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Pietermaritzburg consumers' awareness, attitudes and purchase decisions with regard to green products

By
Njabulo Happy-Boy Mkhize
207514872

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Supervisor: Professor Debbie Vigar-Ellis

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Declaration

I, Njabulo Happy-Boy Mkhize declare that:

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Signature: 28 November 2014

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Jesus is King of ALL. Let Heaven Come. Thank You Lord!

Executive Summary

The depletion of the environment is a serious phenomenon which has been a highly debated issue in the past few decades (Sanders, 2007:1; Straughan & Roberts, 1999:558). However, there is general consensus about the presence of this phenomenon (McClure, 2007:1). It is also widely believed that the catalyst for the depletion of the environment is human beings. Human consumption patterns are seen as major drivers in the depletion of the environment (De Sherbinin, Carr, Cassels, & Jiang, 2007:345). Research further shows an increase in consumption patterns in the last decade (Chen & Chai, 2010:28; Juwaheer, 2005:57). Therefore, there is a need for consumers to monitor and change their consumption patterns to more eco-friendly ways.

The study deliberates the issues of green consumer behaviour, environmental concerns, the awareness of environmental issues and the reasons for the lack of Ecologically Conscious Consumer Behaviour (ECCB) amongst the population under study. It further studies the green gap which is the difference between ECCB and Environmental concerns.

A descriptive research design with a survey of 330 respondents as a sample of the Pietermaritzburg population was used. Descriptive and inferential analyses were conducted. The study intended to describe the environmental attitudes, behaviour and awareness of consumers in Pietermaritzburg.

Results depict relatively high levels of awareness of environmental issues. There were high awareness levels for issues such as climate change, save the rhino awareness and overpopulation. However, in terms of concern for the environment, results indicate only an average level of environmental concern. This means that although consumers are aware of environmental issues, many are not concerned about the environment.

Furthermore, results indicated that respondents exhibit varying levels of green consumer behaviour which also differs by type of behaviour. However, the respondents demonstrate only moderate levels of green behaviour in relation to the overall construct. Respondents participated in activities of reducing, recycling and reusing, and agreed to boycott products that are detrimental to the environment. Yet consumers also displayed that that they still purchase products with aerosol containers and have not participated in signing the 49M pledge for reducing electricity. There were several reasons which respondents indicated were part of their not adopting green consumer behaviour. The lack of promotion of green products and of mechanisms to adopt a green lifestyle, such as different coloured rubbish bins which assist in separating the products for recycling/disposing, were some of the main reasons for their lack of green consumer behaviour. Various constructs had an impact on the

demographics of this study. Income and race had a significant relationship with environmental concern: where respondents resided had a significant impact on green consumer behaviour. Lastly, the 'green gap' was seen to have a significant relationship with resident and race. A key conclusion is thus that Pietermaritzburg consumers show reasonable levels of environmental awareness and concern but are still finding it challenging to change their awareness and concern into meaningful green consumer behaviour. Thus a green gap exists amongst these Pietermaritzburg respondents.

Recommendations are made in relation to improving the purchasing of green products and increasing consumers' environmental concern. Implications for management are discussed and a green marketing strategy is recommended.

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Chapter 1: Introduction

1.1. Background and Motivation for the study

The environment is said to be being depleted and has become of great importance and concern in the industrialized world (Tantawi, O'Shaughnessy, Gad, & Ragheb, 2009:29). With the depletion of the environment occurring, a decision should be taken by all stakeholders involved to assist in neutralising or decreasing the depletion.

Scientists state that the crisis of environmental change has become worse than imagined in their earlier predictions (Sanders, 2007:1). A 90% consensus exists amongst researchers that climate change is an anthropogenic phenomenon (McClure, 2007:1). It is, therefore, imperative that human beings take responsibility for what is apparently caused by them.

Sanders (2007:1) states that in order to decrease or neutralise the climate change crisis, governments, business and the public need to invest in new products and services which will reduce the future impact of global warming. There are great advances and major breakthroughs in the development of new products and services across the globe, which are tools that assist in reducing carbon emissions (Sanders, 2007:1). An opportunity exists for businesses to play a role in the development of products and services that are environmentally friendly.

The South African business sector's operations will be affected as nation-wide discussions on going 'green' proceed (City Press, 2011:1). Many businesses, if desiring to go 'green', will need to change their operations in order for them to produce green products. Forward thinking businesses have identified that the green market is increasing and has the potential to earn businesses large sums of revenue (TGI, 2009:1). As the green market expands, the development of products which target this segment needs to be increased. A business decision to produce green products is influenced by regulations and consumer preferences (Wang, Chen, Hu, & Bidanda, 2008:3). It is clear that businesses face challenges not only when changing their operations, but also when attempting to shift consumer preferences towards green products. Encouraging consumers to choose green products is being practised by many different stakeholders in society, from activists and government officials to business people (Wang *et al*., 2008:2).

There has been a significant increase in terms of environmental concern and awareness in the past decades, consequently consumers' values and attitudes towards the environment have also changed (Joshi, 2011:93). Consumer awareness of green products has increased (Wang *et al.*, 2008:2), making consumers more conscious of the change in the environment as a persistent issue, rather than as a fading agenda (McDaniel & Rylander, 1993:4). Ecologically conscious consumer behaviour (ECCB) is an important component of this research. The difference between ECCB and environmental concern (EC) is called the 'green gap'(Nielsen, 2011:1).

Most studies of growing pro-environmental behaviour have been conducted in developing countries. Pro-environmental behaviour in developing countries such as South Africa is relatively under-researched. Yet the significance of preserving the environment is an issue which every state, both developed and developing, needs to participate in.

There has been a great need to address the environmental challenges that the globe faces, which include tackling climate change and improving environmental performance (OECD, 2009: 5). Governments around the world are making an effort to develop and implement regulations to decrease carbon emissions, while organisations and activists continue to lobby for the regulations to be approved urgently. Research indicates that people across the globe have a great concern for the environment's depletion and are aware of the negative effects their behaviours are having on the environment, but they still have not translated their strong beliefs into actions which are positive for the environment (Flynn, Bellaby, & Ricci, 2009:159). The difference between values, concerns or awareness and actions or behaviour is what some researchers call the 'green gap' or the 'value-action gap' (Kennedy, Beckley, McFarlane, & Nadeau, 2009:151). The 'green gap' involves the difference between customers who illustrate or express a willingness to purchase green products and their actual green behaviours (Bennet & Williams, 2011:7).

The purpose of this study is not only to determine the extent of environmental awareness, attitude and behaviour about purchasing green products, but also to determine the existence of the green gap in a developing nation such as South Africa. Insight gained from this study could assist marketers and policy makers to make sound decisions concerning increasing environmentally friendly behaviour amongst consumers in Pietermaritzburg, South Africa, and in other developing countries. Sustainability of the environment is a priority issue both on the national and global agendas.

1.2. Research objectives

To achieve the research purpose seven research objectives were set. The objectives are as follows:

1. To identify the awareness of green issues amongst Pietermaritzburg residents;
2. To identify the extent of environmental concern that Pietermaritzburg residents have;
3. To assess the level of action that Pietermaritzburg residents have made with regards to green products;
4. To establish the reasons for the lack of ecological conscious consumer behaviour (ECCB);
5. To determine the relationship between ECCB and other green consumer behaviour constructs (Knowledge, EC and PCE);
6. To establish the extent of the gap between concern and action;
7. To determine whether demographic factors such as gender, education, age and income influence constructs of green consumer behaviour.

1.3. Methodology

A descriptive research design was used. The primary research was conducted in Pietermaritzburg with the Mkondeni Test Driving Centre (MTDC) as the data collection point. There are normally fairly long queues at the testing site with people waiting at various points in the process of applying for or renewing drivers' licenses thus providing prospective respondents who would be more inclined to answer the questionnaire, thereby improving the response rate. The MTDC was ideal for data collection as it is also the only testing centre in Pietermaritzburg providing access to a large proportion of the Pietermaritzburg population. Most people who go there are over the age of 18 years, due to legal age restrictions for driving.

The study draws from various sources of literature to form its theoretical framework and to design the questionnaire. Particular focus in the literature is on key constructs of this research: environmental concern and awareness, green consumer behaviour, the 'green gap' and reasons for the lack of ECCB.

