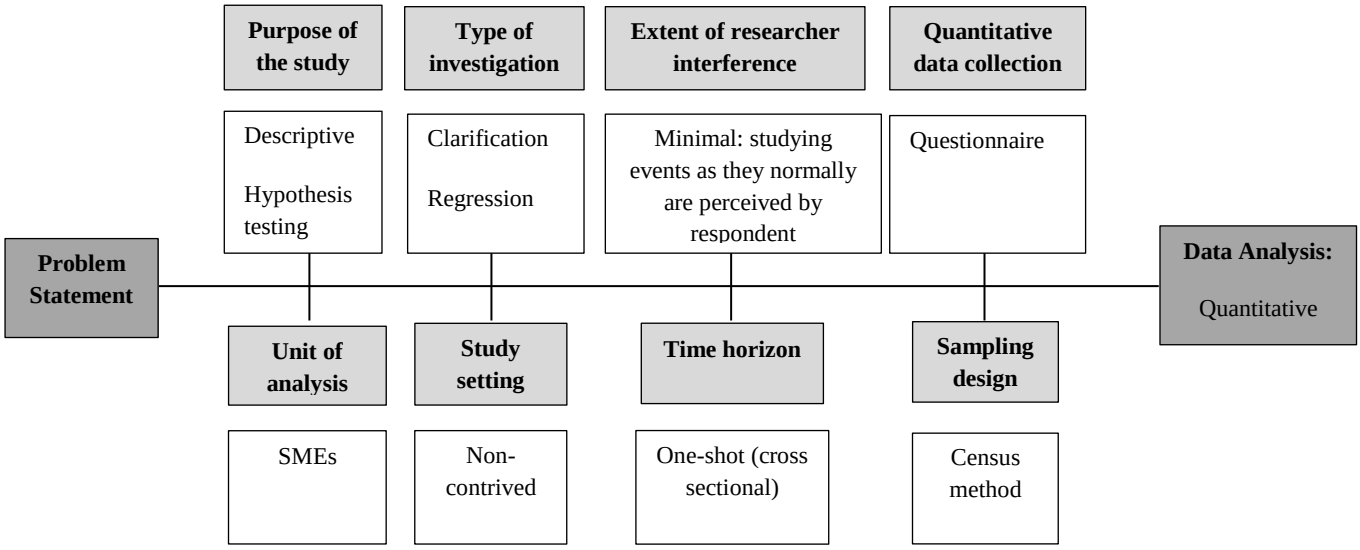
H5: There is a significant relationship between the adoption of social and environmental practices and resistance to change.

Before proceeding to Chapter Five, the following subsections provide the research design in this study and a summary of the current chapter.

4.4 Research Design

According to De Vaus (2001), the potential findings and results can be predicted before data collection provided that a high quality research design guides the research process. According to Cavana et al. (2001, p. 106), the research design involves issues relating to decisions regarding to the objectives of the study, the study context or where the study will be conducted, the extent of the researcher interference, the timeline of the study and the unit of the study. Figure 4.7 shows the research design in this study. As seen in this figure, the purpose of the study is twofold; descriptive and hypothesis testing.

Figure 4.7 Research Design: Details of the Study



Source: Adapted from Cavana et al. (2001, p. 107)

Hypothesis testing provides the researcher with a clear understanding of the relationship between variables. It usually describes the nature of the relationships between variables and determines the differences among the groups (Cavana et al., 2001). Hypothesis testing was done in this study to find out the relationship between sustainability adoption and the challenges SMEs face in embracing sustainability in Regional Australia.

Type of the investigation in this study is clarification and regression. After obtaining a clear understanding of the concepts involved in the research problem, a regression type of investigation was used. This is because when considering the relationships between variables, a regression equation shows that at least two variables move simultaneously (Cavana et al., 2001). Extent of the researcher's interference is minimal in this study. The researcher studied the variables as they are and there was no manipulation or control of the variables. Figure 4.7

shows that the study setting in this thesis was non-contrived as the research was carried out in the natural business situation not in an artificial setting like a laboratory (Cavana et al., 2001).

4.5 Summary

This chapter explained the research methods used in this research which examines the sustainable practices adopted by SMEs and investigates the factors affecting sustainability adoption by SMEs in a regional setting. This chapter discussed the quantitative methods and the detailed statistical techniques. Also, this chapter described that how the assumptions of the statistical techniques were met and the research design was implemented to address the research questions. The next chapter presents the data analysis which informs the social and environmental practices adopted by Ballarat area's SMEs and effective factors on the adoption of sustainability.

Chapter 5: Findings

5.1 Introduction

This chapter contains the quantitative analysis of the data gathered in this study and reports the results. It begins by examining the population frame's adopted social and environmental practices. It goes on to explore the factors affecting the sustainability adoption by the respondent SMEs and the significant differences in the adoption of social and environmental practices within SMEs with different demographic characteristics. In doing so, it focuses on the relationship between the adoption of social and environmental practices and the challenges SMEs face in embracing sustainability in the studied area. The Statistical Package for the Social Sciences (SPSS) version 20 was used for analysing the research data. After each section, a summary of the data analysis results is provided.

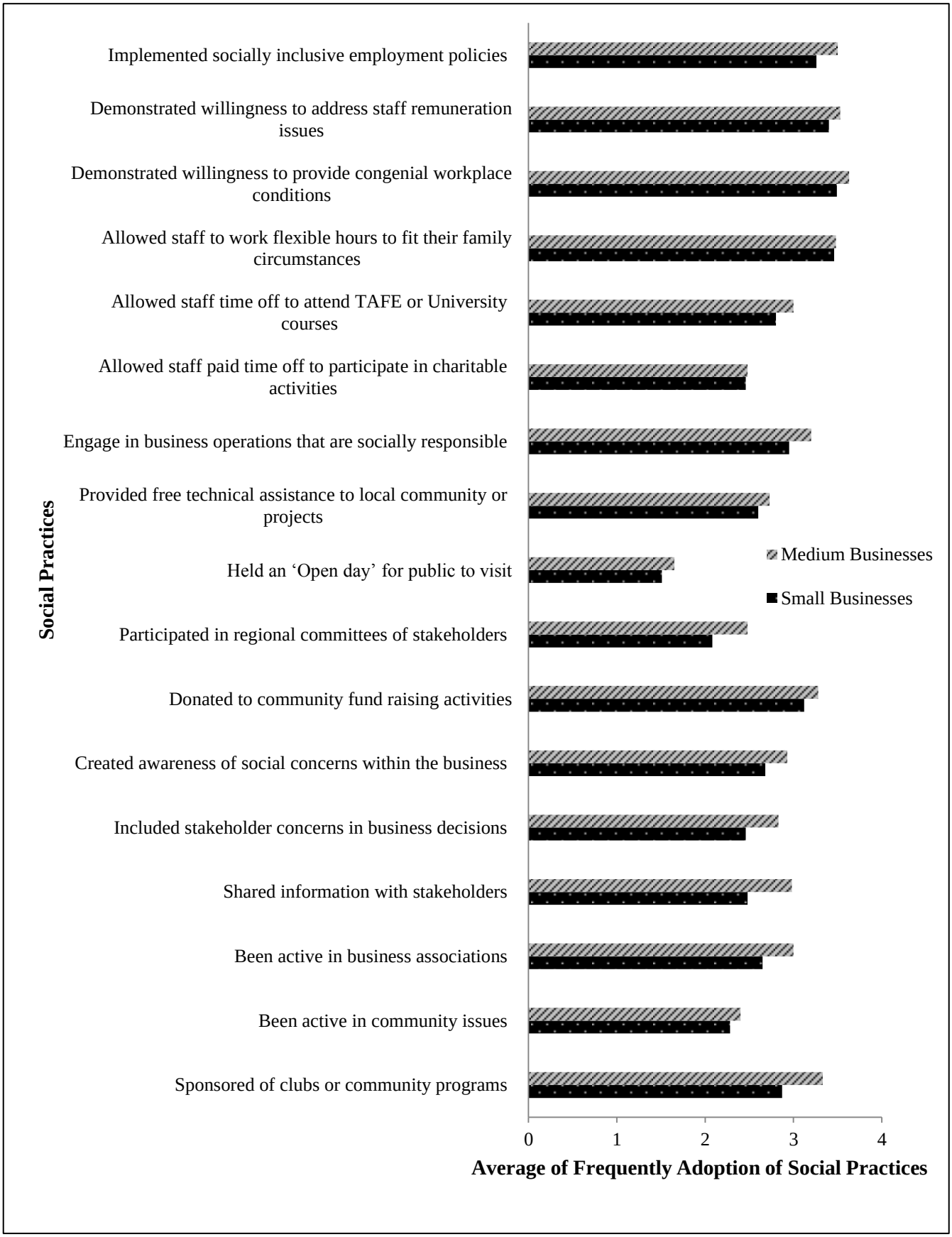
5.2 Descriptive Statistics

From the obtained data, descriptive statistics such as frequency, percentage, and mean were used in order to find the level of the SMEs owner/managers' most commonly adopted sustainability practices in their businesses. This addressed the research question one and also was used as the basis for analysing the groups with the demographics identified. Moreover some discussions are provided for the percentage of different levels of agreement of the respondents on internal and external factors affecting the sustainability adoption.

5.2.1 Social Practices

The survey provided some evidence of the extent of activity related to social and environmental concerns. Figure 5.1 highlights an average frequency of social practices that respondent businesses engaged in. In this figure horizontal axis represents the average score of a 4-point Likert scale related to social practices (often, sometimes, seldom and never) and vertical axis is related to different social practices adopted by SMEs (see Appendix 3). The differences between small and medium businesses are less pronounced in some of the socially related activities, although there are still important differences. According to Figure 5.1, medium sized businesses generally adopted social practices more than small businesses.

Figure 5.1 Social Practices of Respondents



Source: Author

As this figure shows, sponsoring clubs or community programs, being active in business associations, sharing information with stakeholders and including stakeholders concerns in business decisions seem to be greater in most medium sized businesses. More medium sized businesses also create awareness of social concerns within the business, participate in regional committees of stakeholders, and implement socially inclusive employment policies. However, to some extent, small businesses match medium sized businesses in being active in community issues, donating to community fund raising activities, providing free technical assistance to local community or projects, allowing staff time off to participate in charitable activities, and allowing staff to work flexible hours to fit their family circumstances. Not many businesses held an open day for public to visit.

In the "Social Practices" section of the survey questionnaire, it asked the respondents to specify how frequently they engage in the social practices using a 4-point Likert scale (see Appendix 3). This scale was coded from 1 to 4 in the SPSS file, i.e. number 4 was assigned to "often", 3 was assigned to "sometimes", 2 was assigned to "seldom", and 1 was assigned to "never". There are 11 non-employee based social practices in the first part of this section which relate to all respondent businesses. Table 5.1 is a summary of the respondents' answers to the social practices presented in the first part of this section.

Table 5.1 Frequency of Social Practices of all Businesses

Social Practices	How frequently				Mean
	Often	Sometimes	Seldom	Never	
Sponsoring clubs or community programs	85 (36.5%)	85 (36.5%)	29 (12.4%)	34 (14.6%)	2.95
Being active in community issues	44 (18.9%)	53 (22.7%)	66 (28.3%)	70 (30%)	2.30
Being active in business associations	57 (24.5%)	88 (37.8%)	52 (22.3%)	36 (15.5%)	2.71
Sharing information with stakeholders	58 (24.9%)	76 (32.6%)	39 (16.7%)	60 (25.8%)	2.57
Including stakeholder concerns in business decisions	53 (22.7%)	77 (33%)	38 (16.3%)	65 (27.9%)	2.51
Creating awareness of social concerns within the business	60 (25.8%)	81 (34.8%)	58 (24.9%)	34 (14.6%)	2.72
Donating to community fund raising activities	90 (38.6%)	102 (43.8%)	27 (11.6%)	14 (6%)	3.15
Participating in regional committees of stakeholders	28 (12%)	62 (26.6%)	61 (26.2%)	82 (35.2%)	2.15
Holding an 'Open day' for public to visit	16 (6.9%)	23 (9.9%)	36 (15.5%)	158 (67.8%)	1.56
Providing free technical assistance to local community or projects	48 (20.6%)	89 (38.2%)	50 (21.5%)	46 (19.7%)	2.60
Engaging in business operations that are socially responsible	97 (41.6%)	71 (30.5%)	37 (15.9%)	28 (12%)	3.02

Source: Author

The first statement is related to sponsoring clubs or community programs. As Table 5.1 shows, 85 respondents mentioned that they often engage in this activity whereas 29 of them mentioned they seldom adopt this activity. Since 170 businesses from all 233 respondents

engaged in this practice most of the time (often and sometimes), it could be concluded that this activity is one of the commonly adopted social practices of regional SMEs in the studied area. Research findings show Ballarat area businesses are not very active in community issues. As 28.3% of the respondents mentioned they seldom adopt this activity; while 30% of them never engaged in this practice. Most owner/managers were active in business associations because 24.5% of them often engage in this activity and 37.8% of them sometimes adopt this social practice. Further, 32.6% of the respondents sometimes shared information with stakeholders and 24.9% of them often did this practice. However, 25.8% of them never shared their business information with their stakeholders. The research finding for including stakeholder concerns in business decision is very similar to sharing information with stakeholders. As Table 5.1 highlights, 55.7% of the respondents often or sometimes included stakeholder concerns, while 16.3% of them seldom did it, and 27.9% of the owner/managers never adopted this social practice. 60.6% of the respondent businesses usually created awareness of social concerns within their businesses, whereas 24.9% of them seldom did it and 14.6% of them never adopted it. It is apparent that donation to community fund raising activities is a very commonly adopted practice among Ballarat area SMEs, as 82.4% of the respondents usually donated to community fund raising practices and only 6% of them never engaged in this activity and 11.6% of the businesses seldom adopted it. 35.2% of the respondent SMEs never participated in regional committees of stakeholders and 26.2% of them seldom engaged in it. Also only 12% of the respondents often participate in these committees. A high proportion of respondent owner/managers (67.8%) never held an open day for public to visit their businesses, and 15.5% of them seldom did it. In addition, just 16.8% of the respondents had an open day for public on a relatively regular basis. It seems that providing free technical assistance to local community or projects is a social activity which 58.8% of the respondents usually engaged in (often and sometimes) and 41.2% of them hardly engaged in it (seldom and never). Many Ballarat area SMEs (72.1%) engaged in business operations that (in their own view) are socially responsible (often and sometimes) and only 12% of them considered their operations as never being socially responsible.

Second part of the “Social Practices” section of the survey questionnaire is related to those businesses which have one or more employees because all six social practices in this part are related to employment policies. As mentioned before there were 12 respondents which had no employees in their businesses (see Table 4.4). Hence, from 233 respondents, 221 businesses

addressed six statements regarding their social practices in the second part of the "Social Practices" section and there were 12 (5.2%) missing responses in this part.

Table 5.2 Frequency of Social Practices of Businesses with One or More Employees

Social Practices	How frequently				Mean
	Often	Sometimes	Seldom	Never	
Allowed staff paid time off to participate in charitable activities	32 (13.7%)	91 (39.1%)	45 (19.3%)	53 (22.7%)	2.46
Allowed staff time off to attend TAFE or University courses	73 (31.3%)	78 (33.5%)	31 (13.3%)	39 (16.7%)	2.84
Allowed staff to work flexible hours to fit their family circumstances	134 (57.5%)	62 (26.6)	18 (7.7%)	7 (3%)	3.46
Demonstrated willingness to provide congenial workplace conditions	147 (63.1%)	49 (21%)	16 (6.9%)	9 (3.9%)	3.51
Demonstrated willingness to address staff remuneration issues	121 (51.9%)	79 (33.9%)	14 (6%)	7 (3%)	3.42
Implemented socially inclusive employment policies	115 (49.4%)	74 (31.8%)	16 (6.9%)	16 (6.9%)	3.30

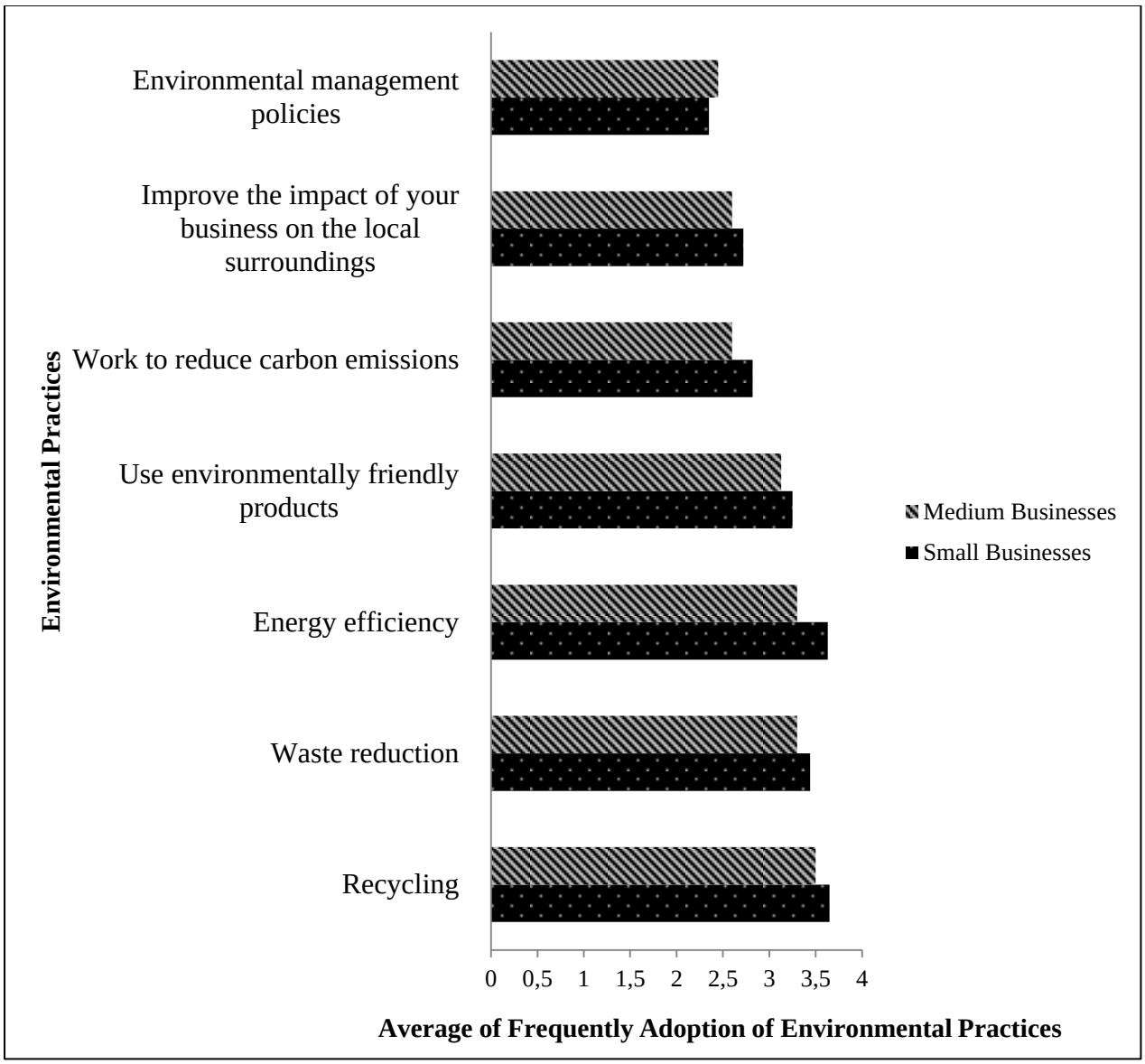
Source: Author

As Table 5.2 shows, 52.8% of businesses with one or more employees allowed their staff paid time off to participate in charitable activities (often and sometimes). 19.3% of them seldom engaged in this practice and 22.7% of them never adopted it. More than half of the respondents (64.8%) mentioned that they allow staff time off to attend TAFE or university courses (often and sometimes) while 13.3% of them seldom did it and 16.7% of them never allowed staff time off for training and formal education. It is clear that Ballarat area business owner/managers usually allow their staffs to work flexible hours to fit their family circumstances, as 84.1% of them engaged in this social practice regularly (often and sometimes) and only 10.7% of them did it rarely (seldom and never). Research findings highlight a high level of willingness to provide congenial workplace conditions among business owner/managers in the studied area, because 196 owner/managers from 221 respondents demonstrated this willingness on a regular basis (often and sometimes) and only 25 of them had weak willingness towards this activity (seldom and never). Moreover, 85.8% of the respondents demonstrated willingness to address staff remuneration issues (often and sometimes) and 9% of them refused to demonstrate this willingness (seldom and never). From the respondents, 81.2% implemented socially inclusive employment policies (often and sometimes) whereas only 6.9% of them did not implement such policies or implemented them rarely.

5.2.2 Environmental Practices

Like social practices, the survey provided some evidence of the extent of activity related to environmental concerns. Figure 5.2 shows an average frequency of environmental practices that respondent businesses engaged in. In this figure horizontal axis represents the average score of a 4-point Likert scale related to environmental practices (often, sometimes, seldom and never) and vertical axis is related to different environmental practices adopted by SMEs (see Appendix 3). Black and grey colours represent small and medium sized businesses respectively. The differences between small and medium businesses are less pronounced (c.f. social practices) in most of the environmentally related activities, although there are still some differences.

Figure 5.2 Environmental Practices of Respondents



Source: Author

Unlike social practices, environmental practices were more adopted by small businesses rather than medium sized businesses. Figure 5.2 shows that in almost all environmental practices, small businesses gained higher average score as black bars are usually higher than grey ones. The only exception is related to environmental management policies in which medium sized businesses engaged in clear environmental policies more frequently than small businesses. A higher proportion of small businesses adopted recycling, waste reduction, and energy efficiency programs. Also small businesses – more frequently than medium sized ones - adopted practices such as using environmentally friendly products (such as eco-cleaning products), working with green energy suppliers, and using products with minimal packages. Moreover, small businesses worked more frequently than medium sized businesses to reduce carbon emissions. As Figure 5.2 highlights, small businesses improved the impact of their businesses on the local surroundings more frequently than medium sized businesses. For example, small businesses calculated and reduced their carbon footprint and improved the external area of their premises more frequently than medium sized ones.

In the "Environmental Practices" section of the survey questionnaire, it asked respondents to specify how frequently they engage in environmental practices using a 4-point Likert scale (see Appendix 3). This scale was coded from 1 to 4 in the SPSS file i.e. number 4 was assigned to "often", 3 was assigned to "sometimes", 2 was assigned to "seldom", and 1 was assigned to "never". The respondents were asked about seven environmental practices in this section. Table 5.3 shows a summary of the respondents' answers to the environmental practices presented in this section.

Table 5.3 Frequency of Environmental Practices

Environmental Practices	How frequently				Mean
	Often	Sometimes	Seldom	Never	
Recycling	165 (70.8%)	54 (23.2%)	9 (3.9%)	5 (2.1%)	3.63
Waste reduction	131 (56.2)	72 (30.9%)	25 (10.7%)	5 (2.1%)	3.41
Energy efficiency	155 (66.5%)	61 (26.2%)	13 (5.6%)	4 (17%)	3.58
Use environmentally friendly products	106 (45.5%)	82 (35.2%)	37 (15.9%)	8 (3.4%)	3.23
Work to reduce carbon emissions	72 (30.9%)	68 (29.2%)	64 (27.5%)	29 (12.4%)	2.79
Improve the impact of your business on the local surroundings	64 (27.5%)	73 (31.3%)	57 (24.5%)	39 (16.7%)	2.70
Environmental management policies	44 (18.9%)	67 (28.8%)	53 (22.7%)	69 (29.6%)	2.37

Source: Author

As Table 5.3 shows, a high proportion of respondents (94%) engaged in recycling programs such as paper recycling, computer donation and avoiding disposable goods (often and

sometimes), while only 6% of the respondents never adopted this activity or engaged in it rarely (seldom and never). Waste reduction is another commonly used environmental practice which Ballarat area businesses engaged in. It is obvious from Table 5.3 that 87.1% of the respondent businesses adopted some waste reduction programs (often and sometimes) like adjusting printer settings to draft quality, avoiding duplication of papers at meetings, donating to charity rather than Christmas cards and only 12.8% of them refused to do them (seldom and never). From 233 respondents, 216 business owner/managers engaged in energy efficiency practices, such as turning down unnecessary heating, turning off equipment and lights and monitoring energy and water use. Whereas, 17 business owner/managers did not adopt any such activities or adopted them rarely (seldom and never). It is seen from Table 5.3 that 80.7% of the respondents used environmentally friendly products in their businesses (often and sometimes) and 19.3% of them never or seldom used this kind of products. Research findings show that 30.9% of the respondents often worked to reduce carbon emissions, while 29.2% of them sometimes did it and 39.9% of them adopted it rarely. Moreover, 58.8% of the Ballarat area businesses improved the impact of their businesses on the local surroundings occasionally (often and sometimes), 24.5% of them seldom did it and 16.7% of them never engaged in this environmental practice. As Table 5.3 shows the last item is adopting environmental management policies which was never adopted by 29.6% of the respondents and 22.7% of them seldom engaged in it. Also it was often and sometimes adopted by 18.9% and 28.8% of the respondents respectively.

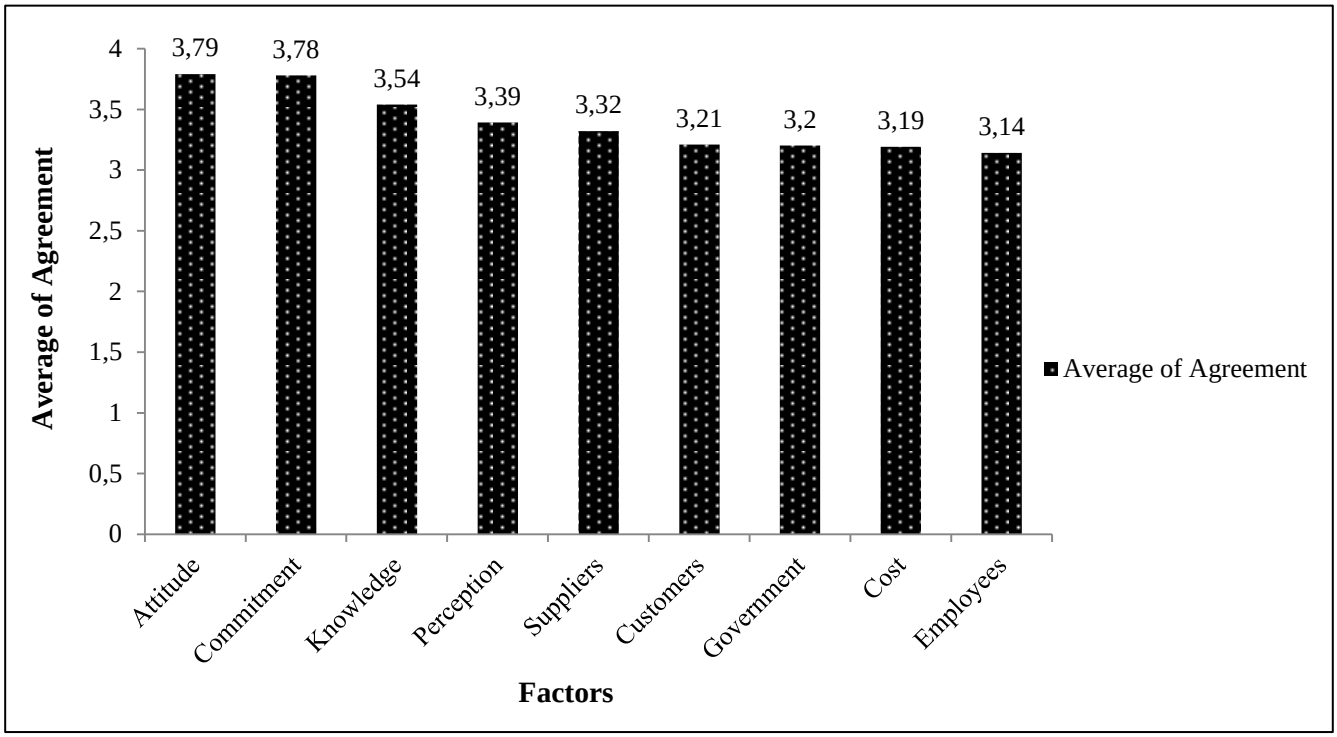
5.2.3 Internal and External Factors

In two last sections of the survey questionnaire ("Inside your firm" and "Outside influences on your firm"), it was asked from the respondents to specify their level of agreement with each of the provided statements using a 5-point Likert scale (see Appendix 3). This scale was coded from 1 to 5 in the SPSS file, i.e. number 5 was assigned to "strongly agree", 4 was assigned to "agree", 3 was assigned to "neutral", 2 was assigned to "disagree", and 1 was assigned to "strongly disagree". There are 23 statements in the section of "Inside your firm" and 11 statements in the section of "Outside influences on your firm" (see Appendix 3).

The survey provided some evidence of the extent of respondents' agreement on the internal and external factors affecting the sustainability adoption. Figure 5.3 shows the average of agreement of respondents with each statement regarding the internal and external factors

impacting adoption of sustainability in regional SMEs. In this figure, horizontal axis represents the internal and external factors affecting the SMEs' engagement with sustainability and vertical axis is related to the average score of a 5-point Likert scale related to the agreement of respondents on such factors (strongly agree, agree, neutral, disagree and strongly disagree) (see Appendix 3).

Figure 5.3 Effective Factors on the Adoption of Sustainability



Source: Author

As seen Figure 5.3, attitude, commitment and knowledge are three most effective factors on SMEs' engagement with sustainability. Also, cost and employees were recognised as the least effective factors. The following subsections discuss each factor in more details and present more insights into each factor.

Attitude

In this study attitude of the owner/managers towards sustainability issues was recognised as the most effective factor on the adoption of sustainable practices by Ballarat area's SMEs (see Figure 5.3). Table 5.4 shows a summary of the respondents view on the role of owner/managers attitude towards sustainability issues in the adoption of sustainability in regional SMEs. As shown in this table, the vast majority of the respondents (77.3% in 1st

row) agreed that engaging with sustainable practices gives them personal pride and enjoyment. Also, 88.4% (2nd row) of them believed that preserving the environment and respecting local community is the right thing to do. These findings show that Ballarat area's SMEs have a positive attitude towards the environment and local community.

Table 5.4 Role of Attitude in the Adoption of Sustainability

Item Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Contributing to protecting environment and supporting the local community gives me personal pride and enjoyment.	1.3%	3.9%	17.6%	55.4%	21.9%
Preserving the environment and respecting local community is simply the right thing to do.	0.9%	3.4%	7.3%	58.4%	30%

Source: Author

Commitment

As Table 5.5 shows, the vast majority of the respondents (71.7% in 1st row) agreed that business should regulate itself to improve environmental practices. Moreover 92.3% (2nd row) and 73.4% (3rd row) of the respondents believed that SMEs should ensure the health and safety of its employees and community, respectively. Furthermore, Table 5.5 shows that 63.5% (4th row) of the respondents agreed on the responsibility of owner/managers to have policies that help improve society.

Table 5.5 Role of Commitment in the Adoption of Sustainability

Item Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Business should regulate itself to improve environmental practices.	1.7%	7.3%	19.3%	53.2%	18.5%
Small firms should ensure the health and safety of its employees.	0.0%	2.1%	5.6%	44.2%	48.1%
Small firms should ensure the health and safety of its community.	0.4%	8.2%	18.0%	44.2%	29.2%
It is the responsibility of every business owner/manager to have policies that help improve society.	2.6%	13.7%	20.2%	49.8%	13.7%

Source: Author

Knowledge

According to Table 5.6, 67.8% (1st row) of the respondents know about the main source of electricity in their living areas. Also, the majority of them (57.1% in 2nd row) are aware of environmental protection programs organised by the government or external bodies. Moreover, 47.2% (3rd row) of the respondents agreed that sustainable businesses have the potential to break into new markets or promote existing markets.

Table 5.6 Role of Knowledge in the Adoption of Sustainability

Item Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I realise that most of the electricity in Victoria is produced by burning highly polluting brown coal.	0.9%	7.7%	23.6%	45.9%	21.9%
I am aware of environmental protection programs organised by the government or external organisations.	0.9%	15.9%	26.2%	48.1%	9.0%
Socially and environmentally responsible businesses have the potential to break into new markets or promote existing markets.	1.3%	13.3%	38.2%	40.3%	6.9%
Socially and environmentally responsible businesses achieve cost savings from energy or other resource efficiencies.	2.6%	12.9%	32.2%	44.2%	8.2%
Transition to a low-carbon economy will bring opportunities for business growth.	6.4%	18.0%	40.3%	25.8%	9.4%

Source: Author

Perception

Table 5.7 provides a summary of the respondents' view on the role of owner/managers' perception of environmental and social impact in the adoption of sustainability in regional SMEs. As shown in this table, 56.3% (1st row) of the respondents disagreed about their businesses' low impact on the local community and environment. However, 55.8% (2nd row) of the respondents believed that business owner/managers cannot be expected to help solve social problems. Also, 59.2% (4th row) of them agreed that their businesses do not make a

difference to the local community. These findings show that despite of the emphasis on the significant environmental and social impacts of Ballarat area's SMEs, they do not feel a significant responsibility towards the community and socially related issues. Such a perception of little responsibility towards the community make owner/managers resistant to changing their attitudes towards the society and social issues, leading to less sustainable practices being adopted by SME owner/managers.

Table 5.7 Role of Perception in the Adoption of Sustainability

Item Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My firm has low impact on the local community and environment.	20.2%	36.1%	15.5%	21.5%	6.9%
Business owners cannot be expected to help solve social issues.	4.3%	16.3%	23.6%	45.1%	10.7%
Environmental issues aren't relevant to my business.	5.2%	11.2%	18.5%	48.1%	17.2%
I'm not in the right industry to make a difference to local community.	4.3%	15.9%	20.6%	41.6%	17.6%

Source: Author

Moreover, Table 5.7 shows that the majority of respondents agreed that environmental issues are not relevant to their businesses (65.3% in 3rd row) and they are not expected to solve social issues (55.8% in 2nd row). It contradicts the finding that these firms disagree with the view that their firm has a low impact on the local community and its environment, as felt by majority of respondents (56.3% in 1st row). The reason may be related to the misunderstanding of the statements or they may mean that despite of the environmental impacts of their businesses, they are not supposed to solve such problems and other bodies like environmental bodies or government are responsible for solving social and environmental issues. This requires further investigation.

Suppliers

As shown in Figure 5.3, suppliers were recognised as the most effective external group in sustainability adoption by Ballarat area's SMEs. Table 5.8 provides a summary of the respondents view on the role of suppliers in the adoption of sustainability in Ballarat area's

SMEs. As shown in this table, majority of respondents (57% in 1st row) agreed that socially and environmentally responsible businesses have the potential to minimise the risk of damage to their own reputation by dealing with socially responsible suppliers. Also, 42.1% (in 2nd row) of them agreed that suppliers and trade bodies could impose pressure on businesses to adopt sustainable practices.

Table 5.8 Role of Suppliers in the Adoption of Sustainability

Item Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Socially and environmentally responsible businesses can minimise the risk of damage to their own reputation by dealing with socially responsible suppliers.	3.4%	7.7%	31.8%	47.6%	9.4%
Suppliers and trade bodies should put pressure on businesses to be socially and environmentally friendly.	8.6%	17.2%	32.2%	36.9%	5.2%

Source: Author

Customers

As Table 5.9 shows, 46.3% (2nd row) of the respondents agreed that customers could put a pressure on businesses to preserve the natural environment. Moreover, 56.3% (3rd row) of the respondents agreed that there is an increased public demand for ethical products and services.

Table 5.9 Role of Customers in the Adoption of Sustainability

Item Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Businesses with sound environmental management practices are well supported by customers.	5.6%	16.7%	42.5%	31.8%	3.4%
Pressure from existing customers could force businesses to preserve the natural environment.	6.4%	16.7%	30.5%	41.6%	4.7%
There is an increased public demand for ethical products and services.	4.3%	10.7%	28.8%	48.1%	8.2%
Being socially and environmentally responsible attracts new customers.	7.7%	17.6%	33.5%	33.5%	7.7%

Source: Author

Government

As Figure 5.3 shows, compared to suppliers, government is not a strong driver for the adoption of sustainability by regional SMEs. Table 5.10 shows the view of respondents regarding the role of government in the adoption of sustainability by regional SMEs. 78.9% (1st row) of the respondents believed that government should offer some form of recognition of businesses that have good environmental management practices.

Table 5.10 Role of Government in the Adoption of Sustainability

Item Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Government should offer some form of recognition of businesses that have good environmental management practices.	0.00%	5.6%	15.5%	56.2%	22.7%
It is not the individual responsibility of business owner/managers to solve environmental problems.	12.4%	27.9%	25.8%	30.9%	3.0%
National and local environmental laws and regulations should be strictly enforced in the business context.	4.7%	12.0%	30.9%	42.5%	9.9%
Small businesses should leave the government to tackle environmental issues.	5.6%	24.9%	27.5%	35.6%	6.4%
It's better that government enforces environmental taxes for businesses.	13.7%	29.2%	37.3%	16.7%	3.0%

Source: Author

While 40.3% (2nd row) of the respondents agreed that solving environmental problems is the individual responsibility of owner/manager, 52.4% (3rd row) of them believed that national and local environmental regulations should be strictly enforced in the business context. In this study, 42% (4th row) of the respondents agreed that SMEs should leave the government to tackle environmental issues and 80.2% (5th row) of them disagreed or were neutral about enforcing the environmental taxes by the government in the business context.

Cost

In this study, 35.2% (1st row) of the respondents agreed that the adoption of sustainable practices increases their business cost (Table 5.11). Also Table 5.11 shows that more than half of the respondents (64.3% in 2nd row) agreed that their regional infrastructure limits support for sustainable activities. In addition, Table 5.11 shows that 42.5% (3rd row) of the respondents agreed that there are no financial benefits from the adoption of sustainable practices. Also more than half of them (55.8% in 4th row) believed that the adoption of such practices needs some money and efforts to be spent by SMEs.

Table 5.11 Role of Cost in the Adoption of Sustainability

Item Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Being environmentally and socially friendly increases my business costs.	6.4%	33%	25.3%	26.2%	9.0%
My business has poor infrastructure to support some activities like recycling.	3%	16.3%	16.3%	47.6%	16.7%
My business will not benefit financially from environment-friendly activities.	9.4%	25.3%	22.7%	31.3%	11.2%
Business must spend some money and efforts for environmental protection and management.	4.3%	13.3%	26.6%	46.4%	9.4%

Source: Author

Employees

In this study employees were recognised as the least effective factor on the adoption of sustainable practices by Ballarat area's SMEs (see Figure 5.3). Table 5.12 provides a summary of the respondents' view on the role of employees in the adoption of sustainability in regional SMEs. As shown in this table, 40.4% (1st row) of the respondents agreed on the ability of sustainable businesses to attract and retain staff. Furthermore, as seen in Table 5.12, only 33.9% (2nd row) of the respondents agreed that employees should put a pressure to engage with sustainability.

Table 5.12 Role of Employees in the Adoption of Sustainability

Item Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Socially and environmentally responsible businesses are able to attract and retain staff.	6.4%	10.3%	42.9%	31.8%	8.6%
Staff and employees should put pressure on businesses to be socially and environmentally friendly.	10.7%	19.7%	35.6%	27.5%	6.4%

Source: Author

All the internal and external factors were examined using descriptive statistics. However, for obtaining more reliable picture about the effective factors on the sustainability adoption by Ballarat area's SMEs, more reliable findings are needed to present. For this purpose, the following section presents the findings obtained from the factor analysis conducted in this study to find answer for the second research question (see Figure 4.1).

5.3 Factor Analysis

This section presents the results obtained from factor analysis performed on data collected in each of the two parts of internal factors (Inside your firm) and external factors (Outside influences on your firm) of the survey questionnaire (see Appendix 3). The analysis was performed using the statistical software SPSS for Windows Version 20.

Before conducting factor analysis, the gathered data from some parts of the survey questionnaire were re-coded, because some statements in the two last sections of the survey questionnaire are negative ones and some of them are positive ones. For example, the first statement in the "Inside your firm" section of the survey questionnaire is "My firm has low impact on the local community and environment" which is a negative statement so its coding should be inverted in order to homogenise its semantic direction with all other statements (Pallant, 2013). Therefore, for this statement and other negative ones, number 5 was assigned to "strongly disagree", 4 was assigned to "disagree", 3 was assigned to "neutral", 2 was assigned to "agree", and 1 was assigned to "strongly agree".

5.3.1 Variables of Components

As mentioned before (in Chapter Four), the highest loading items (without considering their signs) on each component were monitored to identify and label the component (see Table 4.11). The variables (item statements) that clustered under component one are given in Table 5.13.

Table 5.13 Item Statements of Component One

Item Statement	Item Loading
Businesses with sound environmental management practices are well supported by customers	0.843
There is an increased public demand for ethical products and services	0.837
Pressure from existing customers could force businesses to preserve the natural environment	0.818
Being socially and environmentally responsible attracts new customers	0.725
Suppliers and trade bodies should put pressure on businesses to be socially and environmentally friendly	0.684
Socially and environmentally responsible businesses can minimise the risk of damage to their own reputation by dealing with socially responsible suppliers	0.585
Socially and environmentally responsible businesses are able to attract and retain staff	0.487
Staff and employees should put pressure on businesses to be socially and environmentally friendly	0.469

Source: Author

According to Table 5.13, the variables clustering as component one were supporting sustainable businesses by customers (0.843), existence of a public demand for sustainable services and products (0.837), putting pressure on business by customers to adopt sustainability (0.818), ability of sustainable businesses to attract new customers (0.725), putting pressure on business by suppliers to adopt sustainability (0.684), minimising the risk of damage to the business reputation by dealing with sustainable suppliers (0.585), ability of sustainable businesses to attract and retain staff (0.487), and putting pressure on business by employees to adopt sustainability (0.469). All together this component explained 30.870% of the total variance.

Table 5.14 highlights that the variables clustering under component two were identified as awareness of the potential to break into new markets for sustainable businesses (0.683), awareness of achieving cost saving from resource efficiencies for sustainable businesses (0.677), awareness of environmental protection programs organised by the government or external organisations (0.654), having knowledge about the main source of electricity (0.469), and awareness of opportunities for business growth due to transition to a low-carbon economy (0.437). These five variables together as component two explained 6.996% of the variance.

Table 5.14 Item Statements of Component Two

Item Statement	Item Loading
Socially and environmentally responsible businesses have the potential to break into new markets or promote existing markets	0.683
Socially and environmentally responsible businesses achieve cost savings from energy or other resource efficiencies	0.677
I am aware of environmental protection programs organised by the government or external organisations	0.654
I realise that most of the electricity in Victoria is produced by burning highly polluting brown coal	0.520
Transition to a low-carbon economy will bring opportunities for business growth	0.437

Source: Author

As Table 5.15 shows, the variables with high loadings on component three were identified as perception of low impact on the local community and environment (0.781), disaffiliation of local community issues with small businesses (0.761), disaffiliation of environmental issues with small businesses (0.756), no expectation of small business's owner/managers in solving social issues (0.683), and considering society improvement as a responsibility of business owner/managers (0.450). All together this component explained 6.048% of the variance.

Table 5.15 Item Statements of Component Three

Item Statement	Item Loading
My firm has low impact on the local community and environment	-0.781
I'm not in the right industry to make a difference to local community	-0.761
Environmental issues aren't relevant to my business	-0.756
Business owners cannot be expected to help solve social issues	-0.683
It is the responsibility of every business owner/manager to have policies that help improve society	-0.450

Source: Author

Table 5.16 shows that considering environmental protection and respecting the local community as right things to do (0.669), ensuring the health and safety of the community (0.655), ensuring the health and safety of employees (0.585), considering business regulation as a tool for improving environmental practices (0.549), and considering environmental protection and supporting the local community as personal prides (0.492). All together they were clustered as variables under component four which explained 4.407% of the variance.