The sampling method used was a non-probability sampling, with a sample which is reasonably large as there were 330 respondents. Convenience sampling was used. Analysis of the data collected involved using SPSS 21; descriptive statistics were found and displayed.

1.4. Contribution of the study

This research will add to the body of knowledge on the extent of the green gap by paying particular attention to adult consumers of Pietermaritzburg, South Africa. The research provides knowledge on the levels of these consumers' awareness of green issues and products in Pietermaritzburg, as well as their green purchasing behaviour. Finally, the research elucidates what residents of Pietermaritzburg discern as the cause of their green purchasing behaviour or lack thereof.

It is hoped that this research will ultimately assist both green marketers and other stakeholders in gaining information on the possibility of selling green products to this population, and changing behaviour to be more environmentally friendly.

It will further assist in making recommendations on the possible ways to bridge the gap between concern and action and, as such, may assist in sustaining our environment.

1.5. Possible limitations of Study

The data collection site could be a limitation in this study. As the study investigates Pietermaritzburg adult consumers' awareness, concern and behaviour with regards to the environment, it is possible that some adults in Pietermaritzburg would have no reason to go to the Mkondeni Test Driving Centre. For example, they may not own a car or feel the need to get a driving licence, e.g., for work purposes. These people would thus be excluded from the study due to the choice of this data collection site. While other sites like shopping malls might provide access to these people, it is likely that all sites have limited exposure for some Pietermaritzburg consumers and thus the decision to use the Mkondeni Test Driving Centre was based more on the fact that people would spend a fair amount of time waiting in queues and could, thus, complete the relatively long questionnaire.

1.6. Chapter Outline

This study covers five main chapters, which are outlined as follows:

Chapter 2 discusses the theoretical framework, which is the foundation of the study. It reviews both current and past literature on the need for environmental concern, briefly covering the responses from government, business and consumers. Green consumer behaviour and the various key constructs related to this phenomenon are discussed in detail. Literature related to the green gap is also investigated, and evidence of the gap and reasons for the lack of ECCB are included.

Chapter 3 details the methodology undertaken to fulfil this study. It discusses the objectives to be met and their pertinence to the study. The research instrument is discussed and justified. The descriptive and inferential analyses used in the study are described. Quality control issues ensuring the research is valid and reliable are discussed.

Chapter 4 outlines the findings of the study drawn from the data collected. It continues to analyse the results and relates them to past literature through comparing and contrasting.

Chapter 5 deliberates on the findings and provides conclusions as per the objectives.

In Chapter 6 recommendations are given on how to increase awareness of environmental issues, environmental concern and the green consumer behaviour of respondents. It further outlines the limitations that were faced in the current study and makes recommendations for future research. It concludes the report by drawing final conclusions.

1.7. Conclusion

This chapter served as an introduction to the study by outlining sections which are going to be covered in this chapter.

A theoretical foundation needs to be laid; therefore, the next chapter deals with the literature which is the basis for the theoretical framework of this study.

Chapter 2: Environmental Concern, Responses and the Green Gap

2.1. Introduction

The depletion of the environment has been a major point of concern in the last 60 years. Since the early 60s there have been discussions on the impact of human activities on the environment (Straughan & Roberts, 1999:558).

This chapter assesses the material or work from previous researchers and gives an analytical opinion on the differences and concurrences of previous studies with specific reference to the objectives of the study and the need for more research to be done.

This chapter covers the following subjects: the need for environmental concern and reactions to environmental concern by major stakeholders, such as government, business and green consumers.

The first section discusses the different environmental challenges facing the planet. This section is critical to bringing awareness of what is meant by environmental issues and the diminishing of the environment phenomenon. This section assists in highlighting the extent of the predicament and the need to reverse this phenomenon.

Responses to environmental challenges require the combined efforts of governments, businesses and individuals. Acknowledgement of the efforts made by governments and businesses are also briefly discussed. Green marketing is a major response by businesses. The role of government in leading both the business consumer and final consumer to more sustainable lifestyles is an inevitable imperative. However, the success of green marketing efforts depends largely on consumers' green knowledge, concern and behaviour (Prakash, 2002:285). The response by consumers in the market is discussed in much more depth, as the focus of this study is Pietermaritzburg residents and their green behaviour. This section discusses the size of the green market. Furthermore, it identifies the different types and characteristics of green consumers. Lastly, this chapter encapsulates green consumer behavior where knowledge/awareness, concern/ attitude and behaviour are discussed as sub-sections of the phenomenon of green consumer behaviour. The chapter ends by discussing the 'green gap' and its causes according to the literature. While a fair amount is known about green consumer behavior, most of the studies have been conducted in developed countries. This study investigates the extent of and possible

reasons for the green gap in South Africa, a market that, to date, has not been extensively investigated.

2.2. The Need for Environmental Concern

There are two drivers of the human impact on the environment, namely population and consumption (De Sherbinin *et al*., 2007:3). The last century has seen an increase in the global population, which has resulted in an increase in food consumption and, thus, a deterioration of the environment caused by over consumption and an increase in the use of natural resources (Chen & Chai, 2010:28; Juwaheer, 2005:60). Research shows that 30-40% of environmental issues are caused by the consumption patterns of human beings (Chan, 2001:391). The decisions and behaviours of consumers thus have a significant impact on the environment (Tobler, Visschers, & Siegrist, 2012:3). Population increases result in greater exploitation of resources as more people require more resources to survive. The population increases have more than tripled in the last century, from an estimated 1.5 billion people to 6.3 billion people living on earth in 2003 and there is a prediction that the population of the earth will be 9, 2 billion people by 2050 (De Sherbinin *et al.*, 2007:3; Lehman & Geller, 2005:14; Nations, 2009:1). Climate change, global warming, deforestation, pollution and depletion of the ozone layer are just some of the global environmental crises facing the world (Juwaheer, 2005:60).

2.2.1. Climate Change

Climate change is caused mostly by greenhouse gas emissions and is a serious environmental issue (Ngo, West, & Calkins, 2009:151) In Canada, for example, transportation, mainly from vehicles, and private household consumption contribute 30-40% of the greenhouse gas emissions which contribute to climate change (Ngo *et al.*, 2009:152).

2.2.2. Global warming

The Earth's surface is said to be experiencing changes in temperature making the earth warmer; this is caused by greenhouse gases which are being released into the atmosphere (Riebeek, 2010: 3). Global warming is causing other environmental issues such as increases in sea levels, increases in pests and diseases and extreme weather patterns (Shah, 2013:1). The implications of these changes are devastating not only to other species but also to the people of the earth.

2.2.3. Deforestation

The cutting down of trees has serious results on the availability of oxygen in the atmosphere, as trees take in carbon dioxide and release oxygen which is what many species, including human beings, are reliant on for survival (WWF.Panda, 2014a:1). There are many implications that come with deforestation and which are of concern to the well-being of the earth and the ecosystems that inhabit it.

2.2.4. Water pollution and depletion

Fresh water in the world is being contaminated by pesticides, fuel, industrial chemicals and wastes (De Sherbinin *et al.*, 2007:11). This affects the species which use fresh clean water as a habitat (De Sherbinin *et al*., 2007:11) thus threatening the existence of these species and the human race who need to drink clean water. The seriousness of the depletion and pollution of water in the environment is predicted as a possible cause for a future world war (Judge, 2012:1). This further emphasizes the need for environmental concern and action which will change the course of this phenomenon which is going to affect future generations.

Natural resources, such as fertile land and water resources, are also being misused and therefore require proper or better management (Summit, 2008: 2).

Some impacts of the environmental crisis on human beings and other inhabitants in the ecosystem are direct and immediate such as polluted water that can cause diseases such as cholera or the dying of fish in polluted water (Hallstrom, 2005: 27). This sometimes creates an immediate response due to the need to save lives and the environment. Hallstrom (2005: 27) states that there is also an indirect impact which has a similar effect of being hazardous to human health and the environment. The indirect effects result in little or no action from most consumers in the market, although there is a need for concern (Hallstrom, 2005: 27).

The crisis of environmental change has become worse than earlier predictions (Sanders, 2007:1). These environmental challenges create a great need for environmental concern. A response to them is essential from government, consumers and business alike in order to create a sustainable environment for future generations. Without meaningful interventions by all stakeholders involved in sustaining the environment, it will be challenging for future generations to conduct business as is the norm today (Lehman & Geller, 2005: 14).