Table 5.16 Item Statements of Component Four

Item Statement	Item Loading
Preserving the environment and respecting local community is simply the right thing to do	-0.669
Small firms should ensure the health and safety of its community	-0.655
Small firms should ensure the health and safety of its employees	-0.585
Business should regulate itself to improve environmental practices	-0.549
Contributing to protecting environment and supporting the local community gives me personal pride and enjoyment	-0.492

Source: Author

According to Table 5.17, poor infrastructure to support sustainability practices (0.556), non-profit environmentally friendly activities (0.545), spending money for environmental protection by businesses (0.435), and increasing cost due to being sustainable (0.425) were identified as related variables to component five, explaining 4.083% of the variance.

Table 5.17 Item Statements of Component Five

Item Statement	Item Loading
My business has poor infrastructure to support some activities like recycling	-0.556
My business will not benefit financially from environment-friendly activities	-0.545
Business must spend some money and efforts for environmental protection and management	-0.435
Being environmentally and socially friendly increases my business costs	-0.425

Source: Author

5.3.2 Naming of Factors

The variables (item statements) that clustered under each of the five factors are given in Table 5.18. As shown in this table, the five factors were named as role of stakeholders in driving sustainability, instrumental drivers to strategic competitive advantage, negative perceptions on sustainability, intrinsic engagement with sustainable communities and resistance to change respectively. The subsections that follow show the names given to each factor and the explanations for why they were named as such.

Table 5.18 Factors' Name and Clustered Variables

Factor Name	Variable	Loading
Role of Stakeholders in Driving Sustainability (30.870%)	Businesses with sound environmental management practices are well supported by customers	0.843
	There is an increased public demand for ethical products and services	0.837
	Pressure from existing customers could force businesses to preserve the natural environment	0.818
	Being socially and environmentally responsible attracts new customers	0.725
	Suppliers and trade bodies should put pressure on businesses to be socially and environmentally friendly	0.684
	Socially and environmentally responsible businesses can minimise the risk of damage to their own reputation by dealing with socially responsible suppliers	0.585
	Socially and environmentally responsible businesses are able to attract and retain staff	0.487
	Staff and employees should put pressure on businesses to be socially and environmentally friendly	0.469

Factor Name	Variable	Loading
Instrumental Drivers to Strategic Competitive Advantage (6.996%)	Socially and environmentally responsible businesses have the potential to break into new markets or promote existing markets	0.683
	Socially and environmentally responsible businesses achieve cost savings from energy or other resource efficiencies	0.677
	I am aware of environmental protection programs organised by the government or external organisations	0.654
	I realise that most of the electricity in Victoria is produced by burning highly polluting brown coal	0.520
	Transition to a low-carbon economy will bring opportunities for business growth	0.437
Negative Perceptions on Sustainability (6.048%)	My firm has low impact on the local community and environment	-0.781
	I'm not in the right industry to make a difference to local community	-0.761
	Environmental issues aren't relevant to my business	-0.756
	Business owners cannot be expected to help solve social issues	-0.683
	It is the responsibility of every business owner/manager to have policies that help improve society	-0.450
Intrinsic Engagement for Sustainable Communities (4.407%)	Preserving the environment and respecting local community is simply the right thing to do	-0.669
	Small firms should ensure the health and safety of its community	-0.655
	Small firms should ensure the health and safety of its employees	-0.585
	Business should regulate itself to improve environmental practices	-0.549
	Contributing to protecting environment and supporting the local community gives me personal pride and enjoyment	-0.492
Resistance to Change (4.083%)	My business has poor infrastructure to support some activities like recycling	-0.556
	My business will not benefit financially from environment-friendly activities	-0.545
	Business must spend some money and efforts for environmental protection and management	-0.435
	Being environmentally and socially friendly increases my business costs	-0.425

Source: Author

Factor One

The variables clustering together as factor one were distinguished as drivers in sustainability adoption by regional SMEs. Some of the items clustered in this factor act as attractive drivers for the adoption of sustainability. For example, items such as "businesses with sound environmental management practices are well supported by customers", "being socially and environmentally responsible attracts new customers", "socially and environmentally

responsible businesses can minimise the risk of damage to their own reputation be dealing with socially responsible suppliers", and "socially and environmentally responsible businesses are able to attract and retain staff" operate as attractions or pull owner/managers to adopt sustainability. On the other hand, some of the clustered items in this factor act as a pressure or push to adopt sustainability. For example, items such as "there is an increased public demand for ethical products and services", "pressure from existing customers could force businesses to preserve the natural environment", "suppliers and trade bodies should put pressure on businesses to be socially and environmentally friendly", and "staff and employees should put pressure on businesses to be socially and environmentally friendly" operate as pressures or push owner/managers to adopt sustainability. So this factor is a combination of pull and push factors from customers, suppliers and employees which affect sustainability adoption by regional SMEs.

Revell et al. (2010) report that owner/managers are encouraged to adopt sustainability not just by "push of legislation" but also by the "pull of cost saving, new customers, higher staff retention and good publicity for their firm" (Revell et al., 2010, p. 273). It means that SMEs are small enough to develop close relationships with their customers, so they can depict the value of sustainable services and products to their customers (Kerr, 2006; Aragon-Correa et al., 2008). Consistent with Revell et al. (2010)'s perspective, Wells (2011) argues that if businesses want to be successful, they should respond to the sustainability challenges because customers evaluate a firm based on the sustainable practices. Furthermore, Rutherfoord et al. (2000) believe that suppliers should encourage adoption of sustainability practices by SMEs. This creates pressure on SME owner/managers to follow sustainability principles (Drake et al., 2004). Also, according to Dunphy et al. (2007) achieving strategic sustainability depends on meeting the needs and interests of different stakeholders. Collins et al. (2010) argue that businesses are requested by customers to adopt sustainability issues.

As Table 5.18 shows factor one explains 30.87% of the total variance confirming the prominent role of stakeholders including customers, suppliers and employees in regional SMEs to adopt sustainability. Hence this factor was named as "Role of Stakeholders in Driving Sustainability".

Factor Two

The variables clustering under factor two can be identified as instrumental drivers to achieve sustainability advantage. As Table 5.18 shows this factor explains 6.7% of the total variance and acts as a driver to adopt sustainability in regional SMEs. This factor refers to some instrumental incentives which affect sustainability adoption by regional SMEs. For example, having potential to break into new markets or promote existing markets, achieving cost savings from energy or other resource efficiencies, and bringing opportunities for business growth due to transition to a low-carbon economy are some instrumental motivators which influence SMEs' owner/managers to adopt sustainability.

The awareness of sustainability in the community is developed by education, leading to increase in the demand for environmental products and services (Hillary, 2004). In other words, it is desirable that environmental education strategies and programs extend to cover local business communities and SMEs (Potts, 2010) in order to promote owner/managers' knowledge level about the sustainability. As shown in Table 5.18, awareness of environmental protection programs organised by the government or external organisations and knowledge about the main source of electricity production are other variables clustered under factor two. These items are related to the management's knowledge about sustainability issues which is reported as an important motivator to the adoption of sustainability in the study of Collins et al. (2010). In general, environmental knowledge at public, private and community level plays an important role in generating support and ideas which lead to the creation of sustainable business (Drake et al., 2004).

The above discussion justifies how the five variables in factor two were recognised as the instrumental drivers to adopt sustainability and why the factor was given the name of the "Instrumental Drivers to Strategic Competitive Advantage".

Factor Three

The items statements or variables grouped under factor three were found to be related to the negative perceptions of owner/managers on their ability or responsibility to adopt sustainability. There are five variables which explain 6.04% of the total variance and act as inhibitors to adopt sustainability by regional SMEs.

As expressed in the literature, management's attitudes and perceptions play a prominent role in the adoption of sustainability by SMEs. In some cases, the owner/managers of SMEs feel

little responsibility towards the environment and society because they think that their businesses have insignificant individual effect on the environment (Yu & Bell, 2007). In other words, owner/managers of SMEs usually ignore the environmental impact of their enterprises due to what such SMEs perceive as little or negligible environmental impact that each individual SME contributes (Hillary, 1995; Ammenberg & Hjelm, 2003; Simpson et al., 2004; Revell et al., 2010). This supports Bos-Brouwers (2010) who has specified SMEs' perception of little individual impact on the environment as the primary barrier to SMEs' sustainability.

As shown in Table 5.18, items such as "my firm has low impact on the local community and environment", "I'm not in the right industry to make a difference to local community", "environmental issues aren't relevant to my business", and "business owners cannot be expected to help solve social issues" are related to the perception of owner/managers on their inability to create a sustainable business. Moreover, the last item in this factor is related to the responsibility of owner/managers to have policies that help improve society. As mentioned by Gadenne et al. (2009), there is a positive correlation between owner/managers responsibility towards the community and environment and their effort to adopt sustainability. Therefore, factor three was given the name of "Negative Perception on Sustainability".

Factor Four

The variables in factor four were found to refer to the commitment of owner/managers towards the local community and environment. They were intended to measure a respondent's personal belief on the sustainability issues in his or her own business. This factor explains 4.41% of the total variance and acts as a driver to the sustainability adoption. The variables have roots in extant literature concerning personal responsibility and commitment of the owner/managers toward the sustainable community (Hillary, 1995; Naffziger & Montagno, 2003; Roberts et al., 2006; Lawrence et al., 2006; Gadenne, et al., 2009).

As shown in Table 5.18, items such as "preserving the environment and respecting local community is simply the right thing to do" and "contributing to protecting environment and supporting the local community gives me personal pride and enjoyment" are referred to the owner/managers' commitment towards the sustainable communities. Since preserving the environment is considered as an ethical issue, so some owner/managers adopt sustainability

in their management processes due to their personal belief and commitment to their local community and environment, regardless of regulation pressure or financial benefits from sustainability adoption. Kerr (2006) believes that the key factor for the SMEs engagement with sustainability is that owner/managers provide a business culture to achieve environmental and social improvement. This culture should formulate environmental and social objectives, and encourage employees to have positive attitudes towards sustainability issues.

Furthermore, items such as "small firms should ensure the health and safety of its community", "small firms should ensure the health and safety of its employees", and "business should regulate itself to improve environmental practices" are related to the responsibility of the owner/managers towards the society. There is a positive correlation between owner/managers' individual concerns and their expending time and resources on sustainability (Naffziger & Montagno, 2003; Roberts et al., 2006). Considering above discussion, it was decided to name the factor as "Intrinsic Engagement for Sustainable Communities".

Factor Five

The variables clustered under factor five were related to the owner/managers' perception of costs that are imposed to the businesses by sustainability adoption. In this factor, there are four items explaining 4.08% of the total variance. This factor acts as an inhibitor for the sustainability adoption by regional SMEs. All items in this factor show the owner/managers' resistance to adopt sustainability. As mentioned by Dunphy et al. (2007), the first phase in their "Sustainability Phase Model" is rejection which shows no commitment to sustainable development. For example, owner/managers in this phase reject the sustainability adoption because they think that their businesses have poor infrastructure to support sustainability, sustainability adoption will not bring benefits for their businesses, and sustainability adoption will increase their costs and need some money and effort.

SMEs usually do not have enough expertise and understanding of the environmental strategies and standards (Welford, 1994; Tilley, 1999; Ammenberg & Hjelm, 2003; Simpson et al., 2004; Bos-Brouwers, 2010). Lack of expertise in environmental, technical and financial management (Borga et al., 2009), knowledge and information about sustainability (Del Brio & Junquera, 2003) and enough tools and resources to deal with environmental

issues (Revell et al., 2010; Roxas & Chadee, 2012) likely to make the owner/managers of SMEs resist adopting sustainability. SME operators usually reject implementation of sustainability principles, as it increases business costs (Revell & Blackburn, 2007; Bos-Brouwers, 2010). In general, owner/managers of SMEs have a negative attitude towards the financial returns from sustainability investments (Petts et al., 1998; Revell & Rutherfoord, 2003; Bos-Brouwers, 2010; Revell et al., 2010) which tends to make them not adopt sustainability. Thus, factor five was assigned the name of "Resistance to Change".

5.3.3 Reliability of the Factors

After completing the stage of factor rotation and interpretation, reliability of each factor was estimated in terms of internal consistency. Tabachnick and Fidell (2007) explain that estimation of reliability of a factor refers to the degree to which its variables are measuring the same concept. According to Pedhazur and Schmelkin (1991), reliability based on internal consistency provides a practical approach for estimating the reliability of factors. It indicates how much the variables are homogeneous. Measuring the homogeneity of variables is argued to be intuitively meaningful and useful, when dealing with a factor that has a theoretical frame of reference (Pedhazur & Schmelkin, 1991). According to Pedhazur and Schmelkin (1991), Cronbach's alpha coefficient (α) is an indicator most often used in the estimation of internal consistency. Nunnally (1978) recommends that Cronbach's α must be at least 0.7 for a factor to be accepted as reliable. In this study, SPSS was used to estimate the Cronbach's alphas.

Table 5.19 Estimation of Reliability of the Factors

Name of the Factor	Number of Items	Cronbach's α
Role of Stakeholders in Driving Sustainability	8	0.886
Instrumental Drivers to Strategic Competitive Advantage	5	0.765
Negative Perceptions on Sustainability	5	0.772
Intrinsic Engagement for Sustainable Communities	5	0.780
Resistance to Change	4	0.763

Source: Author

Table 5.19 shows the Cronbach's α for all the factors. It is indicated that the factors were reliable in relation to internal consistency, i.e. the variables in a factor would measure the same concept.

5.4 Analysis of Variance (ANOVA)

This section examines the impact of business categories, business age, business size, and owner/managers' education and experience levels on social and environmental practices adopted by SMEs in Ballarat area with a view to gain insights into the research problems outlined earlier in Chapter One. One-way Analysis of Variance (ANOVA), a statistical technique, was used to examine the issues.

The following subsections provide the results of one-way ANOVA to examine whether or not business category, business age, business size, owner/managers' education and experience levels had a significant impact on the adoption of social and environmental practices. As mentioned in Chapter Four, ANOVA is based on the mean scores of a factor (dependent variable) in several groups, where the groups are created on the basis of an independent variable (Tabachnick & Fidell, 2007). When business category, business age, business size, or owner/managers' education and experience levels make a major impact on the dependent variables (social and environmental practices), a significant difference between the highest and lowest mean scores of the dependent variables can be noted. In this study, the significant differences were identified by the Post Hoc Comparison test (Pallant, 2013). It was followed by an explanation for the significant difference in the two groups drawing from the extant literature. Moreover, the strength of relationship between an independent variable and its dependent variable was evaluated by an index namely Effect Size, which indicates the amount of total variance in a dependent variable that is predictable from the knowledge of an independent variable (Pallant, 2013). Since the Effect Size is not provided by SPSS for Windows, the statistical software used in this study, Pallant (2013) explains how to roughly estimate the Effect Size from an index named η^2 (eta squared). The calculation of η^2 was explained in Chapter Four. As mentioned in Chapter Four, an independent variable has a small effect on groups when η^2 is around 0.01, has a medium effect when η^2 is around 0.06, and has a large effect when η^2 is around 0.14 (Tabachnick & Fidell, 2007).

5.4.1 Analysis of the Impact of Business Category on Social Practices

It may be recalled that five groups were considered under business category: 1) Retail Trade, 2) Professional, Scientific and Technical Services, 3) Manufacturing, 4) Construction, and 5) Health Care and Social Assistance. Comparing social practices across these five business categories revealed that there is no significant difference in the social practices adoption between five business categories of manufacturing, construction, retail trade, professional, scientific and technical services, and health care and social assistance. This conclusion was made based on Table 5.20. As shown in this table, the F statistic was 2.284 with a p-value of 0.064. Since obtained p-value is greater than 5% (or 0.05), then the null hypothesis is accepted.

Table 5.20 Analysis of the Impact of Business Category on Social Practices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	583.153	4	145.788	2.28	0.064
Within Groups	8235.056	129	63.838	4	
Total	8818.209	133			

Source: Author

5.4.2 Analysis of the Impact of Business Category on Environmental Practices

Comparing environmental practices across five business categories revealed that there is no significant difference in the environmental practices adoption between five business categories of manufacturing, construction, retail trade, professional, scientific and technical services, and health care and social assistance. This conclusion was made based on Table 5.21. As shown in this table, the F statistic was 1.009 with a p-value of 0.405. Since obtained p-value is greater than 5% (or 0.05), then the null hypothesis is accepted.

Table 5.21 Analysis of the Impact of Business Category on the Environmental Practices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	81.683	4	20.421	1.009	0.405
Within Groups	2793.590	138	20.243		
Total	2875.273	142			

Source: Author

5.4.3 Analysis of the Impact of Business Age on Social Practices

It may be recalled that two groups were considered under business age: 1) less than 10 years old, 2) 10 years old or more. Comparing social practices across these two business ages revealed that there is no significant difference in the social practices adoption between both business ages. This conclusion was made based on Table 5.22. As shown in this table, the F statistic was 0.071 with a p-value of 0.79. Since obtained p-value is greater than 5%, then the null hypothesis is accepted.

Table 5.22 Analysis of the Impact of Business Ages on Social Practices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.342	1	6.342	0.071	0.79
Within Groups	19413.639	217	89.464		
Total	19419.982	218			

Source: Author

5.4.4 Analysis of the Impact of Business Age on Environmental Practices

Comparing environmental practices across two business ages revealed that there is no significant difference in the environmental practices adoption between both business ages. This conclusion was made based on Table 5.23. As shown in this table, the F statistic was 0.589 with a p-value of 0.444. Since obtained p-value is greater than 5% (or 0.05), then the null hypothesis is accepted.

Table 5.23 Analysis of the Impact of Business Ages on Environmental Practices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.585	1	12.858	0.589	0.444
Within Groups	4935.166	231	21.364		
Total	4947.751	232			

Source: Author

5.4.5 Analysis of the Impact of Business Size on Social Practices

Comparing social practices across two business sizes revealed that there is a significant difference in the social practices adoption between two business sizes of small and medium. This conclusion was made based on Table 5.22. As shown in this table, the F statistic was 5.212 with a p-value of 0.023. Since obtained p-value is less than 0.05, then the alternative hypothesis is accepted. This result showed a significant difference in mean score of social practices between small businesses (Mean=46.64, Std.Deviation=9.204) and medium-sized businesses (Mean=50.38, Std.Deviation=9.981)[9]. The value of η^2 was 0.02, which indicated a small effect of business size on the social practices.

Table 5.24 Analysis of the Impact of Business Sizes on Social Practices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	455.489	1	455.489	5.212	0.023
Within Groups	18964.492	217	87.394		
Total	19419.982	218			

Source: Author

Possible Reasons for Higher Adoption of Social Practices in Medium Sized Businesses than in Small Businesses

The result shows that the adoption of social practices is significantly higher in medium sized businesses than in small businesses. It could be concluded that the adoption of social practices requires substantial resources. Small businesses are unable to implement such activities as they do not have enough resources. Previous scholars find similar results for both social and environmental practices. For instance, Sinha and Akoorie (2010) beilive that small businesses adopt sustainable practices less than medium or large businesses because of their liability of smallness. The higher adoption of social practices in medium-sized businesses rather than small businesses could be a resultant of the inherent limited resources of small businesses which makes them unable to adopt sustainable practices (Sinha & Akoorie, 2010). Luken and Stares (2005) in the study of 22 SMEs in four Asian countries conclude that small businesses are unable to pay the costs of addressing the social and environmental requirements of their stakeholders and natural environment.

[9] Post Hoc Test was not performed for Business Size because it has fewer than three categories.

5.4.6 Analysis of the Impact of Business Size on Environmental Practices

Comparing environmental practices across two business sizes revealed that there is no significant difference in the environmental practices adoption between two business sizes of small and medium. This conclusion was made based on Table 5.25. As shown in this table, the F statistic was 1.511 with a p-value of 0.22. Since obtained p-value is greater than 5% (or 0.05), then the null hypothesis is accepted.

Table 5.25 Analysis of the Impact of Business Sizes on Environmental Practices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	32.153	1	32.153	1.511	0.22
Within Groups	4915.598	231	21.280		
Total	4947.751	232			

Source: Author

5.4.7 Analysis of the Impact of Owner/Managers' Education on Social Practices

It may be recalled that three groups were considered under owner/managers' education: 1) elementary education, 2) undergraduate education, and 3) postgraduate education. Comparing social practices across these educational levels revealed that there is a significant difference in the social practices adoption between three educational levels of elementary, undergraduate, and postgraduate. This conclusion was made based on Table 5.26. As shown in this table, the F statistic was 3.343 with a p-value of 0.037. Since obtained p-value is less than 0.05, then the alternative hypothesis is accepted. Post Hoc comparisons using the Tukey HSD test indicated that the mean score for elementary group (Mean=45.04, Std.Deviation=10.106) was significantly different from undergraduate group (Mean=48.51, Std.deviation=8.454) as the related p-value was 0.04 (less than %5). Postgraduate group (Mean=48.43, Std.Deviation=10.064) did not differ significantly from either elementary or undergraduate groups. The value of η^2 was 0.03, which indicated a small effect of owner/managers' education on the social practices.

Table 5.26 Analysis of the Impact of Education on Social Practices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	583.1	2	291.55	3.343	0.037
Within Groups	18836.882	216	87.208		
Total	19419.982	218			

Source: Author

Possible Reasons for Higher Adoption of Social Practices by Owner/Managers with Undergraduate Educational Qualifications than by Owners/Managers with Elementary Educational Qualifications

A significant difference in mean scores between owner/managers with undergraduate educational qualifications and owner/managers with elementary educational qualifications indicates that lack of expertise, information and training about social sustainability is a major barrier for the adoption of such sustainability in SMEs (Borga et al., 2009). So it could be concluded that owner/managers who have higher educational qualification know more about social practices in the business context, resulting in higher adoption of such practices. However, Roxas and Chadee (2012) believe that it could be the case for environmental practices as well. They highlight that commitment towards business sustainability and the adoption of sustainable practices requires knowledge and experience about what kind of activities best fit the firms needs as well as how to implement such activities (Roxas & Chadee, 2012). Owner/managers' educational level contribute to enhance such knowledge and skill.

5.4.8 Analysis of the Impact of Owner/Managers' Education on Environmental Practices

Comparing environmental practices across three educational levels revealed that there is no significant difference in the environmental practices adoption between three educational levels of elementary, undergraduate, and postgraduate. This conclusion was made based on Table 5.27. As shown in this table, the F statistic was 1.692 with a p-value of 0.186. Since obtained p-value is greater than 5% (or 0.05), then the null hypothesis is accepted.

Table 5.27 Analysis of the Impact of Education on Environmental Practices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	71.73	2	35.865	1.692	0.186
Within Groups	4876.021	230	21.2		
Total	4947.751	232			

Source: Author

5.4.9 Analysis of the Impact of Owner/Managers' Experience on Social Practices

As explained earlier, based on experience level (independent variable), the respondent SMEs in Ballarat were organised into three groups as follows: 1) 1-5 years, 2) 6-19 years, and 3) More than 19 years. Comparing social practices across these experience levels revealed that there is no significant difference in the social practices adoption between three experience levels. This conclusion was made based on Table 5.28. As shown in this table, the F statistic was 2.356 with a p-value of 0.097. Since obtained p-value is greater than 5% (or 0.05), then the null hypothesis is accepted.

Table 5.28 Analysis of the Impact of Owner/Managers' Experience on Social Practices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	414.618	2	207.309	2.356	0.097
Within Groups	19005.364	216	87.988		
Total	19419.982	218			

Source: Author

5.4.10 Analysis of the Impact of Owner/Managers' Experience on Environmental Practices

Comparing environmental practices across three experience levels revealed that there is no significant difference in the environmental practices adoption between three experience levels. This conclusion was made based on Table 5.29. As shown in this table, the F statistic was 0.852 with a p-value of 0.428. Since obtained p-value is greater than 5% (or 0.05), then the null hypothesis is accepted.

Table 5.29 Analysis of the Impact of Owner/Managers' Experience on Environmental Practices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	36.402	2	18.201	0.852	0.428
Within Groups	4911.349	230	21.354		
Total	4947.751	232			

Source: Author

5.4.11 Summary of ANOVA

The purpose of performing One-way Analysis of Variance was to analyse the impact of business category, business size, owner/managers' education and experience level on the adoption of social and environmental practices in Ballarat area's SMEs. In the one-way, between groups ANOVA analysis, business category, business age, business size, owner/managers' education and experience level were considered as the independent variables and the adoption of social and environmental practices were considered as the dependent variables. Table 5.30 shows whether or not business category, business age, business size, owner/managers' education and experience level were found to make a significant impact on a factor.

Table 5.30 Summary of ANOVA

	Social Practices	Environmental Practices
Business Category	No	No
Business Age	No	No
Business Size	Yes	No
Owner/Managers' Education	Yes	No
Owner/Managers' Experience	No	No

Source: Author

When business size was identified as making an impact on the adoption of social practices, the study compared statistically the two groups in order to identify the group that had the highest impact. Similarly the impact made by owner/managers' education was also analysed. The following paragraphs provide brief details of those findings.

Business size was found to have a significant impact on the adoption of social practices. Since there were less than three groups in the business size, the Post Hoc Test was impossible to be performed (Pallant, 2013). By comparing the average scores of two groups of small and medium sized businesses, it was determined that medium sized businesses had the higher adoption of social practices than small businesses. Possible explanations for this finding were presented drawing the arguments from extant literature.

Lastly, owner/managers' educational level was found to have a significant impact on the adoption of social practices. After completing the Post Hoc comparisons using Tukey's HSD test, it was determined that the undergraduate educational level had the higher adoption of social practices than elementary educational level. The possible reasons were explained.

5.5 Logistic Regression

This section examines what factors predict the likelihood that Ballarat area's SMEs would adopt social and environmental practices with a view to get insights into the research problems outlined in Chapter One. In other words, this section investigates the last research question of this study and tries to find that what the relationship is between sustainability adoption and the challenges SMEs face in embracing sustainability in Ballarat area. Logistic Regression, a statistical technique, was used to examine this issue.

5.5.1 Evaluating the Model of Adoption of Social Practices

It may be recalled that there were five predictors (independent variables) considered in the logistic regression: 1) Role of stakeholders in driving sustainability (Factor One), 2) Instrumental drivers to strategic competitive advantage (Factor Two), 3) Negative perceptions on sustainability (Factor Three), 4) Intrinsic engagement for sustainable communities (Factor Four), and 5) Resistance to change (Factor Five). The dependent variable was the adoption of social practices (with two categories of Yes and No).

As Table 5.31 shows, the overall percentage of correctly classified cases was 74.3%. In this study, SPSS classified (guessed) that all cases would adopt social practices only because there was a higher percentage of the sustainable respondent SMEs.

Table 5.31 Classification of Adoption of Social Practices Guessed by SPSS

Observed		Predicted		
		Adoption of Social Practices		Percentage Correct
		Non-Sustainable (No)	Sustainable (Yes)	
Adoption of Social Practices	Non-Sustainable (No)	0	56	0
	Sustainable (Yes)	0	162	100
Overall Percentage				74.3

Source: Author

For testing the regression model (goodness of fit), the Omnibus Tests of Model Coefficient was used. This test provides an overall indication of how well the model performs with none of the predictors entered into the model (Pallant, 2013, p. 174). The chi-square value of this test was 33.233 with 5 degrees of freedom which is highly significant as the related p-value is 0.00 (less than 0.05). Therefore, the model (with the set of variables used as predictors) was better than SPSS's original guess shown in Table 5.31which assumed that all cases adopted social practices.

Pallant (2013) introduces Hosmer and Lemeshow Test as the most reliable test of model fit available in SPSS. This test is interpreted differently from the Omnibus Test discussed above. According to Pallant (2013, p. 174) for Hosmer and Lemeshow Test, poor fit is indicated by a significance value less than 0.05. In this study, the chi-square value for this test was 11.603 (with 8 degrees of freedom) with a significance level (p-value) of 0.170. Since this value is larger than 0.05, therefore indicating support for the model. Table 5.32 summarises the results of Omnibus Tests of Model Coefficient and Hosmer and Lemeshow Test. As discussed above, both tests were found to be significant supporting the strong fit of the logistic regression model.

Table 5.32 Goodness of Fit of the Model of Adoption of Social Practices

	Chi-square	df	Sig.
Omnibus Tests of Model Coefficient	33.233	5	0.000
Hosmer & Lemeshow Test	11.603	8	0.170

Source: Author

Table 5.33 shows another piece of information about the usefulness of the regression model. According to Pallant (2013), the Cox & Snell R Square and the Nagelkerke R Square values indicate the amount of variation in the dependent variable explained by the model. As shown in Table 5.33, the values of the Cox & Snell R Square and the Nagelkerke R Square were 0.241 and 0.408 respectively. It means that between 24.1% and 40.8% of the variability of the dependent variable is explained by the set of independent variables.

Table 5.33 Summary of the Model of Adoption of Social Practices

Cox & Snell R Square	Nagelkerke R Square
0.241	0.408

Source: Author

Table 5.34 indicates how well the model is able to predict the correct category (sustainable/non-sustainable) for each case (Pallant, 2013). This table should be compared with Table 5.31 to see how much improvement there was when the predictor variables were included in the model. As shown in Table 5.34, the model correctly classified 75.7% of cases overall, an improvement over the 74.3% in Table 5.31.

Table 5.34 Classification of Adoption of Social Practices

Observed		Predicted		
		Adoption of Social Practices		Percentage Correct
		Non-Sustainable (No)	Sustainable (Yes)	
Adoption of Social Practices	Non-Sustainable (No)	13	43	23.2
	Sustainable (Yes)	10	152	93.8
Overall Percentage				75.7

Source: Author

According to Pallant (2013, p. 175), "the sensitivity of the regression model is the percentage of the category that has the characteristic of interest which has been accurately identified by the model (the true positives)". As shown in Table 5.34, the model was able to correctly classify 93.8% of the respondent SMEs which adopted social practices. On the other hand, the 'Specificity' of the model is the percentage of the category without the characteristic

interest which has been accurately identified by the model (true negatives) (Pallant, 2013). In this study, as shown in Table 5.34, the specificity is 23.2%. It means that 23.2% of the respondent SMEs correctly predicted not to adopt social practices.

"The percentage of cases that the model classifies as having characteristic that is actually observed in this group is called the Positive Predictive Value (PPV)" (Pallant, 2013, p. 175). According to Pallant (2013), the calculation of the PPV is as follow:

$$\text{PPV}=\frac{the\ number\ of\ the\ cases\ in\ the\ predicted=yes,observed=yes\ cell}{total\ number\ in\ the\ predicted=yes\ cell}\times 100$$

As Table 5.34 shows, there were 152 cases in the predicted=yes, observed=yes cell. The total number of cases in the predicted=yes cell was (152+43=) 195. Therefore, the PPV was found to be ($\frac{152}{(152+43)}\times 100=$) 77.95% indicating that of the respondent SMEs predicted to adopt social practices, the regression model accurately picked 77.95% of them.

"The Negative Predictive Value (NPV) is the percentage of cases predicted by the model not to have the characteristic that is actually observed not to have the characteristic" (Pallant, 2013, p.175). According to Pallant (2013), the calculation of the NPV is as follow:

$$\text{NPV}=\frac{the\ number\ of\ the\ cases\ in\ the\ predicted=no,observed=no\ cell}{total\ number\ in\ the\ predicted=no\ cell}\times 100$$

As Table 5.34 shows, there were 13 cases in the predicted=no, observed=no cell. The total number of cases in the predicted=no cell was (13+10=) 23. Therefore, the NPV was found to be ($\frac{13}{(13+10)}\times 100=$) 56.52% indicating that of the respondent SMEs predicted not to adopt social practices, the regression model accurately picked 56.52% of them.

5.5.2 Evaluating each of the Independent Variables in the Model of Adoption of Social Practices

It may be recalled that five predictors (independent variables) considered in the logistic regression were: 1) Role of stakeholders in driving sustainability (Factor One), 2) Instrumental drivers to strategic competitive advantage (Factor Two), 3) Negative perceptions on sustainability (Factor Three), 4) Intrinsic engagement for sustainable communities (Factor Four), and 5) Resistance to change (Factor Five). Also, the five

hypotheses were developed in Section 4.3.4.4 to test the significance of each factor in the adoption of social and environmental practices.

Table 5.35 provides the information about the contribution or importance of each of the predictor variables. Based on the results of this table, each of hypotheses (H1 to H5) was accepted or rejected. As shown in this table, only three predictors of factors one (Role of stakeholders in driving sustainability), three (Negative perceptions on sustainability), and five (Resistance to change) were significant as they had p-values less than 0.05. So, only H1, H3, and H5 (in Section 4.3.4.4) were accepted for the adoption of social practices. It means that, in this study, these three were the major factors influencing whether an owner/manager of SMEs adopt the social practices. Factors two (Instrumental drivers to strategic competitive advantage) and four (Intrinsic engagement for sustainable communities) did not contribute significantly to the model. Hence, H2 and H4 were rejected for the adoption of social practices.

Table 5.35 Variables in the Adoption of Social Practices Equation

	B	S.E.	Wald	df	Sig.	Exp (B)
Factor One	0.131	0.209	0.392	1	0.031	1.140
Factor Two	0.113	0.200	0.321	1	0.571	0.893
Factor Three	-0.807	0.211	14.559	1	0.000	2.241
Factor Four	0.011	0.204	0.003	1	0.956	0.989
Factor Five	-0.271	0.198	1.873	1	0.017	1.311
Constant	1.256	0.181	48.151	1	0.000	3.510

Source: Author

In Table 5.35, the B values in the second column were used in the regression equation to calculate the probability of a case falling into a specific category (Pallant, 2013, p. 176). The positive or negative signs of B values indicate the direction of the relationship (which factors increase the probability of a yes answer and which factors decrease it) (Pallant, 2013, p. 176). Negative B values indicate that an increase in the independent variable will result in a decreased probability of the case adopting social practices. On the other hand, positive B values indicate that an increase in the independent variable will result in an increased probability of the case adopting social practices (Tabachnick & Fidell, 2007).

In this study, as shown in Table 5.35, the variable measuring role of stakeholders in driving sustainability showed a positive B value of 0.131. This indicated that the more prominent role of stakeholders in driving sustainability, the more likely it is that SMEs adopt the social practices. For the two other significant factors, the B values were negative (-0.807 and -0.271). This suggested that the more negative perception of owner/managers on sustainability and the more resistance of owner/managers to change, the less likely it is that SMEs adopt the social practices. Based on the B values in Table 5.35, the following regression equation was found for this study:

$$Y_1 = 1.256 + 0.131F_1 + 0.113F_2 - 0.807F_3 + 0.011F_4 - 0.271F_5$$

Where Y_1 was the adoption of social practices, F_1 was the role of stakeholders in driving sustainability, F_2 was the instrumental drivers to strategic competitive advantage, F_3 was the negative perceptions on sustainability, F_4 was the intrinsic engagement for sustainable communities, and F_5 was resistance to change.

In Table 5.35, the last column is called Exp (B). These values are the Odd Ratios (OR) for each of the independent variables (predictors) (Pallant, 2013). According to Tabachnick and Fidell (2007, p. 461), the odds ratio represents "the change in odds of being in one of the categories of outcome when the value of a predictor increases by one unit". In this study, the odds of a SME adopting the social practices was 1.140 times higher for an owner/manager who felt the role of stakeholders in driving sustainability more than for an owner/manager who did not feel the role of stakeholders in driving sustainability, all other factors being equal. Also, as shown in Table 5.35, for every extra negative perception on sustainability by an owner/manager, the odds of him/her adopting the social practices decreased by a factor of 2.241, all other factors are being equal. Moreover, for every extra resistance to change an owner/manager showed, the odds of him/her adopting the social practices decreased by a factor of 1.311, all other factors are being equal.

5.5.3 Evaluating the Model of the Adoption of Environmental Practices

It may be recalled that there were five predictors (independent variables) considered in the logistic regression were formulated into five hypotheses: H1) Role of stakeholders in driving sustainability (Factor One), H2) Instrumental drivers to strategic competitive advantage

(Factor Two), H3) Negative perceptions on sustainability (Factor Three), H4) Intrinsic engagement for sustainable communities (Factor Four), and H5) Resistance to change (Factor Five). The dependent variable was the adoption of environmental practices (with two categories of Yes and No).

As Table 5.36 shows, the overall percentage of correctly classified cases was 81.1%. In this study, SPSS classified (guessed) that all cases would adopt environmental practices only because there was a higher percentage of sustainable respondent SMEs.

Table 5.36 Classification of the Adoption of Environmental Practices Guessed by SPSS

Observed		**Predicted**		
		Adoption of Environmental Practices		**Percentage Correct**
		Non-Sustainable (No)	**Sustainable (Yes)**	
Adoption of Environmental Practices	**Non-Sustainable (No)**	0	44	0
	Sustainable (Yes)	0	189	100
Overall Percentage				81.1

Source: Author

The chi-square value of Omnibus Tests of Model Coefficient was 23.341 with 5 degrees of freedom which is highly significant as the related p-value is 0.00 (less than 0.05). Therefore, the model (with the set of variables used as predictors) was better than SPSS's original guess shown in Table 5.36 which assumed that all cases adopted environmental practices.

In this study, the chi-square value for Hosmer and Lemeshow Test was 6.167 (with 8 degrees of freedom) with a significance level (p-value) of 0.629. Since this value is larger than 0.05, therefore indicating support for the model. Table 5.37 summarises the results of Omnibus Tests of Model Coefficient and Hosmer and Lemeshow Test. As discussed above, both tests were found to be significant supporting the strong fit of the logistic regression model.

Table 5.37 Goodness of Fit of the Model of the Adoption of Environmental Practices

	Chi-square	df	Sig.
Omnibus Tests of Model Coefficient	23.341	5	0.000
Hosmer & Lemeshow Test	6.167	8	0.629

Source: Author

As shown in Table 5.38, the values of the Cox & Snell R Square and the Nagelkerke R Square were 0.195 and 0.354 respectively. It means that between 19.5% and 35.4% of the variability of the dependent variable is explained by the set of independent variables.

Table 5.38 Summary of the Model of Adoption of Environmental Practices

Cox & Snell R Square	Nagelkerke R Square
0.195	0.354

Source: Author

Table 5.39 indicates how well the model is able to predict the correct category (sustainable/non-sustainable) for each case (Pallant, 2013). This table should be compared with Table 5.36 to see how much improvement there was when the predictor variables were included in the model. As shown in Table 5.39, the model correctly classified 81.1% of cases overall, no improvement over the 81.1% in Table 5.36.

Table 5.39 Classification of Adoption of Environmental Practices

Observed		Predicted		
		Adoption of Environmental Practices		Percentage Correct
		Non-Sustainable (No)	Sustainable (Yes)	
Adoption of Environmental Practices	**Non-Sustainable (No)**	4	40	9.1
	Sustainable (Yes)	4	185	97.9
Overall Percentage				81.1

Source: Author

As shown in Table 5.39, the model was able to correctly classify 97.9% of the respondent SMEs which adopted environmental practices. In this study, as shown in Table 5.39, the specificity is 9.1%. It means that 9.1% of the respondent SMEs correctly predicted not to adopt environmental practices.

As mentioned before, to calculate the PPV, it is needed to divide the number of cases in the predicted=yes, observed=yes cell by the total number in the predicted=yes cells and multiply by 100 (Pallant, 2013). As Table 5.39 shows, there were 185 cases in the predicted=yes, observed=yes cell. The total number of cases in the predicted=yes cell was (185+40=) 225. Therefore, the PPV was found to be ($\frac{185}{(185+40)}$×100=) 82.22% indicating that of the respondent SMEs predicted to adopt environmental practices, the regression model accurately picked 82.22% of them.

As Table 5.39 shows, there were four cases in the predicted=no, observed=no cell. The total number of cases in the predicted=no cell was (4+4=) 8. Therefore, the NPV was found to be ($\frac{4}{(4+4)}$×100=) 50% indicating that of the respondent SMEs predicted not to adopt environmental practices, the regression model accurately picked 50% of them.

5.5.4 Evaluating each of the Independent Variables in the Model of Adoption of Environmental Practices

Table 5.40 provides information about the contribution or importance of each of the predictor variables. Based on the results of this table, each of hypotheses (H1 to H5) was accepted or rejected. As shown in this table, only three predictors of factors: three (Negative perceptions on sustainability), four (Intrinsic engagement for sustainable communities), and five (Resistance to change) were significant as they had p-values less than 0.05. So, only H3, H4, and H5 (in Section 4.3.4.4) were accepted for the adoption of environmental practices. It means that, in this study, the major factors influencing whether an owner/manager of SMEs adopt the environmental practices were negative perceptions on sustainability, intrinsic engagement for sustainable communities, and resistance to change. Factors One (Role of stakeholders in driving sustainability) and Two (Instrumental drivers to strategic competitive advantage) did not contribute significantly to the model. Hence, H1 and H2 were rejected for the adoption of environmental practices.

Table 5.40 Variables in the Adoption of Environmental Practices Equation

	B	S.E.	Wald	df	Sig.	Exp (B)
Factor One	0.057	0.219	0.067	1	0.795	0.945
Factor Two	0.134	0.209	0.414	1	0.520	0.874
Factor Three	-0.351	0.215	2.660	1	0.046	1.420
Factor Four	0.423	0.209	4.083	1	0.043	1.526
Factor Five	-0.510	0.215	5.660	1	0.017	1.666
Constant	1.678	0.199	71.285	1	0.000	5.356

Source: Author

In this study, as shown in Table 5.40, the variable measuring intrinsic engagement for sustainable communities showed a positive B value of 0.423. This indicated that the more intrinsic engagement of owner/managers for sustainable communities, the more likely it is that SMEs adopt the environmental practices. For the two other significant factors, the B values were negative (-0.351 and -0.510). This suggested that the more negative perception of owner/managers on sustainability and the more resistance of owner/managers to change, the less likely it is that SMEs adopt the environmental practices. Based on the B values in Table 5.38, the following regression equation was found for this study:

$$Y_2 = 1.678 + 0.057F_1 + 0.134F_2 - 0.351F_3 + 0.423F_4 - 0.51F_5$$

Where Y_2 was the adoption of environmental practices, F_1 was the role of stakeholders in driving sustainability, F_2 was the instrumental drivers to strategic competitive advantage, F_3 was the negative perceptions on sustainability, F_4 was the intrinsic engagement for sustainable communities, and F_5 was resistance to change.

In this study, the odds of a SME adopting the environmental practices was 1.526 times higher for an owner/manager who felt the intrinsic engagement for sustainable communities than for an owner/manager who did not feel the intrinsic engagement for sustainable communities, all other factors being equal. Also, as shown in Table 5.40, for every extra negative perception on sustainability by an owner/manager, the odds of him/her adopting the environmental practices decreased by a factor of 1.420, all other factors are being equal. Moreover, for every extra resistance to change an owner/manager showed, the odds of him/her adopting the environmental practices decreased by a factor of 1.666, all other factors are being equal.

5.5.5 Summary of Logistic Regression

Direct logistic regression was performed to assess the impact of a number of factors on the likelihood that respondents would report that they have adopted social and environmental practices (it means that whether they are social and environmental friendly SMEs). Two models of the adoption of social and environmental practices were created. Both models contained five independent variables (role of stakeholders in driving sustainability, instrumental drivers to strategic competitive advantage, negative perceptions on sustainability, intrinsic engagement for sustainable communities, and resistance to change).

The full model of the adoption of social practices containing all predictors was statistically significant, χ^2 (5, N=218) = 33.233, p<0.05, indicating that the model was able to distinguish between respondents who adopted the social practices and did not adopt the social practices. The full model of the adoption of environmental practices was able to determine which respondents adopted the environmental practices and which ones did not adopt them. As the full model containing all predictors was statistically significant, χ^2 (5, N=233) = 23.341, p<0.05.

The model of the adoption of social practices as a whole explained between 24.1% and 40.8% of the total variance in the adoption of social practices. Also, between 19.5% and 35.4% of the total variance in the adoption of environmental practices was explained by the environmental model. The models of the adoption of social and environmental practices correctly classified 75.7% and 81.1% of cases respectively.