2.3. Responses to Environmental concerns

Environmental issues have been discussed and implications have also been highlighted above. There is a dire need for an appropriate response that seeks to address the environmental issues. While the focus of this research is on consumer responses to these environmental challenges, this section discusses responses from government and business that play a crucial role in the shaping of consumer behaviour.

2.3.1. Government response

All governments need to prioritise environmental sustainability and move it to the forefront of decision and policy frameworks (Jabbra & Joseph, 1998:2). Governments and activists around the globe have a huge role in growing environmental concern and in influencing their constituencies to have green lifestyles. Some governments have seen the worsening of the environment as a serious issue (Chan, 2001:391).

There are several government responses discussed below which are the attempts of governments to fast track eco-friendly behaviour and make a meaningful impact against environmental depletion. Agreements, developmental policies and environmental legislations are discussed briefly in relation to the government's response to environmental issues.

2.3.1.1. Agreements

The governments of the world showed their commitment to environmental sustainability by signing the Kyoto Protocol, which is a pact signed by 141 countries to reduce global warming gases (Ottman, Stafford, & Hartman, 2006:25). Agreements have been signed by most governments which support pro-environmentally friendly behaviours in their countries and globally.

2.3.1.2. Policy development

Policies on population control are being developed in many countries due to the association of environment depletion and population growth. South Africa has a White Paper on Population Policy (SANBI, 2013 :3) which states that population growth is recognized as a primary cause of environmental issues that are affecting the earth.

2.3.1.3. Environmental legislation

Effective laws need to be passed and enforced with great vigour by governments (Jabbra & Joseph, 1998: 3). Without the enforcement of legislation governments will lose their fight against

environmental change and will not be able to protect the environment and its scarce resources. Many developing countries around the world have put in place environmental legislation to control and improve the environment (Jabbra & Joseph, 1998:3).

South Africa, as a developing country, is also playing its role in decreasing the environmental degradation through environmental legislation and other agreements. The President of South Africa is quoted in a newspaper stating that, "South Africa is responding to environmental change by signing international agreements, passing national laws and developing national policies, implementing management strategies, monitoring and research, raising awareness, and education" (Manguag, 2012: 28).

It is critical for government to support the environmental war against unsustainable behaviours towards the environment. It is an important stakeholder because of its power to put in place legislation which is pro-environmental. These laws aid in instilling positive behaviour towards a more sustainable environment in both the final consumer and the business consumer.

2.3.2. Business Response and Green Marketing

Green marketing is essentially the business response to environmental concerns. There are many names which have been used by researchers for green marketing. Some of the names include 'sustainable marketing', 'environmental marketing', 'eco-marketing' and 'organic marketing' (Prakash, 2002:285; Priebe, 2010:1). Green marketing will be the term used in this research.

Social and political pressure has caused companies to change from only addressing pollution and waste disposal to adding different package composition and design, other product processes and also their promotional strategy to keep up with the green evolution (Straughan & Roberts, 1999: 558). Green marketing includes selling products and services using their environmental benefits (Ward, 2012: 1) and incorporates both producing environmentally sustainable products and 'greening' the company's processes or activities (Prakash, 2002: 285). People tend to think green marketing is about the advertising and promotion of green products as Phosphate Free, Recyclable, Refillable, Ozone Friendly, and Environmentally Friendly (Polonsky & Rosenberger III, 2001: 21). While green marketing is about environmental concern and usually uses advertising and promotions to create awareness, it is not entirely about that but has a larger scope which includes greening products, processes and firms (Polonsky & Rosenberger III, 2001: 21).

Prakash (2002: 285) thus defines green marketing as "strategies used to promote products by employing environmental claims either about their attributes or about the systems, policies and processes of the firms that manufacture or sell them" (Prakash, 2002: 285).

Green marketing strategy is a term used to describe marketers' attempts to target and develop strategies which are geared towards 'green' consumers. It further manipulates the traditional marketing mix and forms a green marketing strategy (Prakash, 2002: 285).

2.3.2.1. Green marketing strategy

Positioning a brand or product as a 'green brand' requires a differentiation strategy which will give the brand or product a unique position in a competitive market, using environmentally sound attributes (Hartmann, Ibanez, & Sainz, 2005: 10). Every marketer needs to construct a suitable marketing mix for his/her products but more effort needs to be put in by green marketers than conventional marketers (DERM, 2012: 1). Green brands or products need to be positioned better than conventional brands or products since conventional products have been established over a longer time, with a correspondingly stronger position in the minds of consumers (Hartmann *et al*., 2005:10). Hartmann *et al.* (2005:11) state that the positioning strategy of green products should be based on the significant environmental benefits that these products have over traditional products.

'Green' has been used to describe anything that is sustainable and environmentally friendly (Aerias, 2010: 4). In recent years, there has been an increase of products which claim they are not harmful or are less harmful to the environment (Mahenc, 2008: 59). A green product will therefore be anything that is manufactured, which is sustainable and environmentally friendly. 'Environmentally friendly' defines products or services that are not destructive to the environment or its ecosystem (Aerias, 2010: 5).

There are some attributes which need to be evident in order for a product to be a green, environmentally friendly or sustainable product: e.g., recyclability, less to no toxic materials, and reduced packaging (Chen & Chai, 2010: 29). Other attributes, which could be added are the processes to make the product, the amount of energy used, labels (eco-labels) and the supply chain (suppliers) of these green products (D'Souza, Taghian, & Lamb, 2006:163; Rex & Baumann, 2007:568).

From a pricing perspective, green products are perceived to be expensive by many consumers in the market (Bennet & Williams, 2011: 44), yet they are less expensive when their product life cycle is considered, e.g., fuel efficient cars (DERM, 2012: 3). However, many 'green' consumers are willing to pay the premium for green products (TGI, 2009: 1).

Consumers who are interested in 'going green' need to be assisted by making the products easily available, since few consumers will be willing to go out of their way to purchase green products (DERM, 2012: 3). Green marketers, therefore, need to distribute their products not just for micro markets, but must make their products widely available.

Consumers tend to make purchasing decisions because of the information at hand, thus providing that information will assist consumers with making informed decisions (Prakash, 2002: 292). Marketers face the challenge of providing comprehensive information and also needing to be deemed credible by potential consumers (Prakash, 2002: 292). Green products will not be successful in the marketplace unless they are communicated effectively (Hartmann *et al.*, 2005: 10). Understanding how consumers respond to this communication is also important. A study conducted shows that consumers respond more positively to green product-related rather than cause-related advertisements (Ahmad, Shah, & Ahmad, 2010: 218), possibly indicating that consumers perceive that green products are more valuable than the green issues (cause-related problems) they seek to address.

Having a comprehensive green marketing strategy will ensure that the business response to environmental concerns will be effective and ultimately make an impact in the way consumers respond to purchasing green products. Thus, the response by the business sector is crucial in addressing environmental concerns. However, without concerned consumers, who will purchase environmentally friendly goods and services and to change to an environmentally friendly lifestyle, the depletion of the environment is likely to continue.

2.3.3. Consumer responses: Green Consumers

The discussion of the business and government response to the depletion of the environment leads to the investigation of the response by the consumers in the marketplace. Green consumers have been central to the growth of green marketing and their role is essential to the green revolution (Peattie, 2001:187; Chan, 2001:388). Comprehending green consumers is important to

business and the protection of the environment. This section discusses the green consumer, the size of this market, and the attitudes, characteristics and profile of these green consumers.

Knowing your target audience is very important and is necessary for green marketers to produce effective marketing campaigns and sell green products (Priebe, 2010:1). The target audience of consumers around the globe, who are willing to purchase green products and services, is growing (DERM, 2012: 1).

Green consumers are understood to be people who have a particular interest in and awareness of 'green' issues (Chen & Chai, 2010: 29). Green consumers are not only particularly interested in the environment but make an ongoing attempt to change their behaviours to protect it (Chen & Chai, 2010: 30). One of the ways to reduce the negative impact that human beings are having on the environment is purchasing green products and adopting ways to lessen green issues. Green or Eco-friendly behaviour also "involves an individual's efforts to limit negative actions which may be harmful to the natural and physical environment"(Albayrak, Caber, Moutinho, & Herstein, 2011:189).