Only three of the independent variables made a unique statistically significant contribution to both models. In the model of the adoption of social practices, three significant predictors were role of stakeholders in driving sustainability, negative perceptions on sustainability, and resistance to change. In the model of the adoption of environmental practices, three significant predictors were negative perceptions on sustainability, intrinsic engagement for sustainable communities, and resistance to change.

The strongest predictor of the adoption of social practices was negative perceptions on sustainability, recording an odds ratio of 2.241. This indicated that respondents who had negative perceptions on sustainability were over two times more likely to report non-adoption of the social practices than those who did not have negative perceptions on sustainability, controlling for all other factors in the model. The strongest predictor of adoption of the

environmental practices was resistance to change, recording an odds ratio of 1.666. This means that respondents who were resistant to change were over 1.6 times more likely to report non-adoption of the environmental practices than those who were not resistant to change, controlling for all other factors in the model.

5.6 Summary

The purpose of this chapter was to analyse the collected data in order to address the research objectives outlined in Chapter One. For this purpose several types of analysis were conducted including descriptive analysis, factor analysis, one-way analysis of variance and logistic regression.

The findings show that the strongest practices by SME businesses in this study were employee and local community-based social activities. The willingness to provide congenial workplace conditions was the most commonly adopted social activity (average of 3.51 out of 4) amongst Ballarat area's SME businesses. Also, respondent owner/managers frequently allowed their staff to work flexible hours to fit their family circumstances (average of 3.46). Moreover, implementing socially inclusive employment policies was another commonly used social activity (average of 3.30). For this purpose they recruited locally where possible, promoted healthy work practices, and encouraged the disadvantaged people to apply for jobs.

The findings in environmental practices reveal that recycling programs (average of 3.63) were frequently adopted by the respondents. They often recycled paper, donated computers, and avoided disposable goods. Also adopting energy efficiency programs (average of 3.58) was another environmental challenge that they dealt with. They turned down unnecessary heating, turned off equipment and lights, and monitored energy and water use. Furthermore, it was found that respondent businesses engaged in waste reduction activities (average of 3.41) such as adjusting printer settings to draft quality, avoiding duplication of papers at meetings, and donating to charity rather than sending Christmas cards. The adopted practices by SMEs are limited to simple sustainability activities consistent with Dunphy et al. (2007) compliance phase.

There are drivers and barriers to the studied SMEs relating to the adoption of sustainable practices which were identified by factor analysis. Five factors containing subgroups of

variables were found as the effective drivers and barriers to adopt sustainability by the studied SME owner/managers. These five factors were as follows:

1. Role of stakeholders in driving sustainability (act as a driver in the adoption of sustainable practices by the studied owner/managers)
2. Instrumental drivers to strategic competitive advantage (act as a driver in the adoption of sustainable practices by the studied owner/managers)
3. Negative perceptions on sustainability (act as an inhibitor in the adoption of sustainable practices by the studied owner/managers)
4. Intrinsic engagement for sustainable communities (act as a driver in the adoption of sustainable practices by the studied owner/managers)
5. Resistance to change (act as an inhibitor in the adoption of sustainable practices by the studied owner/managers)

From these factors, "Role of stakeholders in driving sustainability" was the most effective one as it explained 30.87% of the total variance, confirming the prominent role of stakeholders including customers, suppliers and employees in regional SMEs to adopt sustainability.

The impact of business category, business age, business size, owner/managers' education and experience level on the adoption of social and environmental practices in Ballarat area's SMEs was analysed using one-way analysis of variance. The findings reveal that only business size and owner/managers' education have an impact on the adoption of social practices. Further analysis show that medium sized businesses had the higher adoption of social practices than small businesses. Also owner/managers with the undergraduate qualifications had the higher adoption of social practices than those with elementary educational qualifications.

The relationship between factors extracted by factor analysis and the social and environmental practices adopted by the studied SMEs was assessed using logistic regression. The purpose of this analysis was to find which factor is significant in the adoption of social and environmental practices by the studied owner/managers. The findings reveal that only three factors made a unique statistically significant contribution to the adoption of social and

environmental practices. In the model of the adoption of social practices, three significant predictors were positive role of stakeholders in driving sustainability, negative perceptions on sustainability, and resistance to change. In the model of the adoption of environmental practices, three significant predictors were negative perceptions on sustainability, positive intrinsic engagement for sustainable communities, and resistance to change.

The above findings lead to several interpretations that could be useful to SME owner/managers and practitioners. They will be discussed in more detail in the chapter that follows. The findings will be compared to the existing literature in the next chapter as well. Furthermore, the research questions outlined in Chapter One will be answered in the chapter that follows.

Chapter 6: Discussion

6.1 Introduction

This chapter provides analysis of the findings obtained for the study's four research questions. At the end of each analysis, it provides the insight into the research problem in the light of the empirical results and the related literature. This chapter provides how the research findings relate, contrast and extend the existing literature based on ST. This chapter also presents the revised stakeholder theory framework, which elucidates the research findings in a general setting for future research into this topic.

6.2 Analysis of the Research Questions

The following subsections present insight into each question in the light of the research findings and the extant literature. In addition, the subsections provide useful application guidelines to SME owner/managers.

6.2.1 Research Question 1

What are the activities and practices which SMEs in a regional city of Australia adopt that are consistent with being a sustainable business?

The above research question was analysed for the regional city of Ballarat by descriptive statistics. This study provided some evidence of the extent of activity related to social and environmental concerns. The differences between small and medium businesses were less pronounced in some of the socially and environmentally related activities, although there were still important differences. Generally, medium-sized businesses adopted social practices more frequently than small businesses. This confirms Perrini et al. (2007) study which shows that the size of firm impacts on its adoption of socially friendly practices. It was found that medium-sized businesses adopted four socially friendly practices more frequently than small businesses. These four activities were: (i) sponsoring of clubs or community programs, (ii) being active in business associations, (iii) sharing information with stakeholders, and (iv) participating in regional committees of stakeholders.

Like social practices, this study provided some evidence of the extent of activity related to environmental concerns. Unlike with social practices, small businesses generally adopted environmental practices more frequently than medium-sized businesses. It contradicts Martin-Tapia et al. (2010) study which shows a positive relationship between the size of the firm and the level of engagement with environmental friendly programs.

The strongest practices by SME businesses in this study were employee and local community-based social activities. The findings demonstrate that the willingness to provide congenial workplace conditions was the most commonly adopted social activity (average of 3.51) amongst Ballarat area's SME businesses. Also, respondent owner/managers frequently allowed their staff to work flexible hours to fit their family circumstances (average of 3.46). Moreover, implementing socially inclusive employment policies was another commonly used social activity (average of 3.30). For this purpose they recruited locally where possible, promoted healthy work practices, and encouraged the disadvantaged people to apply for jobs. It is apparent that donations to community fund raising activities was another commonly adopted social practice (average of 3.15), as 82.4% of the respondents usually donated and only 6% of them never engaged in this activity. Further, business owner/managers in the Ballarat area engaged in business operations that were socially responsible (average of 3.02). In other words, they bought fair trade tea and coffee, bought locally, developed products with social benefits, and conducted responsible advertising. These findings are in line with the corporate sustainability (or environmental management systems, EMS) approach set out by O'Laire and Welford (1996) and endorsed as a general management framework by Azapagic (2003). The significance of these findings is that SMEs in a regional setting do appreciate the many advantages, both in better competitive advantage and as good commercial citizens (Sawyer & Evans, 2009), but without a clear framework around which to build strategically these social activities.

The lack of any strategic framework is evident in other evidence from the findings that show weak social commitment. The SMEs in this study were not very active in holding open days (average of 1.56) as a high proportion of respondent owner/managers (67.8%) never held an open day for the public to visit their businesses, while another 15.5% seldom held such open days. Moreover, business owner/managers did not regularly participate in regional committees of stakeholders (average of 2.16). A further 35.2% of SME respondents never participated in regional committees of stakeholders and 26.2% of them seldom engaged in

these committees. Also, only 12% of the respondents often participated in these committees. As well, the respondents (as commercial businesses) did not view community issues such as homelessness as of their concern (average of 2.30). They tended not to allow their staff paid time off to participate in charitable activities (average of 2.46). The research findings also show that including stakeholder concerns in business decision (average of 2.52) and sharing information with stakeholders (average of 2.57) were other social activities which were not regularly adopted by these owner/managers. From the evidence on social practices by the SMEs under investigation, their actions are not contradictory as it first seems. When the employee or community issue can be seen to be closely connected to their day-to-day commercial activities, these SMEs act as very good local-based citizens (Sawyer & Evans, 2009); yet, on a broader community perspective, involvement with social activities is highly limited. This supports the view by Hass (1996) that SMEs have explicit or implicit management models that are unable to integrate their strong local support for what they perceive as worthy social (people) issues with a broader perspective of sustainability issues.

The findings in environmental practices reveal that recycling programs (average of 3.63) were frequently adopted by the respondents. Also adopting energy efficiency programs (average of 3.58) was another environmental challenge that they dealt with. Furthermore, it was found that respondent businesses engaged in waste reduction activities (average of 3.41). The adoption of low usage practices for non-renewable resources by the studied regional SMEs is consistent with the Jones and Welford (1997) study, and shows that these firms are responsive and flexible to environmental concerns in the manner described by Hawken (1993) and Sinha and Akoorie (2010). Using environmentally friendly products (average of 3.23) was another commonly adopted environmental activity they focused on. They usually used eco-cleaning products or products with minimal packaging and they often traded with green energy suppliers, reflecting close relations in their supply-chain, as noted by Kerr (2006) and Aragon-Correa et al. (2008).

On the other hand, these studied SMEs also indicated some less adopted environmental activities. Environmental management policies (average of 2.37) were the least commonly adopted environmental practices by the respondent businesses. They rarely had a clear environmental policy with targets, nor would they communicate their environmental practices to customers, staff and suppliers, set up green teams, or observe ISO 14001 standard. Moreover, SMEs in Ballarat seldom improved the impact of their businesses on the local

surroundings (average of 2.70). It means that they do not calculate and reduce carbon footprint and they do not seem to care about improving the external areas of their premises. As with social practices, the environmental practices of these SMEs were built around direct and tangible reactions to environmental concerns that were expressed in the local community, rather than any totality of ecosystem engagement. Raynard and Forstater (2002) also recognised this approach in developing countries where the smaller firms are closely connected "on the ground" to their local regions to recognise the need for environmental sustainability, but weakly linked to a broad appreciation of the ecological system and thus the need for broader ecological sustainability.

Despite strong links to social and environmental practices, the regional SMEs under investigation show no clear strategic path towards a broader sustainable development business strategy. This is a concern raised by Goldsmith and Samson (2006) in the context of business success. Their role as regional development agents towards BS is limited. As Noland and Phillips (2010) argue, "doing the right thing" is fine, but it is a deep engagement with stakeholders in sustainable practices that provides a strong movement forward to comprehensive BS. The regional SMEs in this study certainly understand about "doing the right thing", but as Moyeen and Courvisanos (2012) note in their in-depth interview study on Corporate Social Responsibility behaviour by seven firms in Ballarat region, there is the lack of understanding by these firms of the totality of BS engagement and an inability to pursue such a complete strategy due to lack of time, resources and the relative lack of appreciation that BS requires a systems management approach which links to all stakeholders in the region and even to the "global village" (Rushton, 2002).

6.2.2 Research Question 2

What are the drivers and barriers to SMEs in a regional city of Australia relating to sustainability?

The second research question explores the drivers and inhibitors which affect the orientation of SMEs' owner/managers towards the sustainability issue in Regional Australia. This question was answered using factor analysis. The study found that five factors impact the adoption of sustainability within regional SMEs. These factors were named as role of stakeholders in driving sustainability, instrumental drivers to strategic competitive advantage,

negative perceptions on sustainability, intrinsic engagement for sustainable communities, and resistance to change. From these five factors, three factors (role of stakeholders in driving sustainability, instrumental drivers to strategic competitive advantage, and intrinsic engagement for sustainable communities) act as drivers and two factors (negative perceptions on sustainability and resistance to change) act as barriers to regional SMEs relating to sustainability. The following subsections discuss each factor in more details and present insight into each factor in the light of the extant literature.

Driver 1: Role of stakeholders in driving sustainability

In this study, "role of stakeholders in driving sustainability" was the most effective factor as it explained the highest percentage of total variance (30.87%). As previously showed in Chapter Five (see Table 5.18), government, customers, suppliers and employees are considered as stakeholders in this study. The study findings reveal that government does not appear to be an effective sustainability driver for Ballarat area's SMEs as the regional and community council regulations are not viewed as difficult to satisfy. Customers compel SMEs to adopt sustainable practices by either positively buying their products and services or negatively by rejecting them (Porter & Kramer, 2006). In SMEs, owner/managers have closer relationships with their customers and therefore are more responsive to them (Bos-Brouwers, 2010) so they can show their engagement with sustainability to the community through their customers. In other words, customers evaluate SMEs based on the sustainable activities they engage in (Wells, 2011). The results of the study found that customers play a prominent role in the adoption of sustainable practices by regional SMEs. In this study, majority of the respondents (78%) agreed that sustainable SMEs are well supported by their customers and there is an increased public demand for ethical products and services. This view is confirmed by a New Zealand Business Council online survey in which 70% of respondents suggest that business engagement with sustainability is a prominent reason for the purchase of products or services from such engaged businesses (New Zealand Business Council , 2007). In addition, 75% of respondents believed that pressure from existing customers could force businesses to engage with sustainability and sustainable SMEs have the potential to attract new customers. This is consistent with Hillary (2004)'s view which considers limited demand for sustainable goods from consumers and the lack of customer pressure as the significant reasons of non-adoption of sustainability by SMEs. Further, Simpson et al. (2004) observed that 80% of owner/managers of SMEs believe that there is no relationship between sustainability adoption and improved customer satisfaction.

Suppliers were identified as another effective stakeholder in the adoption of sustainability by regional SMEs. In this study, 57% of the respondents agreed that dealing with sustainable suppliers reduces the risk of damge to SMEs reputation. This is consistent with a study by Gadenne et al. (2009) which finds, that owner/managers who know that suppliers concerns affect their businesses, are more likely to learn the significant advantages and disadvantages associated with their suppliers' concerns. In other words, suppliers have the potential to set sustainability principles as important priorities for their own activities and in their relations to SMEs they deal with (Rutherfoord et al., 2000). In this way, suppliers would encourage SME owner/managers to adopt sustainable practices. This is confirmed by the results of this study showing that 42.1% of the respondents believed that suppliers and trade bodies could put pressure on SMEs to be socially and environmentally friendly.

Employees of SMEs are an internal group which is effective in the adoption of sustainability in regional SMEs. Kerr (2006) believes that the key factor for the SMEs engagement with sustainability is that owner/managers provide a business culture to achieve environmental and social improvement. This culture should formulate environmental and social objectives, and encourage employees to have positive attitudes towards sustainability issues. In this way, staff and employees could put pressure on SMEs to engage with sustainability. In other words, if owner/managers provide education and technical assistance about environmentally and socially friendly practices to their employees, then employees would devote more time and resources to the adoption of sustainability. Moreover, sustainable SMEs are able to attract and retain employees because they adopt the services and activities which are not detrimental to employees and community health (O'Laire & Welford, 1996; Revell et al., 2010).

From this current research, this 'stakeholder' driver is limited in its capacity to drive sustainable practice adoption. It can drive better environmental practice from direct customer, supplier and employee concerns; but this driver will not change fundamentally the SME operators to a much broader ecological management of the ecosystem. As such, it seems this driver can move the SME towards a strong third phase of the Dunphy et al. (2007), 'compliance' with stakeholders, but not to the 4^{th} or 5^{th} phases.

Driver 2: Instrumental drivers to strategic competitive advantage

In this study, "instrumental drivers to strategic competitive advantage" was the second effective factor as it explained 6.99% of total variance; which is significantly less than the

role of Driver 1. Generally, this factor is related to the tangible and intangible advantages resulting from the adoption of sustainable practices by regional SMEs. In other words, this driver refers to the fourth phase of the sustainability phase model adopted by Dunphy et al. (2007). In this phase which is called efficiency, businesses confirm that the sustainability adoption is beneficial for their businesses and it leads to increased efficiency.

The results of the current study showed that 47.2% of the respondents agreed that the adoption of sustainable practices could boost the existing markets or create new markets. It is consistent with a study by Lo and Sheu (2007) in which higher level of commitment to sustainability is strongly associated with higher market value. In the current study, cost saving from energy or other resource efficiency was reported as another advantage from the adoption of sustainable activities so that 52.4% of the owner/managers believed that the adoption of sustainable practices could bring cost savings. It can be due to cleaner production techniques and innovation (Hillary, 1995). This finding confirms Azapagic's study (2003) which shows that if businesses adopt sustainability in their management system, they can take advantages such as reducing costs, managing risks, creating new products and driving structural internal changes in the business culture. Gadenne et al. (2009) observe a correlation between environmental awareness of SME owner/managers and cost-benefit awareness of their actions. However some studies, in contrast with the findings of the current study, find SME operators sometimes reject implementation of sustainability principles, as it increases business costs (Revell & Blackburn, 2007; Bos-Brouwers, 2010). In a survey study of UK SMEs by Simpson et al. (2004), they observe that 75% of the owner/managers of SMEs consider environmental action as a business cost.

As previously showed in Chapter Five (see Table 5.18), awareness about the environmental protection programs organised by the government or external organisation and the main source of electricity in the study area were classified as the effective drivers to adopt sustainable practices by regional SMEs. In this current study, 57.1% of the owner/managers reported that they are aware of environmental protection programs in their community and 67.8% of them realised that most of the electricity in Victoria is produced by burning highly polluting brown coal. This is consistent with the findings from previous studies which have found a positive relationship between owner/managers' knowledge about sustainability and the social and environmental friendly activities they adopt (Williamson & Lynch-Wood, 2001; Gadenne et al., 2009). Furthermore, the findings of the current study show that

Ballarat's SME owner/managers are fairly well aware of issues regarding sustainability. It confirms the finding of a study by Collins et al. (2010) in which management knowledge about sustainability is reported as an important motivator to the adoption of sustainable practices. Also Drake et al. (2004) and Hillary (2004) believe that environmental knowledge at public, private and community level plays an important role in generating support and ideas which lead to the creation of sustainable business and an increase in the demand for environmental products and services. Moreover, Gadenne et al. (2009) in a study of SMEs in Queensland find that owner/managers generally know about the mandatory compliance and supplier impacts and also are aware of benefits resultant to the adoption of some environmental friendly practices.

Driver 3: Intrinsic engagement for sustainable communities

The last (third) driver to the adoption of sustainability in Ballarat area's SMEs was "intrinsic engagement for sustainable communities" explaining only 4.41% of the total variance. This factor refers to the commitment and responsibility felt by the owner/managers towards the community and environment. This finding is consistent with the studies of several scholars which find personal responsibility and commitment of the owner/managers toward the community and environment as important motivators to adopt sustainable practices within SMEs context (Hillary, 1995; Naffziger & Montagno, 2003; Roberts et al., 2006; Lawrence et al., 2006; Gadenne, et al., 2009). The findings showed that majority of Ballarat's SME owner/managers (88.4%) consider adoption of sustainability as a right thing to do. Also 77.3% of them agreed that sustainability adoption gives them personal pride and enjoyment. This means that SMEs in Ballarat area are inclined to engage in practices that can lead to more sustainable communities in which they operate due to their owner/managers' personal beliefs regardless of any external pressure or motivation. In other words, Ballarat's SME owner/managers consider protecting the environment and supporting the community as ethical issues. As it can be noted from the findings, 92.3% and 73.4% of the respondents agreed that SMEs should ensure the health and safety of its employees and community respectively. These latter health and safety findings confirm the study by Revell et al. (2010) in which majority of SME owner/managers feel a great deal of responsibility towards the local community, but there are questions as to whether they are willing to pay the costs of sustainability adoption for the environment and society as a whole. A positive correlation between personal beliefs of owner/managers and their expending time and resources on sustainability has been found in studies by Naffziger and Montagno (2003) and Roberts et al.

(2006), but the SMEs in this Ballarat study show only limited compliance sustainability adoption.

Barrier 1: Negative perceptions on sustainability

"Negative perceptions on sustainability" was the first barrier found in this study to adopt sustainable practices in regional SMEs. This factor explained 6.04% of the total variance. This barrier referred to the negative attitudes of owner/managers towards the adoption of sustainability. Some studies have found that negative perception of owner/managers about their SME's impact on the environment will deter the adoption of sustainable practices (Hillary, 1999; Gerrans & Hutchinson, 2000; Gadenne et al., 2009).

In this study, as indicated by the findings, more than half of the respondents (65.3%) believed that environmental issues are not relevant to their businesses. It means that Ballarat's SME owner/managers consider their businesses' environmental effects as insignificant and trivial. This was further evidenced by 59.2% of the respondents who agreed that they are not in the right industry to make a difference to local community. A study by Yu and Bell (2007) supports this view in which owner/managers think that their businesses do not impact the environment and community so they feel little responsibility to engage with sustainable activities. In other words, owner/managers of SMEs usually ignore the environmental impact of their enterprises due to what such SMEs perceive as little or negligible environmental impact that each individual SME contributes to the environment (Hillary, 1995; Ammenberg & Hjelm, 2003; Simpson et al., 2004; Revell et al., 2010). This supports Bos-Brouwers (2010) who has specified SMEs' perception of little individual impact on the environment as the primary barrier to SMEs' sustainability.

Barrier 2: Resistance to change

The last barrier to the adoption of sustainability in regional SMEs found in this study was "resistance to change" explaining 4.08% of the total variance. This factor is related to the attitude of SME owner/managers regarding poor infrastructures and resources. This barrier showed unwillingness of owner/managers to engage with sustainability due to lack of resources and costs of the sustainability adoption. This factor is consistent with the first phase of the sustainability phase model adopted by Dunphy et al. (2007). In this phase, all the resources and infrastructures are used by business to make money primarily. The owner/managers reject the sustainability adoption because they think that their businesses

have poor infrastructure to support sustainability, sustainability adoption does not bring benefits for their businesses, and sustainability adoption increases their costs and needs more money and effort.

In this study, 64.3% of the owner/managers reported that they have poor infrastructures to support sustainable activities like recycling. Moreover, 42.5% of them agreed that they will not benefit financially from the adoption of sustainability. This is consistent with other studies that show a significant number of SMEs do not see financial benefit in sustainability adoption. For example, a study by McKeiver and Gadenne (2005) in which only 19% of Australian SMEs believe that they earn financial benefits from the investment for sustainability. These findings accord with previous studies which show that lack of financial resources and time is a major barrier to the implementation of sustainable practices in SMEs (Hillary, 1999; Tilley, 1999; Biondi et al., 2000; Gerrans & Hutchinson, 2000; Lepoutre & Heene, 2006; Gadenne et al., 2009; Collins et al., 2010). Also Gadenne et al. (2009) believe that the lack of resources and time contribute to owner/managers not being aware of environmental requirements.

In the current study, 55.8% of the respondents reported that spending money for the adoption of sustainable practices is an inhibitor. This result contradicts Aragon-Correa et al. (2008) finding that the owner/managers' view about sustainability and their ability and effort to adopt sustainable practices are more significant contributors to the implementation of business sustainability rather than financial resources. Furthermore, the findings of the current study showed that 35.2% of the owner/managers agreed that being sustainable increases business costs. This is compatible with the view that limited resources of SMEs make them unable to implement sustainable activities (Udayasankar, 2008). Luken and Stares (2005) in a study on 22 SMEs in Asian countries, find that cost is a major barrier to adopting sustainability practices causing the owner/managers' resistance to change. Some scholars (Petts et al., 1998; Revell & Rutherfoord, 2003; Bos-Brouwers, 2010; Revell et al., 2010) confirm that owner/managers of SMEs have a negative attitude towards the financial returns from sustainability investments. In contrast, Roxas and Chadee (2012) find that small firms are very much able to adopt sustainable practices irrespective of their resources.

6.2.3 Research Question 3

Is there a significant difference in sustainability adoption within SMEs in a regional city of Australia with different demographic variables?

The third research question provides an insight into the significance differences existing in the adoption of social and environmental friendly practices between different groups of SMEs in the regional city of Ballarat. Through this research question, the impact of business categories, business size, and owner/managers' education and experience levels on social and environmental practices adopted by SMEs in the Ballarat area was examined using One-way Analysis of Variance (ANOVA). The following subsections present insight into the impact of each demographic variable on the adoption of social and environmental practices in the light of the research findings and the extant literature.

Business Category

This study showed that business category had no impact on the adoption of social and environmental friendly practices. Therefore, it suggests that any business category must be able to adopt the activities which are socially and environmentally friendly. Business category is not imposing a constraint or a disadvantage to engage in the sustainable practices. For example, a strategic social activity such as staff training is not only important to a manufacturing business, but also important to a retail trading business.

Business Age

The study found that business age had no impact on the adoption of social and environmental practices. In other words, there were no significant differences in the adoption of social and environmental practices between businesses established in less than 10 years or businesses established 10 years ago (or more). Business age does not impose a constraint or disadvantage to engage with sustainability adoption.

Business Size

The study found that business size made an impact on the adoption of socially friendly practices within the Ballarat area's SMEs. In this study, the adoption of social practices was found to be higher in medium sized businesses rather than small businesses. This supports Gabzdylova et al. (2009, p. 227) that as firms become larger, their sustainable activities become less oriented to volunteerism, and more oriented to compliance. The higher adoption

of social practices in medium sized businesses may be attributed to the availability to the resources. Small businesses are unable to implement sustainable activities as they do not have enough resources. It confirms Martin-Tapia et al. (2010) study which shows a positive relationship between the size of the firm and the level of engagement with environmental friendly programs. Similarly, Perrini et al. (2007) show the size of the firm impacts on its adoption of socially friendly practices. This is consistent with the view that limited resources of small businesses make them unable to implement sustainable activities (Udayasankar, 2008). Luken and Stares (2005) discuss that small businesses are unable to pay the costs of addressing the social and environmental requirements of their stakeholders and natural environment.

Owner/managers' Education

This study revealed that there is a significant difference in the social practices adoption between owner/managers with three educational levels of elementary, undergraduate, and postgraduate. In other words, owner/managers' educational level made an impact on the adoption of social practices within SMEs in Ballarat. Particularly, owner/managers with undergraduate educational qualifications adopted social practices more than owner/managers with elementary educational qualifications. This result supported the following observations and arguments outlined below.

i) Borga et al. (2009) contend that lack of expertise, information and training about business sustainability is a major barrier for the adoption of sustainability in SMEs. So it could be concluded that owner/managers with higher educational qualification know more about BS, resulting in higher adoption of sustainable practices. In other words, owner/managers with higher educational qualifications have more chance to learn about the advantages of the adoption of BS. As Gadenne et al. (2009) show, owner/managers who gain more information about the environment and environmental friendly business activities and their advantages, have more potential to engage with environmental friendly strategies and practices.

ii) Roxas and Chadee (2012) believe that commitment towards BS and the adoption of sustainable practices require knowledge and experience about what kind of activities best fit the firms needs as well as how to implement such activities. Owner/managers' educational level contributes to enhance such knowledge and skill. Also a positive correlation between the level of education and experience of SME owner/managers

and their commitment towards the environment and community is found in a study by Besser (1999).

iii) Potts (2010) believes that awareness of sustainability in the community could be developed by education, leading to increase in the demand for environmental and social friendly products and services. Owner/managers with high level of education are fairly aware of this demand in the community, so they try to engage in the programs and practices which are supportive for the environment and community. Thus, this study upholds the view that owner/managers' educational level can influence their adoption of sustainable activities.

Owner/managers' Experience Level

The study found that owner/managers' experience level had no impact on the adoption of sustainable practices. In other words, there were no significant differences in the adoption of social and environmental practices between owner/managers with three experience levels. Therefore, this study contends that even an inexperienced owner/manager must be able to adopt the activities which are socially and environmentally friendly. Owner/managers' experience level is not imposing a constraint or a disadvantage for SMEs in Ballarat in supporting local community and environment. For example, a strategic environmental activity such as recycling is not only important to a business with a highly experienced owner/manager, but also important to a business with an inexperienced owner/manager.

6.2.4 Research Question 4

What is the relationship between sustainability adoption and the challenges SMEs face in embracing sustainability in a regional city of Australia?

This research question examines the relationship between the effective factors on sustainability adoption and the social and environmental friendly activities adopted by regional SMEs in Australia. Two models (adoption of social and environmental practices) were found using logistic regression. Each model contained five independent variables (role of stakeholders in driving sustainability, instrumental drivers to strategic competitive advantage, negative perceptions on sustainability, intrinsic engagement for sustainable communities, and resistance to change). The following subsections present insight into the

impact of these five factors on the likelihood that respondents reported that they have adopted social and environmental practices (it means that whether they are social and environmental friendly SMEs) in the light of the research findings and the extant literature.

Model of the Adoption of Social Practices

The full model of the adoption of social practices containing all predictors (five factors) was statistically significant. From five independent variables, only three made a unique statistically significant contribution to this model. These three significant predictors were role of stakeholders in driving sustainability (F_1), negative perceptions on sustainability (F_3), and resistance to change (F_5). Using logistic regression, the following model of the adoption of social practices was found.

$$Y_{Social} = 1.256 + 0.131F_1 + 0.113F_2 - 0.807F_3 + 0.011F_4 - 0.271F_5$$

A significant and positive correlation was identified between the adoption of social practices and the role of stakeholders in driving sustainability. This finding reinforces the argument presented by other scholars (Rutherfoord et al., 2000; Azapagic, 2003; Kerr, 2006; Aragon-Correa et al., 2008; Revell et al., 2010; Collins et al., 2010; Evans & Sawyer, 2010; Wells, 2011) regarding the effective role of stakeholders in driving sustainability in regional SMEs. It also supports the argument by Dunphy et al. (2007) who believe that achieving strategic sustainability depends on value adding, adopting new business sustainability practices, and meeting the needs and interests of different stakeholders. Stakeholders' engagement with the business is expressed through different ways such as evaluating the business performance based on the sustainable development strategy. Then, the identification of stakeholders and understanding their needs and wants are the preconditions for a successful and sustainable business (Azapagic, 2003). Moreover, engaging stakeholders in the business decisions is one of the important strategy for business sustainability (GRI, 2014). This study found that the view of Evan and Sawyer (2010) about the stakeholders is supported. They believe that stakeholders are only satisfied with the business activities, if the business policies and strategies regularly respect the community and natural environment (Evans & Sawyer, 2010). However the finding of the current study contradicts the view of Udayasankar (2008) who belives SMEs are usually less visible to government and environmental bodies and stakeholders.

The study has indicated two significant and negative relationships between the adoption of social practices and negative perceptions on sustainability and resistance to change. This suggested that the more negative perception of owner/managers on sustainability and the more resistance of owner/managers to change, the less likely it is that SMEs adopt the social practices in Ballarat. In this study, the strongest predictor of the adoption of social practices was negative perceptions on sustainability. This indicated that respondents who had negative perceptions on sustainability were over two times more likely to report non-adoption of the social practices than those who did not have negative perceptions on sustainability, controlling for all other factors in the model. These results uphold the argument that moral and ethical perceptions of the owner/managers regarding the community and the environment impact on their engagement with sustainability (Kusyk & Lozano, 2007). It also supports the argument by Naffziger and Montagno (2003) in which the owner/managers with positive attitudes towards the environment and society, are more ready to spend the time and resources on the sustainability practices. Moreover, Gadenne et al. (2009) find that lack of time which is related to less positive attitudes, impact on the adopted practices in SMEs. Evans and Sawyer (2010) believe that SME owner/managers' attitudes towards the customer satisfaction and dealing with suppliers is significantly effective in the adoption of sustainable practices. In contrast, some studies (e.g. Petts et al., 1998; Tilley, 1999; Hillary, 1999; Schaper, 2002; Prater & Ghosh, 2005) show that owner/managers' attitudes towards the sustainability do not impact their environmental and social friendly behaviour or practices.

Model of the Adoption of Environmental Practices

The full model of the adoption of environmental practices containing all predictors (five factors) was statistically significant. Like the model of the adoption of social practices, only three independent variables made a unique statistically significant contribution to this model. These three significant predictors were negative perceptions on sustainability (F_3), intrinsic engagement for sustainable communities (F_4), and resistance to change (F_5). Using logistic regression, the following model of the adoption of environmental practices was found.

$$Y_{Environmental} = 1.678 + 0.057F_1 + 0.134F_2 - 0.351F_3 + 0.423F_4 - 0.51F_5$$

This study found a significant and positive correlation between the adoption of environmental practices and the intrinsic engagement for sustainable communities. This finding supports the argument presented by Kusyk and Lozano (2007). They believe customers, suppliers and community are the most effective drivers to adopt responsible activities in SMEs. Supporting

the community and engaging with community's programs is an indication of a sustainable SME (Evans & Sawyer, 2010). The finding also substantiates the argument of Spence (2007) who believes that SMEs prefer to alter their physical integrity rather than their ethical integrity through the adoption of socially and environmentally friendly practices as they are an integral part of their local community. In addition, Gadenne et al. (2009) consider respecting the environment and community in which SMEs operate as an ethical concern. They believe that owner/managers, who perceive environmental management as an ethical issue, will be more likely to involve in a group of environmental friendly practices like recycling and waste reduction irrespective of engaging in formal certification process (Hillary, 1999).

The study indicated two significant and negative relationships between the adoption of environmental practices and negative perceptions on sustainability and resistance to change. This suggested that the more negative perception of owner/managers on sustainability and the more resistance of owner/managers to change, the less likely it is that SMEs adopt the environmental practices in Ballarat. In this study, the strongest predictor of the adoption of environmental practices was resistance to change. In other words, respondents who were resistant to change were over 1.6 times more likely to report non-adoption of the environmental practices than those who were not resistant to change, controlling for all other factors in the model. This finding corroborates the similar observations made in the earlier studies such as Gadenne et al. (2009) in which a significant positive relationship was found between owner/managers' attitudes towards the environment and their adopted environmental friendly activities. Owner/managers' attitudes play a prominent role in the adoption of sustainability by SMEs. Some scholars believe that SMEs perceive little individual impact on the environment leads to little responsibility felt by owner/managers towards the environment and social community (Yu & Bell, 2007; Bos-Brouwers, 2010). Such a perception of little individual impact on the environment make owner/managers resistent to change their attitudes towards the environment and the community. Also suspicion about the financial returns from sustainability investments (Petts et al., 1998; Revell & Rutherfoord, 2003; Bos-Brouwers, 2010; Revell et al., 2010) make the situation worse. Furthermore, the needed time for the adoption of sustainability practices and the cost of such practices (Hillary, 1999; Tilley, 1999; Biondi et al., 2000; Lepoutre & Heene, 2006; Roberts et al., 2006) make the owner/managers unwilling to alter their activities to environmentally friendly ones.

6.3 Revised Framework of the Research Objectives

Figure 3.1 (conceptual framework) used to guide the emprical research is now revised based on the findings of this study. It may be recalled that two sets of SME business practices make up its orientation toward sustainability in this study. One is social practices in regards to the regional community and the other set is environmental practices in regards to the natural environment. The level of adoption of these practices in daily operations marks out the sustainability in SMEs of Ballarat. The modified conceptual framework in Figure 6.1 illustrates the relationships between the latent variables considered in the research objectives. In particular, it shows five factors affecting the adoption of sustainability (in terms of social and environmental practices) in Ballarat area's SMEs. Grey boxes represent the drivers and black ones represent the barriers to the adoption of sustainable practices. Two demographic variables of business size and owner/managers' educational level have an impact on the adoption of social practices. In this figure, blue lines represent the relationships between the adoption of social practices and the five factors affecting the adoption of sustainability. As shown in Figure 6.1, the adoption of social practices has:

1. A strong and positive relationship with the role of stakeholders in driving sustainability.
2. A strong and negative relationship with the negative perceptions on sustainability.
3. A strong and negative relationship with resistance to change.

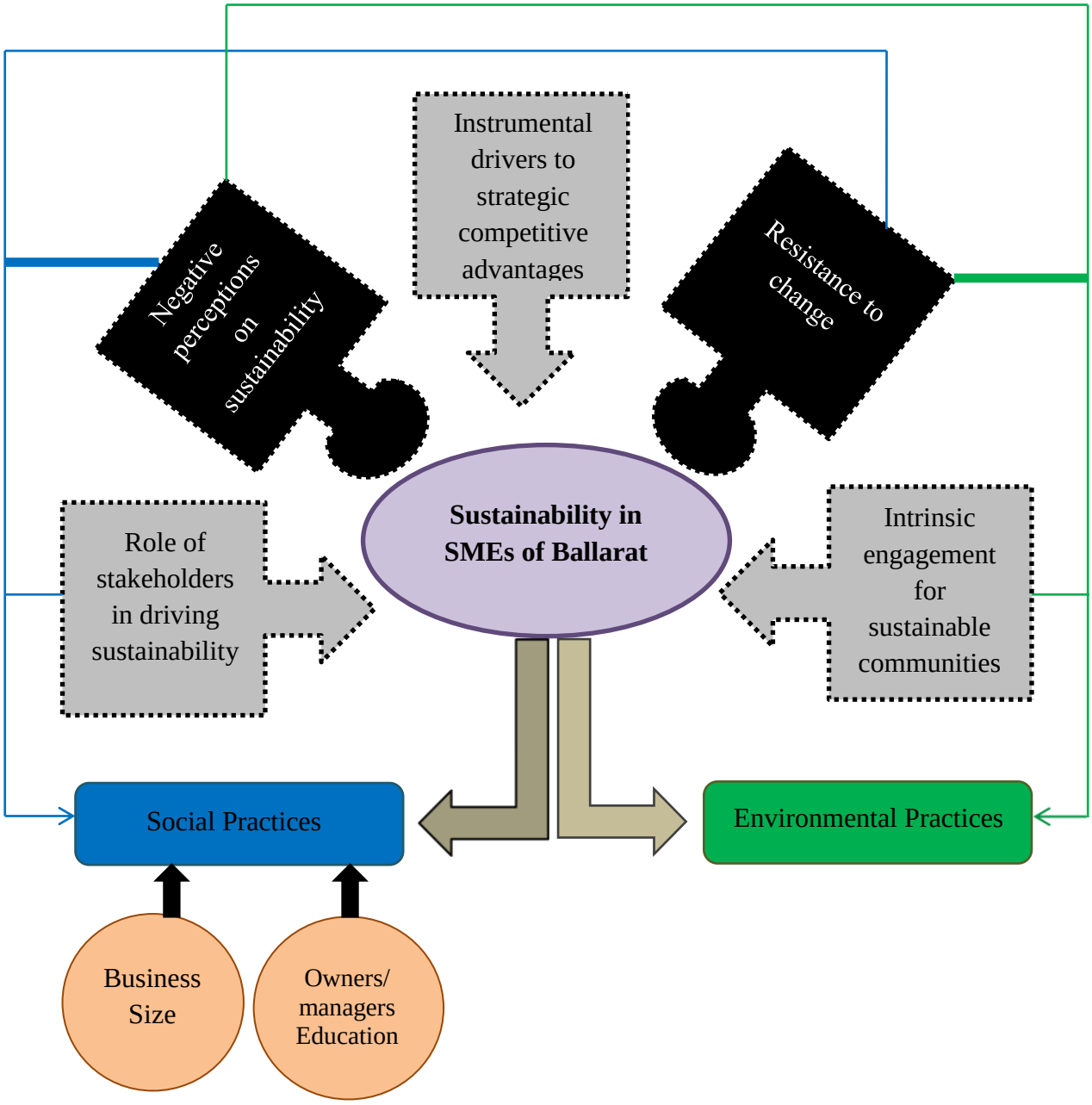
The strongest predictor of adoption of the social practices was negative perceptions on sustainability which is shown by a thick blue line.

In Figure 6.1 green lines represent the relationships between the adoption of environmental practices and five factors affecting the adoption of sustainability. As seen in the figure, the adoption of environmental practices has:

1. A strong and negative relationship with the negative perceptions on sustainability.
2. A strong and positive relationship with the intrinsic engagement for sustainable communities.
3. A strong and negative relationship with resistance to change.

The strongest predictor of adoption of the environmental practices was resistance to change represented by a thick green line.

Figure 6.1 Revised Conceptual Framework



Source: Author

6.4 Summary

This chapter illustrated the way in which the study findings relate to, contrast and extend the existing literature and how they contribute to extending the theory and knowledge of the BS in SMEs operating in the regional city of Ballarat. In particular, this chapter provided a discussion of the research findings around the research questions. Implication for each research component of the framework as proposed in Chapter Three has also been drawn and discussed. A revised framework based on the research findings is proposed which may be used for further research, making predictions, providing managerial advice or offering suggestions for shaping and influencing regional SMEs' sustainability path.

This chapter discussed the study findings and the underlying similarities and differences found in the current literature. The findings confirm some drivers and barriers impacting the adoption of sustainability in regional SMEs and some significant relationships between these factors and the environmental and social practices' adoption. This chapter shows the way in which the adoption of social and environmental practices is related to some factors and demographic characteristics of regional SMEs. The final chapter discusses the contributions of findings, limitations of this research and future research recommendations.

Chapter 7: Conclusion

7.1 Introduction

This final chapter presents the contributions of this research on sustainability adoption by SMEs in the Ballarat area. Both theoretical and practical contributions are raised in this chapter with regards to the research findings, which are briefly summarised. This chapter also outlines the practical implications for the pursuit of sustainability in SMEs operating in regional areas. In addition, it provides useful recommendations to SME owner/managers based on its insight into the problem. Finally, this chapter presents an overview of the future research to address in academic and business contexts.

7.2 Contribution to Theory

The theoretical contribution of this study is that it provides a guide for empirical investigation of the factors affecting SME sustainability using Stakeholder Theory (ST). It contributes to identifying internal and external stakeholders that influence the sustainability adoption within regional SMEs. A conceptual framework is built up from the literature review and is presented in Chapter Three. The unique conceptual framework used in this thesis is adopted and mediated from the ST. This conceptual framework is underpinned by a practical perspective that enables the collection and analysis of data for the purpose of investigating the social and environmental practices adopted by regional SMEs and factors affecting such adoption.

7.3 Contribution to Knowledge

Degradation of natural resources such as land, water and air is increasing (Lawrence et al., 2006). Also there is growing pressure for SMEs to address the various needs and expectations of their stakeholders in a socially sustainable and ethical manner (Elkington, 1997; Roxas & Chadee, 2012). So the way in which businesses and communities respond to such a sustaianbility challenge is very important. Is it possible for SMEs in regional areas contribute individually or collectively to environmental and social concerns? What are the practices that they could adopt in order to respond to this challenge positively?

Despite the significant role of SMEs in sustained global and regional economic recovery, limited systematic research has been carried out on SMEs' orientation towards BS, which has been attributed to lack of empirical data (Ayyagari et al., 2007). This research makes several contributions to the knowledge on the basis of ST. First, the data related to regional SMEs in Australia has been improved by the findings of this research. Such information on SMEs has been very scarce (Ayyagari et al., 2007). Second, this study goes beyond presenting simple data about the sustainability practices adopted by SMEs in Regional Australia. It evaluates the factors affecting such adoption. This allows us to identify contributing stakeholder drivers to sustainable development of SMEs, which can lead to regulating and reducing the inhibitors which prevent SMEs to becoming more sustainable. By evaluating specific factors affecting sustainability in regional areas, this study goes beyond the static and isolated picture of SMEs and conducts an assessment of the environmental and social dimension of the SME sector.