In previous decades, 'going green' was only practised by the educated and by citizens of first world countries, however third world countries are now participating in this revolution (All Africa, 2010:1). Marketers, who are attempting to achieve a competitive edge in the lucrative green consumer market, need to know that it is still growing (TGI, 2009:1).

2.3.3.1 Size of the green market

The worth of the green market is estimated in hundreds of billions of dollars (Harter & Sova, 2008: 2). In 2006 it was worth about $200 billion globally (Gupta & Ogden, 2009:376). Research conducted in South Africa in 2009, showed that there were about 2 million green consumers who lived in urban areas, mostly in the Western Cape and Gauteng (TGI, 2009:1).

Marketing green products can be challenging because consumers' beliefs are still changing and are unstable (Gupta & Ogden, 2009:376). The existing demand patterns are inconsistent: this is evident in fickle purchasing behaviour (WordPress, 2008:1). Addressing these inconsistencies will likely provide more ease in marketing green products and could possibly alter the behaviour of consumers to more eco-friendly behaviour.

Purchasing green products does not appeal to everyone but there is a significant number of consumers who are changing or are attracted to changing their lifestyle because of the green appeal (Ginsberg & Bloom, 2004:80). In most opinion polls, the concern for the environment is increasing as people become more aware of the changing climate (Bonini & Oppenheim, 2008: 56; Chang, 2011:19).

Some studies agree with the high results in the public polls on environmental concern but cite some important observations:

- that this should not be considered overwhelming since they can still rise effortlessly;
- a survey conducted in the U.S. showed a great variation in the intensity of environmental concern per person; and
- environmental concern has become a norm in society making it absurd for anyone to deny that fact, but polls could be just showing social expectancy rather than a genuine concern(Castro & Lima, 2001: 401; Takács-Sánta, 2007:26)

Environmental concerns are often not prioritised because they are outweighed by conflicting attitudes (Blake, 1999: 26). Some of the attitudes given by respondents in the research conducted by Blake (1999:26) include individuality, practicality and responsibility attitudes. Depending on the consumer, the above attitudes maybe expressed beyond the need for environmental concern, thus making environmental concern a weaker choice criterion than these other attitudes.

The size of the green market is growing in the global market both financially and statistically. However, the market is not uniform and different types or segments of green consumers exist.

2.3.3.2. Types of green consumers

A great amount of research has been conducted to determine the identity of green consumers and the different segments involved in the green market (Peattie, 2001: 188). These different types of green consumers are essential for marketers to understand in order to develop targeting strategies.

Researchers have developed various classifications of the different types of green consumers (Juwaheer, 2005:67; Rex & Baumann, 2007). Juwaheer (2005:67), for example, talks about *Pure Greens, Moderate Greens, Light Greens, Poor Greens and Indifferent Greens* while Rex and Baumann (2007:569) classify consumers into *True-blue Greens, Greenback greens, Sprouts,*

Grousers and Basic Browns. The table below indicates a classification of US green consumers into these categories.

Table 2.1: Consumer typology US Roper Starch Worldwide

Consumer typology US Roper Starch Worldwide		
11%	True Blue Greens	Major green purchasers and recyclers
5%	Greenback Greens	Will buy green but won't make lifestyle changes
33%	Sprouts	Care but would only spend a little more to buy green
18%	Grousers	Environment is somebody else's problem
31%	Basic Browns	Essentially don't/won't care

(Rex & Baumann, 2007:569)

In order to give a better understanding of the different segments of green consumers, the segments identified by Rex and Baumann (2007:569) are used to provide further discussion.

True-blue Greens or pure greens ((Juwaheer, 2005:67) are the most active of the green consumers and most research finds the existence of this segment (Ginsberg & Bloom, 2004:80; Juwaheer, 2005:67; Rex & Baumann, 2007:569). They are also characterised by very strong concerns about the environment and thus are more likely to persuade others to live lives which are environmentally friendly. Green activists are amongst those who fall into this segment (Ginsberg & Bloom, 2004:80; Rex & Baumann, 2007:67).

This group has been found to represent approximately 10% of consumers (Ginsberg & Bloom, 2004:80; Juwaheer, 2005:67; Rex & Baumann, 2007:570). Ideally marketers need to grow this segment of green consumers. The percentage it represents is too low for it to have a significant impact on the sustainability of the environment.

Greenback Greens are usually those consumers who are interested in protecting the environment by purchasing green products but will not be willing to adopt the rest of the other lifestyles associated with acting in an environmentally friendly way (Rex & Baumann, 2007:569). The equivalent in other studies for *Greenback Greens* is *Moderate Greens* (Juwaheer, 2005:67). Juwaheer (2005:70) conducted a study in Mauritius and found that 22% of consumers fall into this category. However Rex and Baumann (2007:569) and Ginsberg and Bloom (2004:80) found

only 5% and 6% respectively. Their studies included US and global samples. Changing this segment to become True-blue Greens is fundamental to increase the number of green consumers who are strongly concerned about the environment.

Sprouts or *Light Greens* (Juwaheer, 2005:67) are consumers who demonstrate a mediocre concern and behaviour (Rex & Baumann, 2007:569). This segment has the largest percentage of green consumers with 33% (Rex & Baumann, 2007:569). Ginsberg and Bloom (2004:80) state that *Sprouts* are more fictional about environmental concern than practical, and in their study of US green consumers, represented 31% of green consumers. This segment is very price sensitive and will sacrifice the environment for reasons of price (Juwaheer, 2005:69; Rex & Baumann, 2007:569).

Either decreasing the price of green products will encourage purchasing by this segment or green marketing strategies need to address this concern by showing that environmental concern, rather than current satisfaction, carries a premium price: in other words, consumers need to be educated to be prepared to pay the additional costs.

Grousers are characterised by their rationalisation of their lack of green consumer behaviour by mostly giving excuses for their behaviour. It could be said that they have a low Perceived Consumer Effectiveness (Rex & Baumann, 2007:569). Ginsberg and Bloom (2004:80) state that this group is also characterised by their lack of knowledge of environmental issues which are affecting the sustainability of the earth and are cynical about their ability to cause/or be part of the change forces. This green consumer segment believe that green products are inferior to the non-environmental counterparts and cost too much (Ginsberg & Bloom, 2004:80). In contrast, Juwaheer (2005:69) found that *Poor Greens* in the Mauritian study were willing to purchase green products at a higher premium price.

Basic Browns are consumers who do not see their behaviour changing the environment in a positive way and are not likely to purchase green products or alter their lifestyles to the benefit of the environment (Ginsberg & Bloom, 2004:81; Rex & Baumann, 2007:570). In essence it could be said that this segment does not care about the environment.

Understanding the different segments of green consumers is important for policy development but also for marketers of green products. There is a need to grow the true-blue green consumers

as they are most active in purchasing green products and advocating for the sustainability of the environment. For the other types of green consumers, marketing strategies need to move them to be more eco-friendly consumers. A further analysis of the profile of green consumers is discussed in the following section, looking into the demographical variables and other characteristics of the green consumer market.

Stern (2000:409) classifies pro-environmental behaviours into four groups: 1) Environmental Activism, 2) Non-activist behaviours in the public sphere, 3) Private Sphere Environmentalism and 4) Other environmentally significant behaviours.

2.3.3.3. Environmental Activism

This type of behaviour includes consumers actively involved with environmental organisations and demonstrating in order to champion their belief (Stern, 2000:409). These behaviours are performed by environmental activists and true greens. Environmental activism involves consumers exhibiting a totally green lifestyle (Stern, 2000:409).

a) Non-activist behaviours in the public sphere

This class of people supports policies which are pro-environmental behaviours and includes people such as political scientists and academic researchers (Park & Ha, 2012:389). Public policies, such as a higher tax fine for not complying with written policies, are very important as they can change the habits of many individuals (Churchill, 2010:343).

b) Private Sphere Environmentalism

Most research has been conducted on this category of behaviour, which is the private application of environment knowledge in such a way that the consumer adopts an eco-friendly lifestyle (Stern, 2000:410). Stern (2000:410) states that this category focuses on the purchase, use and disposal of products that households are using that have an impact on the environment. Private sphere environmentalism has a direct impact on the environment, especially when aggregated.

Some of the private sphere environmentalism that has been adopted, according to a survey conducted in the USA, includes 58% of U.S. consumers trying to save electricity at home, 46% recycling newspapers, 45% returning bottles or cans and 23% buying products made from, or packaged in, recycled materials (Ginsberg & Bloom, 2004: 80).

2.3.3.4. Characteristics of green market

Past research on green consumers shows that green consumers differ from their counterparts in two main areas: demographics and social/psychological variables (Chan, 2000: 9).

a) Demographics of green consumers

Much research has been done in understanding the demographical profile of green consumers (Bui, 2005: 22) and matching these with the green markets' attitudes and/or consumption patterns (Straughan & Roberts, 1999: 559). Typically green consumers have been found to be young, middle-high income, educated females (Bui, 2005:23; Rex & Baumann, 2007:569; Ryan, 2006:1; Straughan & Roberts, 1999:569). However, although much research has been done in this regard, researchers are yet to come up with a conclusive demographic profile of green consumers (Dang & Kausal, 2013:82) . Some of the common demographic variables investigated include income, education, age and gender.

- *Income and education*

Uyeki and Holland (2000:657) state that there is a significant relationship where income and education are concerned in relation to green consumer behaviour (Dang & Kausal, 2013:82). However, their study shows a contrasting result compared to most studies as it found that lower income and less educated people were more likely to adopt pro-environmental behaviours (Uyeki & Holland, 2000:657). In contrast, other studies have found that green consumers have higher household incomes (Harter & Sova, 2008: 2), are educated individuals and have status positions at work (Chan, 2000: 9). Changing from purchasing products which are not eco-friendly to green products is expensive, which justifies the reason why most green consumers have higher household income (Gan, Wee, Ozanne, & Kao, 2008: 95).

- *Age and Gender*

Results relating age and gender to green consumer behaviour are mixed, with some studies indicating significant differences (Arminda do Pac¸o & Raposo, 2009:365; Gan *et al*., 2008:95; Straughan & Roberts, 1999:565) while others report no significant impact of these variables on green behaviour (Arminda do Pac¸o & Raposo, 2009:365; Gilg, Barr, & Ford, 2005:501).

Age, as a variable to distinguish segments, has been researched by many researchers and there is a consistent belief that young people are more concerned about the environment than the older generation (Gilg *et al.*, 2005:502; Straughan & Roberts, 1999: 560). Gan *et al.* (2008:99) state

that the younger age group had a more significant and positive relationship towards adopting an eco-friendly lifestyle. This notion that the age group who purchase green products are young people is supported by several others studies (Dang & Kausal, 2013:82; Ryan, 2006:1; Straughan & Roberts, 1999:568). Most studies that investigated gender as a demographic factor show that females are more likely to adopt green lifestyles (Gilg *et al*., 2005:502). Males were seen to be less pro-environmentally active (Barr, Gilg, & Ford, 2001:2025).

As much as demographic variables segment green consumers there are also other characteristics which have been used to segment green consumers in the marketplace.

b) Other characteristics of green consumers

Some of the common characteristics for green consumers consist of the following:

- *They undertake green lifestyles.*

This means that green consumers make a great effort to purchase green products and champion green issues, which are an integral part of their everyday life (Gilg *et al.*, 2005:504; Ryan, 2006:1).

- *They are sensitive to the environment, judging their environmental behaviour and the impact it has on the environment.*

Green consumers have strong beliefs and usually convert their behaviour to affect the environment positively (Choi & Kim, 2005: 593).

- *They also favour companies which prioritize green practices.*

Green consumers trust companies that make an effort to use sustainable business practices and distrust companies which make environmental claims through their advertisements (Ryan, 2006:2). Furthermore, despite green consumers having insufficient knowledge about environmental issues, they have an interest in learning more about the crisis (Ryan, 2006: 1).

While green consumers vary in their demographic and behavioural characteristics, green behaviour also varies by type of behaviour.

2.4. Green Consumer Behaviour

This is a critical section in understanding the actions of green consumers. There are a few names which have been used in past studies to describe green consumer behavior, such as 'ecologically conscious consumer behaviour (ECCB)' (Straughan & Roberts, 1999:558), 'pro-environmental

consumer behaviour'(Kaufmann, Panni, & Orphanidou, 2012:51), 'environmentally conscious consumers'(Gan *et al*., 2008:93), 'environmentally friendly consumer behaviour' (Thøgersen & Ölander, 2003:225) and 'green consumer behaviour' (Jansson, Marell, & Nordlund, 2010:358). This section uses these names interchangeably.

There is a clear distinction between environmentally friendly behaviour and traditional purchasing consumer behaviour (Kaufmann *et al*., 2012:51). Traditional purchasing consumers are driven by an assessment of costs and benefits to the individual consumer while eco-friendly consumers have a more futuristic approach to their assessment of costs and benefits to the entire society (Choi & Kim, 2005:592; Kaufmann *et al*., 2012:51). Green consumers are defined "as people whose behaviour exhibits and reflects a relatively consistent and conscious concern for the environmental consequences related to the purchase, ownership, use or disposal of particular products or services" (Moisander, 2007:405). From the definition of eco-friendly consumers it can be deduced that the main distinction is a consciousness of the environment, as compared to traditional consumers. Moisander (2007:405) further states that green consumers are characterised by their willingness to use their purchasing power to cause social change. Eco-friendly consumers are willing to sustain the environment in diverse ways such as participating in activities of recycling materials, buying eco-friendly products, being aware of companies which are eco-friendly and checking labels and packaging to see if they are environmentally friendly (Laroche, Bergeron, & Barbaro-Forleo, 2001:507).

2.4.1. Types of Environmental Behaviours

Studies have classified the different eco-friendly behaviours in different ways (Chua, 2012b:1). Chua (2012b:1) classifies pro-environmental behaviours as Curtailment and Technology Choice.

2.4.1.1. Curtailment behaviours

Curtailment behaviours are based on the notion of consuming less and reducing the usage of materials and energy to assist in the struggle for environmental sustainability (Chua, 2012b:1). Curtailment behaviours are behaviours that occur on a daily bases such as water and energy conservation, reduction in the use of a private car (Jansson *et al*., 2010:359). These behaviours are associated with a change of habits and need to be implemented from a policy perspective (Gardner & Abraham, 2007:189).

It is necessary to elaborate further on behaviours that occur on a daily basis such as reduce, reuse and recycle. These behaviours can be done daily.

a) Recycling

Awareness of the importance of recycling has increased but products such as paper and other recyclable items are still landing on dump sites (Prasa, 2012:1). Recycling is a well-known green activity which many people claim to have participated in. A study conducted in Devon, UK, showed that respondents who participated in recycling as an activity on a daily basis (Barr & Gilg, 2006:23; Majláth, 2010:160). The availability of facilities to recycle waste is said to be a contributor for consumers to participate in recycling (Price & Pitt, 2011:342).

b) Reuse

Reuse lessens the impact on the environment caused by manufacturing, as products which are made can be reused for the same purpose as created or for other good uses before there are recycled (Ross & Evans, 2003:561).

c) Reduction

Economic growth has been an instrument in the increase of waste production: as the economy grows, production increases; increased production causes an increase in consumption, which leads to an increase in wastes. This causes pressure on the environment (King, Burgess, Ijomah, & McMahon, 2006:257). Reducing the use of products and services which have a negative impact on the environment is important to the sustainability of the environment (Tukker & Jansen, 2006:163).

2.4.1.2. Technology Choice behaviours

Technology Choice behaviour is characterised by the purchasing of technological innovations in order to reduce the impact that human beings have on the deteriorating environment (Chua, 2012a:1). This category deals with replacing old technologies with new technologies which are more environmentally friendly, such as purchasing new insulations for your home and purchasing light bulbs that save energy (Gardner & Abraham, 2007:190; Jansson *et al*., 2010:361).

2.4.2. Theories and Models in Pro-environmental behaviour

Various social-psychological theories have been used by researchers of eco-friendly behaviour to understand eco-friendly behaviour (Stern, 2000:416). Cordano, Welcomer, Scherer, Pradenas,

and Parada (2010:224) state that there are 5 models which are related and have been used frequently in past studies of environmentally friendly behaviours. These are the Theory of Reasoned Action (TRA) (Fishbein, 1975), and the extension of the TRA model, the Theory of Planned Behaviour (Ajzen, 1991), the New Ecological Paradigm (NEP), the study of Norm Activation Model (NAM) and the Knowledge Attitude-Behaviour model.