7.4 Summary of the Thesis

7.4.1 Research Questions and Conceptual Framework

This research focuses on the sustainability adoption of SMEs in Regional Australia. It starts by highlighting the importance of SMEs in regional areas and their contributions to environmental and social issues. According to ABS statistics, 95% of all businesses in regional areas of Australia are SMEs (Australian Bureau of Statistics, 2011). However, there is a limited number of studies about the sustainability adoption in regional SMEs. Through this research, the seriousness of sustainability adoption and its relationship with economic growth and development in regional areas has come into prominance. In other words, future economic development is dependent on regional areas and needs to consider the significant role of SMEs without undermining ecosystems and natural and human resources. In recent decades, there has been disagreement concerning the extent of SMEs' sustainable practices. There is also a lack of clarity on how best to implement sustainable practices in the small business context (Dailey & Huang, 2001), and in particular virtually no clear regional agency role for SMEs in such practices. The question then arises of the possibility of SMEs applying concepts, principles and practices which embody sustainable development within regional areas of Australia. To gain a deeper understanding of ways in which the concepts, principles and application of BS work in regional SMEs, this research explores the social and environmental practices that SMEs adopt in Regional Australia in order to have a sustainable

business. The research explores factors which have emerged as dominant and effective ones in relation to the sustainability adoption by regional SMEs. Also this study investigates the relationship between sustainability adoption and the challenges SMEs face in embracing sustainability in Regional Australia.

A conceptual framework is built up, canvased from the literature review and is specified in Chapter Three. The unique conceptual framework used in this study is a combination of internal and external factors affecting BS adoption in SMEs operating in regional areas. The framework specified in this research is the starting point for investigating the nature of the environmental and social footprints of SMEs in regional context. Moyeen and Courvisanos (2012) highlight the need for such a project, and this framework opens up the prospect of a rigorous and coordinated analysis that is currently seriously lacking. The external and internal factors (as drivers and barriers) for the adoption of sustainable practices need to be placed within the status of the SMEs. Two sets of SME business practices make up this status. One is social practices in regards to the regional (or local) community (for example, sponsorship of a local football club). The other is environmental practices in regards to the natural environment (for example, extent of waste recycling). How frequently are these practices adopted by the SMEs within the region under investigation? The answer to this question identifies the BS status of SMEs. Such practices provide a regional economic agency dimension to SME sustainability.

7.4.2 Methodology

The business and management literature has attracted an increasing number of conceptual and theory building studies in the area of large business CS and Corporate Social Responsibility. Also past studies about the status of sustainability in SMEs are usually conceptual or theoretical (Van Marrewijk & Werre, 2003; Kuckertz & Wagner, 2010; Linnenluecke & Griffiths, 2010). In contrast, this study relied on primary data collected from 233 SMEs operating in a regional context and is one of the first empirically based studies undertaken in a regional area to investigate the sustainability adoption by SMEs.

This study utilised a survey questionnaire to find out the social and environmental practices adopted by regional SMEs and the factors affecting such adoption. The reliability and internal consistency of the scales used in the questionnaire are reported in this study which confirmed

that scales are highly reliable. This research stands on pre-test, pilot study and main study and adopts a quantitative research framework. It employs a survey for collecting quantitative data. The main study observed the response rate of 28.77% which is approximately close to the targeted response rate of 30%. The lack of studies using quantitative techniques, particularly in the area of BS within regional SMEs, positions this quantitative study uniquely within the literature, thereby strengthening its contributions to the field of BS in SMEs operating in regional contexts.

7.4.3 Research Findings

As suggested by the research questions, the research objectives are to find out the social and environmental practices adopted by regional SMEs in order to have a sustainable business, and factors affecting BS adoption in such SMEs. Given this empirical basis, the results of this research indicate that, despite strong links to social and environmental practices, the regional SMEs under investigation show no clear strategic path towards a broader sustainable development business strategy. Their role as regional development agents towards BS is limited. However, they certainly understand about "doing the right thing", but there is a lack of understanding by these firms of the totality of BS engagement and an inability to pursue such a complete strategy due to lack of time, resources and the relative lack of appreciation that BS requires a systems management approach which links to all stakeholders in the region and even to the "global village" (Rushton, 2002). In this study, the findings show the regional SMEs not to be attuned to ecosystems management (as defined in Section 1.2), only contributing to social and environmental management of sustainability at a basic compliance stage, as per the Dunphy et al. (2007) sustainability phase model.

With regard to the effective factors on BS in regional SMEs, results of this research show that role of stakeholders in driving sustainability, instrumental drivers to strategic competitive advantage and intrinsic engagement for sustainable communities contribute to the adoption of sustainability adoption by regional SMEs. Whereas negative perceptions on sustainability and resistance to change act as inhibitors to the sustainability adoption by such SMEs. The research finds a significant support for the hypothesis that business size and owner/managers' education levels have effects on the adoption of social practices within the Ballarat area. However, the results show that business category, business age and owner/managers' experience level have no significant effect on the adoption of sustainability by SMEs in the

regional city of Ballarat. In other words, any business category in any age rang must be able to adopt the activities which are socially and environmentally friendly. Furthermore, even inexperienced owner/managers should be able to adopt such activities.

7.5 Limitations

As with any quantitative study using statistical analysis, the research acknowledges that there are limitations to this research, which also suggests opportunities for future research. This research is subject to the typical limitations of quantitative cross-sectional and survey research. These limitations are briefly outlined below.

In this research, the population frame of small and medium sized regional Australian businesses is obtained from the Manta Website, as there was a lack of statistical information and contact details on regional SMEs in Ballarat which forced the researcher to use the registered SMEs on this website. However, the large number (1449 SMEs) on the website ensures that this database is representative of the nature of SMEs in Ballarat. Finally, there were few businesses on the Manta database with contact addresses that were out-of-date or with no contact address at all. Adjustment for this resulted only in a marginal reduction of the database. Therefore, any generalisations that are made in the study are limited to the population of Ballarat's SMEs provided in the electronic database, while businesses without public information on the Manta website and those with unlisted contact details had no chance of participating.

Given the international variation in defining SMEs, firms classified as SMEs in this research may be categorised differently in other countries. Hence the findings of this research may not necessarily represent the sustainability orientation of firms that are categorised as SMEs in other countries. Also, cross-national differences in SME regulation and business environments may cause differences in practices regarded as sustainable. Furthermore, the measurement of the adoption of sustainable practices does not take into account the extent and magnitude of specific sustainability activity that SMEs undertake.

The research is limited by the time and resource constraints involved in completing the doctoral study. In the survey conducted in this study, a total of 265 completed questionnaires were collected back out of 921 that were distributed. Thus, the response rate was 28.77% which was very close to the targeted one of 30%. Also, according to Hart (1987) response

rate in industrial or business survey vary from 17% to 60%, with an average of 36%. Therefore, the response rate of 28.77% was found to be within the acceptable range of response rates for business surveys.

The findings in the research are limited by the extent to which the respondents were honest, careful, and without bias in responding to the survey instrument. Since this research is a once-off survey which is a self-assessment instrument with only a limited set of statements from which to choose from, it is unavoidable that respondents answered based on their perception without any external help. In this respect, this research assumes that perceptions based on statements read in the questionnaire drive the adoption or rejection of sustainable practices. For instance, it is possible that the population frame would have found it difficult to differentiate between 'strongly agree' and 'agree' in a particular statement, and a response could mark neutrality. Limiting this study to quantitative measurement alone, there was no opportunity in the questionnaire for comments and remarks to qualify such differentiation. There is also a potential limitation of biased survey answers which may not reflect the accurate perception of the participant. In other words, respondents may have provided (unconsciously or otherwise) inaccurate information, resulting in measurement error. For instance, respondents may have provided over-optimistic attitudes to environmental and social concerns as this may be considered 'socially desirable'. However, future studies can use mix-method research to conduct BS research in a regional SME context to investigate this further.

7.6 Implications for Future Research

Despite the considerable amount of research on sustainability adoption, the study of this issue on a regional SME basis is still nascent and much is still to be learned. As a further contribution, this study introduces the important factors affecting the sustainability adoption in an Australian regional area's SMEs to hypothesise about differential emphases placed on environmental and social initiatives, their effect and the ensuing outcomes. Such an investigation is long overdue, since most research to date has been focused on the sustainable activities in large corporations in major cities. So it could be a potential source of future research to determine whether replications of this survey in other Australian regional areas produce similar results, as repeated findings are required to increase the validity of this study (Lucas et al., 2009).

The findings of this research show that Ballarat's SMEs fail to support many environmental management systems and policies, thus providing only a very limited role in improving the impact of the business environment on the local social and environmental surroundings, let alone the wider national and global environs. However this research does not have data as to why this was the case and this would be an interesting and potentially fertile topic for future work. In other words, one of the future research opportunities could be related to finding out why regional SMEs act in this way. For example, do they adopt environmentally friendly activities such as recycling and waste reduction because of the compliance with regulations supported by infrastructure easily available (like Council pick up regularly)? In other words, is their approach to adopt sustainability motivated principally by economic sustainability, directly linked to regulation compliance rather than by their own positive attitudes towards the environment and community? Future research can also investigate this issue using qualitative and mixed methodologies. In addition, another future research can be related to examine the extent that some particular practices are related to the factors affecting the sustainability adoption in regional SMEs. Using correlation techniques, such relationship could be identified in future research.

In this research, the survey instrument was addressed to the owner/manager of SMEs in Ballarat. In other words, owner/managers of SMEs were the first point of contact in this research as they have the strongest influence within the firm. While this research recognised that owner/managers play a key role in sustainability adoption, it is possible that customers of regional SMEs have different views and evaluate such businesses in different ways. So what factors affect sustainability adoption in regional SMEs based on customers' views and the impact of sustainability adoption on the customers' purchase decision could be some potential future research topics.

In this research, classification of the business category was made based on the 'Australian and New Zealand Standard Industrial Classification' published by the Australian Bureau of Statistics (Mardaneh, 2012b). Then the differences of the social and environmental practices adoption were investigated between these categories. However, another crucial classification could be Business to Business (B2B) versus consumer oriented firms. Hence one of the potential future research directions could be related to the investigation of sustainability adoption between these two categories to find out the significant differences in the adoption of sustainable practices.

Factors affecting the adoption of BS within the Ballarat area's SMEs were classified under five components using Exploratory Factor Analysis (EFA) techniques. These five factors were role of stakeholders in driving sustainability, negative perceptions on sustainability, instrumental drivers to strategic competitive advantage, resistance to change and intrinsic engagement for sustainable communities. In future research, these factors could be confirmed (or rejected) using Confirmatory Factor Analysis (CFA) techniques in other regional areas of Australia. Moreover, using Ordinary Least Squares (OLS) technique, the strength and direction of the relationships between these factors and the adoption of sustainable practices could be investigated in future research.

7.7 Implications for Practice by Regional SMEs

Being the mainstay of Regional Australia's development, SMEs are a key group player in achieving sustainable development due to their significant contribution to the national economy, environment and society. This study has tried to look systematically into the environmental and social practices of regional SMEs. The present research is relevant from both the theoretical and practical perspectives. From a theoretical angle, this study explicates the value of social and environmental initiatives and suggests in a regional context what factors can be effective in pursuing sustainability within SMEs. From a practical perspective, this study covers an area of much debate and importance. The findings provide insight into the true benefits of sustainable practices and offer guidance especially for regionally engaged SME owner/managers. The results also provide motivation for practitioners who often view the journey toward sustainable development as a costly task. Further, the study's differential look at the factors affecting the sustainability adoption carries important implications for sustainable development which has become a necessity for many firms to remain competitive.

The findings of this study with regional SMEs located in Ballarat align well with and support this determination. This study showed that the local community is a very important stakeholder of SMEs in Ballarat and their commitment to the community is generally quite extensive. The results of this study in particular can be used as a basis for developing the social and environmental awareness of SMEs in the Ballarat region. The results will also enable policy makers to assist regional SMEs to play an active role in developing business sustainability. The results can provide practical advice on how to contribute the

implementation of sustainable practices and assist SMEs to recognise and understand that they are already practising sustainability at some level. It could be done through creating a forum for sharing experiences and interchanging ideas; informing regional SMEs about the business benefits of being sustainable; and distributing information about the types of initiatives for SMEs to become sustainable.

One of the characteristics of SMEs is diversity, so it should be considered that 'one-size-fits-all' approach for engaging SMEs in the sustainability agenda will not work (Yu & Bell, 2007). As suggested by Yu and Bell (2007), any strategies for contributing SMEs to engage in social and environmental practices must be appropriate to the size and complexity of the operation. Rather than offering a detailed management framework, this research recommends three key areas for SMEs' further improvement.

Training

Whatever the barriers and challenges are that SMEs face, training and education appear to be very significant and effective in Ballarat area's SMEs. As suggested by Yu and Bell (2007), before selecting the learning materials, it is very important to set the right priorities particularly for owner/managers, as their perceptions, attitudes and commitments are crucially important in the adoption of sustainable activities. Training programs should include some materials on general sustainability oriented issues such as concepts, advantages, practices, and how to implement these issues in the management systems of SMEs. The key role and responsibilities of owner/managers in the adoption of sustainable practices should also be emphasised. Furthermore, training programs should be relevant and affordable for a majority of SMEs.

Using posters and newsletters is one of the simplest and cheapest ways for raising awareness of sustainability among SMEs' employees. These information tools provide simple and easy to understand facts about sustainability and explain how each employee can contribute to ways of making the business more sustainable. Also, the internal training practices could be expanded to include a short introduction to sustainability and the importance of being a sustainable business in the community. Moreover, leadership training course is another powerful tool to motivate owner/managers of SMEs to adopt sustainable business practices. As suggested by Gadenne et al. (2009), government campaigns and promotional advertising are two effective ways to enhance SME owner/managers knowledge about benefits associated with environmental and social friendly practices.

Owner/managers of SMEs should encourage all employees to suggest their innovative ideas which contribute to the better adoption of business sustainability practices. This could be accompanied by monetary and non-monetary encouragements for best ideas, resulting in further motivation of employees to participate. As stated by Sawyer and Evans (2009), most of regional SME owner/managers never receive any ethical, financial, technical and educational support for adopting environmentally friendly and socially responsible practices. The provision of programs for enhancing the awareness of the principles and advantages of engagement with sustainable development is demanded by the majority of SME owner/managers. Further, SME employees could be encouraged by such awareness-raised owner/managers to take part in community events and promote the business' value to the community. Also participation in such events makes employees and owner/managers able to acquire innovative ideas on how to further create environmentally friendly and socially responsible products and services which are vital for future business growth.

Networking

As SMEs are generally less accessible than large corporations, networking with main stakeholders would be effective to motivate them to adopt sustainable practices. Networking and group certification is found as one of the effective and easy solutions for SMEs to implement international management standards such as ISO 14001 (Ammenberg et al., 2000). Networking is useful to make SMEs' commitments and achievements visible to internal and external stakeholders. It also could help SMEs to identify and tackle their problems. Improving SMEs' relationships with local governmental bodies is very imortant because understanding relevant regulations and ensuring legislative compliance are the basic issues for any further improvement. However, as SMEs are usually unable to communicate well with their stakeholders, support strategies are needed to help them to develop their communication power and relationships with other stakeholders. According to Azapagic (2003), effective communication is necessary for upholding the concept of business sustainability and also promoting the business's achievements.

As suggested by Kerr (2006), SMEs require a learning culture which educates, trains and develops their employees to learn the skills required for innovative thinking and adopting environmentally friendly and socially responsible practices. This culture could be created through communicating with stakeholders. As mentioned by some scholars (de Bruijn & Lulofs, 2000; Hunt, 2000; Revell & Rutherfoord, 2003; Simpson et al., 2004) networking

could help SMEs to overcome the specific barriers to engage with sustainable practices. Networks in the form of trade associations, environmental agancies, local government and employee organisations (Lawrence et al., 2006) could encourage SMEs to learn about sustainability. The support provided by them could be company specific and face to face (Simpson et al., 2004). Based on Friedman and Miles (2001), networks motivate SMEs to participate in sustainability programs through creating knowledge and awareness and transferring them to the members (Lawrence et al., 2006). Due to a greater diversity of knowledge in networks rather than single firms, they are able to coordinate activities among the members, enhace their knowledge and information and reduce the individual transaction costs (Lawrence et al., 2006). In this light, it is noteworthy of Lawrence et al. (2006) to find that SMEs which are members of the Sustainable Business Network (SBN) show more involvement in sustainable practices compared to non-members, and also progress from environmental to ecological sustainability management (Graymore et al., 2010)

Collaboration

Due to limited resources of SMEs, collaboration with external stakeholders is one of the essential and effective ways to improve their sustainability adoption. Collaboration can firstly establish between SMEs operating in a same business category and the same geographical location. This will help SMEs to solve common problems mutually and find joint opportunities, share information and experiences and resources as well (Biondi et al., 2000). Moreover, local authorities play a significant role in facilitating SMEs towards sustainable development. SMEs can cooperate with these authorities to obtain some relevant advice and support. In return they can provide regular feedback on the progress to these authorities. In addition, owner/managers of SMEs need to involve stakeholders in developing sustainability strategies. For this purpose, they need to gain information about the sustainability and partnership networks available to them (Kerr, 2006).

7.8 Summary

This research achieved its objectives by investigating the social and environmental practices adopted by Ballarat area's SMEs and factors affecting sustainability adoption within these SMEs by the use of ST. A quantitative approach was undertaken to investigate the research questions. The findings of the data analysis showed that demographic characteristics such as business size and owner/managers' educational level have impact on the adoption of socially responsible activities. This research introduced an innovative conceptual framework, based on ST that enables the examination of the internal and external factors impacting on the adoption of sustainable practices in SMEs operating in regional areas. In other words, this framework of analysis can assess sustainability of SMEs in a region or locality; a framework that to this date does not exist – unlike the many corporate frameworks available for large business sustainability investigations. Using EFA, this research explored three drivers and two inhibitors which affect the adoption of sustainability based on the views of SME owner/managers in Ballarat. With this, the research provides a major contribution to extending the conceptual and theoretical studies in the field of sustainability adoption by regional SMEs.

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Appendix 1: Plain Language Information Statements

FACULTY OF BUSINESS

PROJECT TITLE:	Sustainable Practices of Small Businesses in Regional Australia
PRINCIPAL RESEARCHER:	A/Prof. Jerry Courvisanos
OTHER RESEARCHERS/ STUDENT:	Dr. Raveendranath Ravi Nayak Parisa Salimzadeh

Dear Madam/Sir

You, as the owner/manager of a small business in Ballarat, are invited to participate in a PhD research study being undertaken by Parisa Salimzadeh, under the supervision of Associate Professor Jerry Courvisanos and Dr. Raveendranath Nayak of The Business School at the Ballarat Campus, entitled: Sustainable Practices of Small Businesses in Regional Australia.

The aim of this research is to identify the various social and environmental practices and activities of small businesses in the Ballarat region. A significant challenge for any business is to ensure that it contributes to a better quality of life today without compromising the quality of life of future generations. So this research wants to determine what factors contribute to the way your small business deals with this issue. Identifying such factors in this study will give businesses a clear path to improve these practices.

Your address and telephone number have been obtained from the Manta Website which is the world's largest online community for promoting and connecting small businesses. Participation in our survey involves responding to a series of questions which will take approximately 10 minutes to complete. If you choose to participate, please complete the questionnaire and return it in the enclosed postage-paid envelope within two weeks from receipt of this letter.

Responses to this questionnaire will be anonymous and confidential. Please note that your participation in this research is completely voluntary, and if you do not wish to take part you are not obliged to do so. If you do not complete the survey in full we will not use your data. However, you should note that it is not possible to withdraw from this study once the survey is returned by mail.

The postage paid envelope provided is coded to allow us to track non-respondents; however, the questionnaire will be removed and immediately separated from the envelope upon receipt. The questionnaire and the envelopes will then not be able to be linked in any way. The return of the survey will be recorded on a database using the coded envelope only (this will have no link to the questionnaire) and the envelopes will then be shredded immediately so as to assure complete confidentiality. All data from the research will be stored securely by the principal researcher. You should note however that the confidentiality of information that you provide is subject to legal limitations. The research data will only be accessed by the researchers named above. Data collected from the questionnaires will be destroyed after 5 years.

A short summary report of the results from this survey will be prepared. If you want a copy of this report, you can request for one by emailing to the below mentioned email ID.

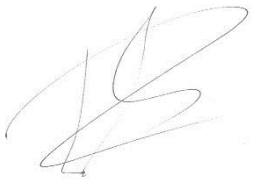
In the event that you feel any distress, Lifeline Counsellors have a 24-hour telephone crisis support service, and can be reached on **13 11 14**.

If you have any questions or concerns about completing the questionnaire, you may contact me on (03) 5327 6811 or p.salimzadeh@federation.edu.au

Thank you in anticipation of your valuable participation. Your views are important to us.

Sincerely

Parisa Salimzadeh
PhD student in Business
The Business School
Federation University Australia



If you have any questions, or you would like further information regarding the project titled **(**Sustainable Practices of Small Businesses in Regional Australia**)**, please contact the Principal Researcher, **(**A/Prof. Jerry Courvisanos**)** of The Business School of Federation University Australia:
PH: 03 5327 9417
EMAIL**:** j.courvisanos@federation.edu.au

Should you (i.e. the participant) have any concerns about the ethical conduct of this research project, please contact the Federation University Ethics Officer, Research Services, Federation University Australia, PO Box 663, Mt Helen VIC 3353. Telephone: (03) 5327 9765, Email: research.ethics@federation.edu.au

CRICOS Provider Number 00103D

Appendix 2: Support Letter from Committee for Ballarat

Committee for BALLARAT

19 March 2014

Associate Professor Jerry Courvisanos
Associate Dean Research,
Faculty of Business,
Federation University Australia,
P.O. Box 663
BALLARAT. VIC. 3353

Dear Jerry
Re: Letter of Support – Parisa Salimzadeh, PhD Student Research

It has been brought to our attention that one of your PhD students, Parisa Salimzadeh, will be conducting research into identifying the various social and environmental practices and activities of small businesses in the Ballarat region. Importantly, the impact small business has on contributing to the quality of life we enjoy today, without compromising the needs of future generations.

This research sits strategically within Committee for Ballarat's role and purpose as a visionary membership body, providing thought leadership for major projects and initiatives that enable an improved quality of life for our community in Ballarat and Western region.

Ballarat's population is on an accelerating growth trajectory (~2% per annum) with an estimated population growth of 30,000 anticipated over the next 15 year period and a projected population of 128,00 by 2026.

The Committee for Ballarat commends the Federation University - Faculty of Business and your PhD Student, Parisa Salimzadeh, on this research. We envisage this will greatly assist in better understanding the linkages between small business and how they can support build better communities that will lead to delivering sustainable social and economic growth in our region.

Yours sincerely

John Kilgour
CEO – Committee for Ballarat

cc: Judy Verlin, Chair – Committee for Ballarat

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web: www.committeeforballarat.com

LBWR: phone: (03) 5332 1247 email: ed@lbwr.com.au web: www.lbwr.org

LEADERSHIP ballarat & western region

Appendix 3: Survey Questionnaire

Business and Owner/Manager Demographics

Is your business in Ballarat a franchisee of a bigger national/international firm?

☐ Yes ☐ No

Is your business in Ballarat a branch of a bigger national/international firm?

☐ Yes ☐ No

In which category does your firm primarily operate? Please tick one category only.

☐ Agriculture, Forestry & Fishing	☐ Financial & Insurance Services
☐ Mining	☐ Rental, Hiring & Real Estate Services
☐ Manufacturing	☐ Professional, Scientific & Technical Services
☐ Electricity, Gas, Water & Waste Services	☐ Administrative & Support Services
☐ Construction	☐ Public Administration & Safety
☐ Wholesale Trade	☐ Education & Training
☐ Retail Trade	☐ Health Care & Social Assistance
☐ Accommodation & Food Services	☐ Arts & Recreation Services
☐ Transport, Postal & Warehousing	☐ Other (Please specify):…….
☐ Information, Media & Telecommunications	

The items below will provide us with useful information about you and your business. Please answer by ticking the appropriate response.

Gender	☐ Female	☐ Male			
Your age (years)	☐ 18-29	☐ 30-49	☐ 50-64	☐ more than 64	
Age of your business (years)	☐ less than 5	☐ 5-9	☐ 10-19	☐ more than 19	
Number of employees in Ballarat	☐ none	☐ up to 4	☐ 5-19	☐ 20-199	☐ more than 199
Your role in the firm	☐ Owner	☐ Manager	☐ Owner & Manager		
Years of experience in this business	☐ less than 1	☐ 1-5	☐ 6-9	☐ 10-19	☐ more than 19
Your highest educational qualification	☐ No formal education	☐ Primary	☐ High School	☐ TAFE	
	☐ Undergraduate bachelor's degree	☐ Postgraduate qualification	☐ Doctoral/PhD		

Social Practices

The section consists of items relating to the social practices which your business engages. Please identify how frequently you or your business has engaged in these social practices. For each of the items below please tick the most appropriate response.

	Often	Sometimes	Seldom	Never
Sponsored of clubs or community programs (e.g., support community events like Fiona Elsey Cycle Classic)	☐	☐	☐	☐
Been active in community issues (like homelessness or youth unemployment)	☐	☐	☐	☐
Been active in business associations	☐	☐	☐	☐
Shared information with stakeholders	☐	☐	☐	☐
Included stakeholder concerns in business decisions	☐	☐	☐	☐
Created awareness of social concerns within the business	☐	☐	☐	☐
Donated to community fund raising activities	☐	☐	☐	☐
Participated in regional committees of stakeholders (e.g., business round table forums)	☐	☐	☐	☐
Held an 'Open day' for public to visit	☐	☐	☐	☐
Provided free technical assistance to local community or projects (e.g., offer professional expertise, provide business planning advice; assist enterprise training in schools; offer work experience; mentor business start-ups)	☐	☐	☐	☐
Engage in business operations that are socially responsible (e.g., buy fair trade tea and coffee; buy locally; develop products with social benefits; responsible advertising)	☐	☐	☐	☐

If your business has no employees, please go to the next page and ignore the following 6 items.

If your business has one or more employees, please tick the most appropriate response.

	Often	Sometimes	Seldom	Never
Allowed staff paid time off to participate in charitable activities	☐	☐	☐	☐
Allowed staff time off to attend TAFE or University courses	☐	☐	☐	☐
Allowed staff to work flexible hours to fit their family circumstances	☐	☐	☐	☐
Demonstrated willingness to provide congenial workplace conditions	☐	☐	☐	☐
Demonstrated willingness to address staff remuneration issues	☐	☐	☐	☐
Implemented socially inclusive employment policies (e.g., recruit locally where possible; promote healthy work practices; encourage the disadvantaged to apply for jobs)	☐	☐	☐	☐

Environmental Practices

The section consists of items relating to the environmental practices which your business engages. Please identify how frequently you or your business has engaged in these environmental practices. For each of the items below please tick the most appropriate response.

	Often	Sometimes	Seldom	Never
Recycling (e.g., recycle paper; donate computers; avoid disposable goods)	☐	☐	☐	☐
Waste reduction (e.g., adjust printer settings to draft quality; avoid duplication of papers at meetings; donate to charity rather than send Christmas cards)	☐	☐	☐	☐
Energy efficiency (e.g., turn down unnecessary heating; turn off equipment and lights; monitor energy and water use)	☐	☐	☐	☐
Use environmentally friendly products (e.g., eco-cleaning products; products with minimal packaging; green energy supplier)	☐	☐	☐	☐
Work to reduce carbon emissions (e.g., use calls to reduce travel; use bike couriers for local delivery; promote alternative transportation for staff; use low carbon emission cars)	☐	☐	☐	☐
Improve the impact of your business on the local surroundings (e.g., calculate and reduce carbon footprint; improve external area of premises)	☐	☐	☐	☐
Environmental management policies (e.g., have clear environmental policy with targets; communicate your environmental practices to customers, staff, and suppliers; set up a green team; ISO 14001)	☐	☐	☐	☐

Inside your firm

In this section you are requested to determine the extent to which you agree or disagree with each statement as it affects the adoption of social and/or environmental practices in your business. All of these factors are internal to your business. Please indicate your level of agreement with each of the following statements by ticking the most appropriate response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
My firm has low impact on the local community and environment	☐	☐	☐	☐	☐
Business owners cannot be expected to help solve social issues	☐	☐	☐	☐	☐
Environmental issues aren't relevant to my business	☐	☐	☐	☐	☐
I'm not in the right industry to make a difference to local community	☐	☐	☐	☐	☐
Being environmentally and socially friendly increases my business costs	☐	☐	☐	☐	☐
My business has poor infrastructure to support some activities like recycling	☐	☐	☐	☐	☐
My business will not benefit financially from environment-friendly activities	☐	☐	☐	☐	☐
I realise that most of the electricity in Victoria is produced by burning highly polluting brown coal	☐	☐	☐	☐	☐
I am aware of environmental protection programs organised by the government or external organisations	☐	☐	☐	☐	☐
Socially and environmentally responsible businesses have the potential to break into new markets or promote existing markets	☐	☐	☐	☐	☐
Socially and environmentally responsible businesses achieve cost savings from energy or other resource efficiencies	☐	☐	☐	☐	☐
Environmental issues should be a very high management priority	☐	☐	☐	☐	☐
It is the responsibility of every business owner/manager to have policies that help improve society	☐	☐	☐	☐	☐
Contributing to protecting environment and supporting the local community gives me personal pride and enjoyment	☐	☐	☐	☐	☐
Preserving the environment and respecting local community is simply the right thing to do	☐	☐	☐	☐	☐
Business should regulate itself to improve environmental practices	☐	☐	☐	☐	☐
Transition to a low-carbon economy will bring opportunities for business growth	☐	☐	☐	☐	☐

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Small firms should ensure the health and safety of its employees	☐	☐	☐	☐	☐
Small firms should ensure the health and safety of its community	☐	☐	☐	☐	☐
Business must spend some money and efforts for environmental protection and management	☐	☐	☐	☐	☐
Socially and environmentally responsible businesses are able to attract and retain staff	☐	☐	☐	☐	☐
Staff and employees should put pressure on businesses to be socially and environmentally friendly	☐	☐	☐	☐	☐
I don't have enough time to introduce socially/environmentally-friendly activities to my employees	☐	☐	☐	☐	☐

Outside influences on your firm

In this section you are requested to determine the extent to which you agree or disagree with each statement as it affects the adoption of social or environmental practices in your business. All of these factors are external to your business. Please indicate your level of agreement with each of the following statements by ticking the most appropriate response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Socially and environmentally responsible businesses can minimise the risk of damage to their own reputation by dealing with socially responsible suppliers	☐	☐	☐	☐	☐
Suppliers and trade bodies should put pressure on businesses to be socially and environmentally friendly	☐	☐	☐	☐	☐
Government should offer some form of recognition of businesses that have good environmental management practices	☐	☐	☐	☐	☐
It is not the individual responsibility of business owner/managers to solve environmental problems	☐	☐	☐	☐	☐
National and local environmental laws and regulations should be strictly enforced in the business context	☐	☐	☐	☐	☐
Small businesses should leave the government to tackle environmental issues	☐	☐	☐	☐	☐
It's better that government enforces environmental taxes for businesses	☐	☐	☐	☐	☐
Businesses with sound environmental management	☐	☐	☐	☐	☐

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
practices are well supported by customers					
Pressure from existing customers could force businesses to preserve the natural environment	☐	☐	☐	☐	☐
There is an increased public demand for ethical products and services	☐	☐	☐	☐	☐
Being socially and environmentally responsible attracts new customers	☐	☐	☐	☐	☐

Appendix 4: Reminder Letter by Mail

Date

Dear Owner/Manager

A couple of weeks ago a questionnaire was mailed to you because your business was selected to help in a study about the sustainable practices of small businesses in regional Australia. To the best of our knowledge, it has not yet been returned.

I am writing again because of the importance that your business's questionnaire has for helping to get accurate results. It is only by receiving input from nearly everyone in the sample that we can be sure that the results truly represent Ballarat area businesses. If someone at your business has already completed and returned the questionnaire, please accept our sincere thanks. If not, could you please find the time to fill it in for us? We would be especially grateful for your help with this important study.

For your convenience, the questionnaire is attached. It should only take 10 minutes to complete and is anonymous. Please fill in and send back by post to the address below, or scan and send by email.

If you have any questions or concerns about completing the questionnaire, you may contact me on (03) 5327 6811 or p.salimzadeh@federation.edu.au

We hope that you will be able to complete the questionnaire.

Sincerely,

Parisa Salimzadeh
PhD student in Business
The Business School
Federation University Australia
P.O. Box 663, Ballarat
Victoria 3353

Phone: (03) 5327 6811
Email: p.salimzadeh@federation.edu.au

Appendix 5: First Reminder Letter by Email

7 May 2014

Dear Owner/Manager,

Thank you for providing your email address to Ms Sue Veitch on the phone at Federation University. We emailed a questionnaire to you on the 27 March because your business was selected to help in a study about the sustainable practices of small businesses in regional Australia. To the best of our knowledge, it has not yet been returned.

I am writing again because of the importance that your business's questionnaire has for helping to get accurate results. It is only by receiving input from nearly everyone in the sample that we can be sure that the results truly represent Ballarat area businesses. If someone at your business has already completed and returned the questionnaire, please accept our sincere thanks. If not, could you please find the time to fill it in for us? We would be especially grateful for your help with this important study.

For your convenience, the questionnaire is attached. It should only take 10 minutes to complete and is anonymous. The questionnaire is in a Word document. Could you please tick the appropriate boxes, save and send back by email?

If you have any questions or concerns about completing the questionnaire, you may contact me on (03) 5327 6811 or p.salimzadeh@federation.edu.au

We hope that you will be able to complete the questionnaire.

Sincerely,

Parisa Salimzadeh
PhD student in Business
The Business School
Federation University Australia
P.O. Box 663,
Ballarat, Vic. 3353

Phone: (03) 5327 6811
Email: p.salimzadeh@federation.edu.au

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Appendix 6: Second Reminder Letter by Email

Dear Owner/Manager,

About a month ago, we post mailed a hard copy questionnaire to you because your Ballarat business was selected to help in a study about the sustainable practices of small businesses in regional Australia. To the best of our knowledge, it has not yet been returned.

I am writing again because of the importance that your business's questionnaire has for helping to get accurate results. It is only by receiving input from nearly everyone in the sample that we can be sure that the results truly represent Ballarat area businesses. If someone at your business has already completed and returned the questionnaire, please accept our sincere thanks. If not, could you please find the time to fill it in for us? Please note that it's the last reminder that you receive from us. We would be especially grateful for your help with this important study.

For your convenience, the questionnaire is attached. It should only take 10 minutes to complete and is anonymous. The questionnaire is in a Word document. Could you please tick the appropriate boxes, save and send back by reply email to the email address below?

If you have any questions or concerns about completing the questionnaire, you may contact me on (03) 5327 6811 or p.salimzadeh@federation.edu.au

We hope that you will be able to complete the questionnaire.

Sincerely,

Parisa Salimzadeh
PhD student in Business
Faculty of Business
Federation University Australia
P.O. Box 663,
Ballarat, Vic. 3353

Phone: (03) 5327 6811
Email: p.salimzadeh@federation.edu.au

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Appendix 7: Descriptive Statistics to Support ANOVA

The following tables provide descriptive statistics such as number of cases, number of missing values, mean, standard deviation and standard error comparing social and environmental practices across SMEs with different demographic characteristics.

Table A7.1 Descriptive Statistics Comparing Social Practices across Business Categories

Business Category	Number of Cases	Missing	Mean	SD	SE
Manufacturing	24	1	43.96	7.838	1.6
Construction	21	2	45.05	9.431	2.058
Retail Trade	41	4	46.71	6.306	0.985
Professional, Scientific and Technical Services	26	1	50.35	7.899	1.549
Health Care and Social Assistance	22	1	46.68	9.494	2.024
Total	134	9	46.55	8.143	0.703

Source: Author

Table A7.2 Descriptive Statistics Comparing Environmental Practices across Business Categories

Business Category	Number of Cases	Missing	Mean	SD	SE
Manufacturing	25	0	21.84	4.854	0.971
Construction	23	0	20.26	4.712	0.982
Retail Trade	45	0	21.82	4.914	0.733
Professional, Scientific & Technical Services	27	0	22.67	3.637	0.7
Health Care & Social Assistance	23	0	22.35	3.892	0.812
Total	143	0	21.79	4.5	0.376

Source: Author

Table A7.3 Descriptive Statistics Comparing Social Practices across Business Ages

Business Ages	Number of Cases	Missing	Mean	SD	SE
Less than 10 years	52	3	47.02	10.515	1.458
10 years or more	167	11	47.42	9.109	0.705
Total	219	14	47.32	9.438	0.638

Source: Author

Table A7.4 Descriptive Statistics Comparing Environmental Practices across Business Ages

Business Ages	Number of Cases	Missing	Mean	SD	SE
Less than 10 years	55	0	22.11	4.860	0.655
10 years or more	178	0	21.56	4.547	0.341
Total	233	0	21.69	4.618	0.303

Source: Author

Table A7.5 Descriptive Statistics Comparing Social Practices across Business Sizes

Business Size	Number of Cases	Missing	Mean	SD	SE
Small	179	14	46.64	9.204	0.688
Medium	40	0	50.38	9.981	1.578
Total	219	14	47.32	9.438	0.638

Source: Author

Table A7.6 Descriptive Statistics Comparing Environmental Practices across Business Sizes

Business Size	Number of Cases	Missing	Mean	SD	SE
Small	193	0	21.86	4.532	0.326
Medium	40	0	20.88	4.993	0.79
Total	233	0	21.69	4.618	0.303

Source: Author

Table A7.7 Descriptive Statistics Comparing Social Practices across Educational Levels

Educational Level	Number of Cases	Missing	Mean	SD	SE
Elementary	74	5	45.04	10.106	1.175
Undergraduate	105	9	48.51	8.454	0.825
Postgraduate	40	0	48.43	10.064	1.591
Total	219	14	47.32	9.438	0.638

Source: Author

Table A7.8 Descriptive Statistics Comparing Environmental Practices across Educational Levels

Educational Level	Number of Cases	Missing	Mean	SD	SE
Elementary	79	0	20.96	5.024	0.565
Undergraduate	114	0	22.2	4.409	0.413
Postgraduate	40	0	21.68	4.269	0.675
Total	233	0	21.69	4.618	0.303

Source: Author

Table A7.9 Descriptive Statistics Comparing Social Practices across Experience Levels

Experience Level	Number of Cases	Missing	Mean	SD	SE
1-5 years	20	3	45.95	11.61	2.596
6-19 years	99	3	48.84	9.203	0.925
More than 19 years	100	8	46.1	9.07	0.907
Total	219	14	47.32	9.438	0.638

Source: Author

Table A7.10 Descriptive Statistics Comparing Environmental Practices across Experience Levels

Experience Level	Number of Cases	Missing	Mean	SD	SE
1-5 years	23	0	20.78	5.291	1.103
6-19 years	102	0	22.07	4.571	0.453
More than 19 years	108	0	21.53	4.519	0.435
Total	233	0	21.69	4.618	0.303

Source: Author

Appendix 8: Correlation of Social and Environmental Practices

The following tables provide the correlation coefficients of social and environmental practices. For better presentation of the correlation coefficients of social practices, $S_1 - S_{17}$ were used instead of the real name of each social practice. For example, instead of putting "Sponsored of clubs or community programs", S_1 was used. Same approach was applied for the correlation table of environmental practices (Table A8.2) and E_1 - E_7 were used instead of the real name of each environmental practice.

Table A8.1 Correlation of Social Practices[10]

	S_1	S_2	S_3	S_4	S_5	S_6	S_7	S_8	S_9	S_{10}	S_{11}	S_{12}	S_{13}	S_{14}	S_{15}	S_{16}	S_{17}
S_1	1	0.436**	0.412**	0.279**	0.289**	0.224**	0.552**	0.341**	0.178**	0.337**	0.332**	0.411**	0.278**	0.130	0.112	0.202**	0.244**
S_2	0.436**	1	0.367**	0.316**	0.299**	0.353**	0.345**	0.494**	0.401**	0.425**	0.225**	0.407**	0.195**	0.001	-0.007	0.128	0.147*
S_3	0.412**	0.367**	1	0.465**	0.347**	0.333**	0.318**	0.554**	0.196**	0.289**	0.259**	0.309**	0.358**	0.100	0.052	0.095	0.227**
S_4	0.279**	0.316**	0.465**	1	0.825**	0.417**	0.183**	0.566**	0.255**	0.285**	0.245**	0.253**	0.224**	0.050	0.052	0.012	0.184**
S_5	0.289**	0.299**	0.347**	0.825**	1	0.482**	0.134*	0.494**	0.301**	0.286**	0.248**	0.234**	0.234**	0.054	0.052	0.053	0.191**
S_6	0.224**	0.353**	0.333**	0.417**	0.482**	1	0.336**	0.409**	0.321**	0.289**	0.317**	0.332**	0.199**	0.195**	0.229**	0.282**	0.398**
S_7	0.552**	0.345**	0.318**	0.183**	0.134*	0.336**	1	0.287**	0.216**	0.307**	0.352**	0.341**	0.175**	0.259**	0.267**	0.292**	0.317**
S_8	0.341**	0.494**	0.554**	0.566**	0.494**	0.409**	0.287**	1	0.365**	0.442**	0.293**	0.350**	0.249**	0.024	0.044	0.086	0.220**
S_9	0.178**	0.401**	0.196**	0.255**	0.301**	0.321**	0.216**	0.365**	1	0.319**	0.207**	0.252**	0.098	0.000	0.039	0.046	0.147*
S_{10}	0.337**	0.425**	0.289**	0.285**	0.286**	0.289**	0.307**	0.442**	0.319**	1	0.370**	0.432**	0.242**	0.079	0.039	0.139*	0.113
S_{11}	0.332**	0.225**	0.259**	0.245**	0.248**	0.317**	0.352**	0.293**	0.207**	0.370**	1	0.318**	0.252**	0.239**	0.287**	0.166*	0.326**
S_{12}	0.411**	0.407**	0.309**	0.253**	0.234**	0.332**	0.341**	0.350**	0.252**	0.432**	0.318**	1	0.446**	0.173**	0.128	0.228**	0.263**
S_{13}	0.278**	0.195**	0.358**	0.224**	0.234**	0.199**	0.175**	0.249**	0.098	0.242**	0.252**	0.446**	1	0.324**	0.197**	0.181**	0.294**
S_{14}	0.130	0.001	0.100	0.050	0.054	0.195**	0.259**	0.024	0.000	0.079	0.239**	0.173**	0.324**	1	0.736**	0.585**	0.440**
S_{15}	0.112	-0.007	0.052	0.052	0.052	0.229**	0.267**	0.044	0.039	0.039	0.287**	0.128	0.197**	0.736**	1	0.616**	0.469**
S_{16}	0.202**	0.128	0.095	0.012	0.053	0.282**	0.292**	0.086	0.046	0.139*	0.166*	0.228**	0.181**	0.585**	0.616**	1	0.481**
S_{17}	0.244**	0.147*	0.227**	0.184**	0.191**	0.398**	0.317**	0.220**	0.147*	0.113	0.326**	0.263**	0.294**	0.440**	0.469**	0.481**	1

Source: Author

[10] **: Correlation is significant at the 0.01 level (2-tailed).
*: Correlation is significant at the 0.05 level (2-tailed).

Table A8.2 Correlation of Environmental Practices[11]

	E_1	E_2	E_3	E_4	E_5	E_6	E_7
E_1	1	0.607**	0.487**	0.370**	0.377**	0.324**	0.290**
E_2	0.607**	1	0.478**	0.544**	0.582**	0.510**	0.417**
E_3	0.487**	0.478**	1	0.572**	0.534**	0.423**	0.321**
E_4	0.370**	0.544**	0.572**	1	0.652**	0.535**	0.456**
E_5	0.377**	0.582**	0.534**	0.652**	1	0.668**	0.552**
E_6	0.324**	0.510**	0.423**	0.535**	0.668**	1	0.547**
E_7	0.290**	0.417**	0.321**	0.456**	0.552**	0.547**	1

Source: Author

[11] **: Correlation is significant at the 0.01 level (2-tailed).