In studies that involve both behaviour and attitude, the Theory of Reasoned Action is a well-known theory used to discuss the relationship between the two variables (Chen, 2011:1767).

The Theory of Reasoned Action deals with predicting the behaviour of consumers and also what motivates those individuals to act in a certain manner (Madden, Pamela , & Icek, 2014:4). Predicting green behaviour is essential for strategic planning by organisations in order to forecast the growth of the market. TRA states that behaviour intention is a strong predictor of behaviour (Hale, Householder, & Greene, 2002:260). TRA found that for behaviour to occur there needs to be an intention to perform or buy: without behavioural intention, there would be no behaviour.

The Theory of Planned Behaviour (TPB) is similar to the TRA as it also shows the determinants of an individual's behaviour (Onner & Armitage, 1998:1429). In green consumer behaviour, this model is needed to check if the psychological constructs/variables are determinants of green consumer behaviour. Determinants of green consumer behaviour have been well researched and include environmental concern, Perceived Consumer Effectiveness and environmental knowledge.

The New Ecological Paradigm (NEP) is a scale that has been widely used for the last three decades to measure attitudes of respondents towards environmental concerns (Dunlap, Kent, Angela, & Robert, 2000:429). The NEP scale has been used to measure the environmental concern of participants and the level of environmental concern would then predict the level of environmentally friendly behaviour that consumers should exhibit.

The Norm Activation Model is a model which uses personal norms to predict certain behaviour (Onwezen, Antonides, & Bartels, 2013:143). Onwezen *et al*. (2013:141) state that eco-friendly behaviour is a form of altruistic behaviour.

The Knowledge Attitude-Behaviour model suggests that it takes time for individuals to undertake certain behaviour (Baranowski, Cullen, Nicklas, Thompson, & Baranowski, 2003:236). Another study proposes that the model might not be the most effective model for behaviour change but it has been used widely to describe behaviour change (Derzon & Lipsey, 2002:231). The Knowledge Attitude-Behaviour model is a linear model which intends to explain the relationship that environmental awareness (knowledge) has in predicting environmental concern (attitude) and then predicting pro-environmental behaviour (Kamate, Agrawal, Chaudhary, Singh, Mishra & Asawa, 2009:10). The model is widely used in the health science profession to understand why respondents adopt a certain practice.

There are different daily activities which consumers can participate in in order to ensure a more sustainable environment. Activities such as recycling, reducing and reusing are important to green consumer behaviour in our society. Technologies choices such as low voltage batteries are important in this fight against environmental depletion. The following sections discuss the main components of the Knowledge Attitude-Behaviour Model, i.e., the constructs of environmental knowledge, concern and behaviour.

2.4.3. Key concepts in understanding Green consumer behaviour: Knowledge and Concern and their relationship to Behaviour

Knowledge and awareness of environmental problems, attitude and concerns for the environment and behavior are linked. This difference in psychological constructs and their ability to influence eco-friendly behaviour still needs more research (Chan, 2001; Samarasinghe, 2012:95). There have been numerous papers which have investigated the roles of behaviour, awareness and attitudes related to the environment's depletion (Straughan, 1999:568; Cordano, 2010;225; Chan, 2001:389; Chan, 2000:8; Aoyagi-Usui *et al*, 2003:28).

More detail on the 3 main components of this study are discussed below: knowledge/awareness, concern and behaviour.

2.4.3.1. Knowledge/awareness

Environmental awareness has increased drastically over the years (Han, Hsu, & Lee, 2009:521). Behavioural research studies have shown that there is a positive relationship between knowledge and behaviour (Chan, 2001:395). Knowledge has been understood by studies as a strong

predictor of eco-friendly behaviour and, therefore, a reliable variable or component in predicting the environmental behaviour of consumers in the market (Chua, 2012b:1).

Customers are becoming more aware of the environment's depletion and the effects on their health and well-being, resulting in their adopting more environmentally friendly behaviours (Han *et al.*, 2009:524; Kaufmann *et al*., 2012: 51). Consumers have also started being aware that their purchasing behaviour has a positive effect on most environmental issues (Laroche *et al.*, 2001: 503).

However, awareness is not uniform. For example, the level of awareness of climate change globally is estimated at 61% with a high percentages of awareness in America (88%) and Europe (82%) while there were very low percentages of awareness in Asia (53%), the Middle East/North Africa (41%) and Sub-Saharan Africa (44%) (Ray, 2009:1). Similarly, a study done in the Philippines found very little knowledge of climate change (38%) despite many Philippinos having personally felt the effects of climate change (Reyes, 2013:1). A study conducted in South Africa found only 18% of respondents had any level of awareness of climate change (Taderera, 2010:1). This indicates low levels of awareness.

Albayrak *et al*. (2011:190) state that there is a noteworthy gap between knowledge and behaviour. Consumers are aware of the problems but not converting this knowledge into actions. Thus, high levels of knowledge may not necessarily translate into high levels of behaviour.

As much as awareness of environmental issues is a predictor of ECCB, there is still a need to see if the attitudes of consumers assist with green consumer behaviour.

2.4.3.2 Concern

Environmental concern is defined "as a global attitude with indirect effects on behaviour through behavioural intention" (Kaufmann *et al.*, 2012:53). Attitudes are defined "as the enduring positive or negative feeling about some person, object, or issue" (Kaufmann *et al*., 2012:53; McDaniel & Roger, 2010:520). In most studies carried out since the inception of the subject of environmental concern, it has been commonplace that people are concerned with their impact on the environment and the deterioration thereof (Takács-Sánta, 2007:26). There has been a steady increase in the concern that populations of the world have towards green issues, especially in the last three decades (Choi & Kim, 2005: 592). In America, for example, studies show that there

was an increase in environmental concern from 62% to 77% between 2004 and 2006 (Ryan, 2006: 1). Environmental concern has become an important concern not only for the USA but also for the international community. In a study in Hong Kong, 80% of respondents expressed dissatisfaction with the city's environmental quality, indicating concern for the environment (Lee, 2008:574). In the United Kingdom, statistics show that approximately 47% of consumers have favourable attitudes towards organic foods, although purchasing of organic food is at a very low percentage of between 4%-10% (Albayrak *et al*., 2011:190).

Despite these figures, a positive correlation has been found between environmental concern and environmentally friendly behaviour (Choi & Kim, 2005:591; Straughan & Roberts, 1999: 558). Straughan and Roberts (1999:558) argue that the relationship between ECCB and environmental concern is complex. They go on to state that one of links that researchers have identified between attitudes and behaviours, is that the more favourable the attitude of customers, the greater their potential usage of products. With specific reference to green purchase behaviour, Choi and Kim (2005: 592) state that there is a directly proportional relationship between environmental concern and green purchasing behaviour and other researchers argue that environmental concern is the second top predictor of green consumer behaviours (Laroche *et al.*, 2001:510; Lee, 2008:574; Han, 2009:578). This means that the level of environmental concern is a major influence on the degree of action a consumer will take in sustaining the environment. In past studies, the degree to which individuals were willing to make a positive difference to the environment was related to the intent to purchase eco-friendly products (Shrum, 1995:73;McCarty, 2001:95). Thus, depending on the attitude of the individual towards sustaining the environment, research shows that you can predict their behaviour (Kaufmann *et al*., 2012: 53). But Takács-Sánta (2007:26) argues that it is not the weakness of environmental concern but the lack of alternatives that jeopardises the adoption of ecologically conscious consumer behavior: concern alone is not sufficient to guarantee green behaviour.

Concern for the environment is a predictor of ecologically conscious behavior. However, various authors have indicated that a gap exists between concern and behaviour: the 'green gap'.

2.5. The Green Gap

Most individuals in the market consider themselves as eco-friendly or sensitive to the environment but their behaviour contradicts their confessed sensitiveness (Albayrak *et al*., 2011:190; Fisher, Bachman, & Bashyal, 2012:173).

There are many names which are used to describe the difference between the behaviour and the level of concern and knowledge of green issues and products. The gap that exists between knowledge or awareness and/or concern and behaviour has been called the value-action gap (Honabarger, 2011:15), the environmental values-behaviour (EVB) gap (Kennedy *et al*., 2009: 151), and the 'green gap' (Honabarger, 2011:16; Nielsen, 2011:1). The 'green gap' can also be defined as "the observed disparity between people's reported concerns about key environmental, social, economic or ethical concerns and the lifestyle or purchasing decisions that they make in practice" (Flynn *et al*., 2009:158).

2.5.1. Evidence of the 'green gap'

There is compelling evidence from past research of the environmental concern that people have not matching their behaviour. For example, a global survey done by McKinsey & Company indicated that 87% of the participants were concerned about the environmental and social impact caused by their purchase behaviour and yet only 33 % admitted to having bought products that assist in sustaining the environment (Bonini & Oppenheim, 2008:56). In a Canadian study done in 2004, it was shown that 72,3% of the respondents stated they were concerned about the environment but their actions did not support their knowledge as, in the same study, results indicated 10.8% stated their lifestyles were supportive of the environment (Kennedy *et al*., 2009: 156).

In a study carried out by Nielsen, it was shown that 83% of consumers in the world are aware of the need to implement programmes to assist with environmental recovery yet less than 20% are willing to pay more for their green products (Nielsen, 2011:1).

The above studies mostly reflect research done in developed countries. Few studies have been conducted in developing nations. In a study conducted in a University in Turkey which looked at consumer skepticism towards green products also found a disparity between green consumer behaviour and environmental concern (Albayrak *et al*, 2011:190). Another study conducted in

India explored the green concern and behaviour in the lodging industry (Manaktola & Jauhari, 2007:364). Manaktola & Jauhari (2007:364) found that respondents were conscious of environmental issues but they still did not adopt green lifestyles, the reason being that they were not willing to pay a premium price. A recommendation was made that practical steps must be made to institutionalize green practices by offering rewards and tax benefit (Manaktola & Jauhari, 2007:364).

In South Africa, studies have been done on environmental perceptions, awareness and behaviour (Anderson, Romani, Phillips, Wentzel & Tlabela, 2007:133) and another study conducted in the Durban Municipality researched making laws at local government level to adapt to climate change (Roberts, 2008:521). However, no studies could be found that specifically investigate the green gap in South Africa nor the reasons for this gap. This study aims to fill this research gap.

2.5.2. Reasons for the lack of ECCB

There are several reasons which have been cited by past research for this 'value-action' or 'green gap' (Bennet & Williams, 2011:20; Han *et al*., 2009:520; Majláth, 2010:158). Finding out the reasons or the barriers for consumers to adopt green lifestyles has been said to be a complex issue (Kaufmann *et al.*, 2012:51). While individuals can state that they value the environment, in some instances other issues take precedence over their concern for the environment, e.g., financial security and safety (Kennedy *et al.*, 2009: 151). Han *et al*. (2009:520) state that monetary and non-monetary costs are reasons for the small numbers of eco-friendly consumers who are in the market. Majláth (2010:157) states that there are seven main reasons why consumers do not adopt ecologically conscious consumer behaviour:

1. Green products are expensive.
2. The lack of green products in the market.
3. The inferiority of green products in terms of quality and efficiency.
4. Brand loyalty to other brands which are not green products.
5. Perceived Consumer Effectiveness.
6. Poor brand image.
7. Lack of information about the availability of green products.

In the section to follow some of the reasons given for the green gap are covered in more depth. It must be noted that they are not in order of importance.

2.5.2.1. Perceived Consumer Effectiveness (PCE)

Perceived Consumer Effectiveness (PCE) is defined as the extent to which consumers believe that their individual efforts can have a positive impact on the environment (Chang, 2011:21; Choi & Kim, 2005:592). Majláth (2010:158) states that in a study done in America, 17% of respondents did not believe in their individual effectiveness, i.e., that they could make a difference by purchasing green products.

PCE is seen to be a significant predictor of the variety of ecologically conscious and pro-environmental consumer behaviours. Roberts (1996:217) further argues that Perceived Consumer Effectiveness is the single strongest predictor of eco-friendly behaviour, surpassing both psychological and demographic factors (Chang, 2011: 21; Majláth, 2010:158; Rex & Baumann, 2007:570; Straughan & Roberts, 1999:560). Consumers who score low in the PCE have a chance of having fluctuating attitudes when it comes to buying green products, because these individuals essentially do not possess a strong belief in their ability to make a difference (Chang, 2011: 21).

2.5.2.2. Price

Green products are, and are perceived to be, more expensive (Bennet & Williams, 2011: 44), and there are often costs for switching to sustainable products (Data, 2011: 2). Although long-term cost savings may come from using energy efficient products like hybrid cars (DERM, 2012: 3) and light bulbs, initial costs are usually higher. Majláth (2010:157) states that price is the biggest reason that consumers do not buy green products. Consumers feel that green products are a heftier price than ordinary products but with the same functions (Bennet & Williams, 2011: 44). Consumers from a Greek study were less willing to purchase green products if there was a significant difference in the price of green products (Tilikidou, 2007:128). Thus, while environmental concern has increased over the years, the willingness of consumers to purchase or pay premium prices for eco-friendly products has not been increasing at the same rate of concern (Gupta & Ogden, 2009:376).

However, other research has found that the willingness to pay a premium price is positively related to the environmental concern of consumers (Laroche *et al*., 2001:513): more concerned customers are prepared to pay higher prices (TGI, 2009: 1). This also applies to certain types of

green product. For example, (Gupta & Ogden, 2009:376) found consumers willing to pay premium prices for certain green products, such as hybrid cars, energy efficient appliances and electricity. This inconsistency in the willingness to pay a higher price for green products needs more investigation.

2.5.2.3. Product attributes

The demand for eco-friendly products is growing across the globe but there is a lack of understanding of or information on green products' attributes (Sharma, 2011:154). Product attributes play a very vital role in the purchasing of green products (Gan *et al*., 2008: 94). Although product quality, price and convenience are still important factors, the green appeal is not yet able to sway consumers to make a purchasing decision. Some consumers are unsure about green products and how they can benefit although they are willing to purchase green products. Having limited or little knowledge of the attributes of green products is thus a reason for the extent of the 'green gap' (Gan *et al*., 2008: 94).

Green products have been found to be preferred to conventional products because they have the following attributes: better taste, the ability to protect the natural and physical environment and they are thought to be a healthier choice (Sharma, 2011:155).

2.5.2.4. Scepticism

Sharma (2011:154) states that one of the biggest obstacles to consumers' adopting a green lifestyle or purchasing eco-friendly products is the lack of trust of green products. Consumers' scepticism, or distrust of green products, reduces their ability to make a pro-environmental decision (Albayrak *et al*., 2011: 192; Sinnappan & Rahman, 2011). This proves that skepticism is influential in the adoption of green lifestyles.

2.5.2.5. Availability of Green products

Availability of green products from local suppliers is limited and thus consumers cannot purchase the product (Data, 2011: 2). Tilikidou (2007:128) found that some green products, such as organic wine, toiletries, pasta and clothing, are difficult to find. GrailResearch (2011:11) states that one of the reasons consumers do not adopt green consumer practices is that products are not available: 34% of their respondents indicated low availability of green products as a reason for not buying green products.

2.5.2.6. Collectivism and Individualism

A variety of social behaviours are influenced by both individualistic and collectivistic orientations (Kaufmann *et al*., 2012:56). Since green consumer behaviour can be categorized as social behavior, it means collectivism and individualism can also influence it. Past research has stated that individualism and collectivism are two major values which influence consumer behaviour (Laroche *et al*., 2001: 506). Some consumers act interdependently rather than independently and are, therefore, more group-oriented (Choi & Kim, 2005: 592) or collectivist. Collectivism has been found to be positively related to consumer beliefs in recycling and their recycling behaviours (McCarty & Shrum, 2001:97). Therefore, having campaigns showing a community participating in environmentally sustainable behaviours together will assist in decreasing environmental depletion because collectivism is a strong influence on pro-environmental behaviour (Chua, 2012b:1).

Individualism on the other hand, is about each person taking responsibility for their own behaviour which is harmful to the environment. Chua (2012b:1) argues that in order for individuals to undertake green consumer behaviour they need to have a sense of responsibility towards environmental issues and the depleting of the environment around them. Thus individualism may well also influence the green gap.

2.6. Conclusion

Sustainability cannot be left to one stakeholder to address. This chapter addresses the need for both governments and business to play a major role in this fight for a more sustainable environment. The commitment of individual consumers to taking action against the depletion of the environment cannot be overstated. It is imperative to understand green consumers and make attempts to inform, remind and persuade them.

As discussed above, the need for environmental concern and an increase in the awareness of environmental issues and products forms the core of the fight against the depletion of the environment. Developed countries have been showing fairly high levels of awareness while developing countries have shown average to below average levels of awareness. There is a gap in the level of awareness between developed and developing countries.

As in the case of environmental awareness/knowledge, environmental concern shows a similar pattern, in that environmental concern is higher and better researched in developed countries than it is in developing countries. Environmental concern is an important component of this study as it is the instrument which measures respondents' attitudes to purchasing green products.

Environmental concern and environmental awareness are essential in purchasing green products. Having an understanding of these two variables will assist in ensuring green consumer behaviour is achieved. Consumers' actions towards the purchasing of green products are researched but there is a constant need to reassess the levels of actions that are being taken to purchase green products.

Researchers have discovered a value-action gap or a green gap. The existence of the green gap, which is the difference between environmental concern and ecologically conscious consumer behaviour, needs to be addressed further especially in developing countries such as South Africa where not much research has been conducted.

A great deal of research has been done on green consumers and their attitudes or behaviours in the world but the researcher found that research is limited in Africa and South Africa.

The following chapter discusses the methodology applied in this study. It shows how the researcher went about fulfilling the research purpose and objectives of this study, the purpose being to investigate the level of environmental awareness, concern and behaviour of the respondents.

Chapter 3: Research Methodology

3.1 Introduction

Research methodology "is a systematic and objective process of design, collection, analysis and reporting of data relevant to a specific marketing situation" (Cant, Charlene, Daniel, & Theuns, 2003:26). This chapter reports on the methodology used to gain insight into the research problem at hand, i.e., the identification of the green awareness, attitude and behaviour of Pietermaritzburg residents and investigation of the relationships between these constructs.

For this particular research a descriptive research design has been used with quantitative research methods as the basis for this study. The Statistical Package for the Social Sciences (SPSS) was used in order to analyse the data collected (Chisnal, 1997:13; McDaniel & Roger, 2010:320).

This chapter covers extensively the methodology used in order for this study to achieve its research objectives. The chapter starts by reiterating the problem statement and the research objectives of the study; then the research design is discussed. This includes a discussion of the sample design, consisting of the target population, sample method and size; the questionnaire design, in which the questions are explained in terms of their relevance to the research objectives; and the data analysis. Lastly, the chapter looks at the reliability and validity of the study and at ethical issues.

3.2 Problem Statement

The globe faces environmental challenges which need serious intervention from all stakeholders so as to improve the environment's sustainability (OECD, 2009: 5). Governments should assist by implementing regulations and policies that govern the use of goods and services that are harmful to the environment. Concern for the environment's depletion and the knowledge that it is human beings who have majorly contributed to this depletion exist but these have not translated into pro-environmental behaviour (Flynn *et al.*, 2009:159). Hence, there has been a difference between concern and behaviour which is called the 'green gap' or the 'value-action gap' (Kennedy *et al*., 2009). Having an understanding of this 'green gap' and the reasons for it will be beneficial to activists and green marketers in order to assist in saving the planet.

Thus the purpose of this study is to determine the extent of the 'green gap' and gain insight which could assist marketers and policy makers to make sound decisions concerning increasing environmentally friendly behaviour amongst consumers in Pietermaritzburg, South Africa and other developing countries.

3.3 Research objectives

This section discusses the research objectives and the rationale behind them. This research set out:

1. To determine the level of awareness of green issues amongst Pietermaritzburg residents.

This objective intends to determine whether the residents of Pietermaritzburg know about green issues and products. No action can be taken to close the green gap without people being aware of environmental issues.

The level of awareness of green issues is a predictor of a person's taking action or no action on a green issue (O'Keeffe, 2012:1). This objective is important in achieving the research purpose. Awareness is needed to address environmental challenges and also for the purchase of green products. Green purchasing cannot be expected if there is not awareness of the need for green behaviour and of the green products' availability.

2. To identify the extent of environmental concern that Pietermaritzburg residents have.

Again, concern is necessary before action can occur (Rex & Baumann, 2007:569). Attitudes are key components in the decision-making process (Rahmani & Namin, 2012:134). Ascertaining the level of concern, as well as attitudes towards depletion of the environment, is necessary for achieving green behaviour.

3. To assess the level of action that Pietermaritzburg residents have made with regards to green issues.

The behaviour of respondents needs to be measured in order for the study to provide information on how much actions that are environmentally friendly are being taken within Pietermaritzburg. It will be good for marketers and policy makers to be informed about the actions of respondents.

4. To establish the reasons for the lack of ecologically conscious consumer behaviour (ECCB).

If ECCB is low and/or there is a 'green gap', the next step is to understand the reasons behind the lack of ECCB. Understanding the reasons for the gap can aid in devising strategies to lessen these. Perceived Consumer Effectiveness is one of the reasons investigated. Perceived Consumer Effectiveness (PCE) is the extent to which consumers believe their actions will make a difference (Rex & Baumann, 2007:572). Consumers who are aware and concerned may not act on their concerns if they believe that their contribution is too small to make a difference.

5. To determine the relationship between ECCB and other green consumer behaviour constructs (Knowledge, EC and PCE).

Studies have shown various relationships that ECCB has with the constructs found in this study, namely, Environmental Concern (EC), Environmental Awareness (Knowledge) and Perceived Consumer Effectiveness (PCE).

6. To determine the extent of the gap between concern and action.

Several studies have shown the extent of the gap between concern and actions (Blake, 1999:258; Honabarger, 2011:15; Kennedy *et al*., 2009:151; Nielsen, 2011:1). Having knowledge of the extent of this gap in Pietermaritzburg will assist in future campaigns aimed at encouraging green behaviour.

7. To determine whether demographic factors such as gender, education, age and income influence the constructs of green consumer behaviour.

Several studies have investigated the different demographic factors which affect green consumer behaviour (Rex & Baumann, 2007:572; Straughan & Roberts, 1999:568). This objective will seek to disprove or confirm their findings for Pietermaritzburg respondents. Most of these studies were done in developed countries (Bui, 2005:20; Rex & Baumann, 2007:570; Straughan & Roberts, 1999:558).

3.4. Research Design

Research design is the blueprint for fulfilling objectives and providing insight into the management dilemma (Blumberg, 2008:68) or "the plan for addressing the research objectives" (McDaniel & Roger, 2010:49), or 'the overall plan of methods to collect and analyse the data' (Hair, Bush, & Ortinau, 2009:51). Quantitative research methods refer to "explaining phenomena by collecting numerical data that are analysed using mathematically based methods" (in particular statistics) (McDaniel & Roger, 2010:112). There are three types of research design: exploratory, descriptive and causal (Cant *et al*., 2003:27; Hair *et al*., 2009:49). This study uses the descriptive research design.

Descriptive research is "conducted to answer who, what, when, where and how questions" (Burns & Bush, 2012:70; Hair *et al*., 2009:51; McDaniel & Roger, 2010:49). Descriptive research is used frequently in business and in life in general. It involves taking numerical data to answer research objectives (Hair *et al*., 2009:51). There are two types of descriptive research studies: cross-sectional and longitudinal (Burns & Bush, 2012:51). The questionnaire conducted in this study falls under the cross-sectional category of descriptive studies. A descriptive research design using quantitative data was used to describe the behaviour of consumers in terms of purchasing green products in Pietermaritzburg.

3.5. Sample Design

3.5.1. Target Population

The target population for this study was residents in the Pietermaritzburg area. The target population is the group of people that the study wants to make general assumptions about (Muijs, 2011:37) According to the latest figures that could be found, the number of residents in the UMsunduzi Local Municipality is approximately 618 853 (Statistics South Africa, 2011:55).

Since the research is about investigating the 'green gap', which is the difference between the levels of concern and the purchasing behaviour of consumers, the adult population is seen as an appropriate population since they possess purchasing power. In the South African constitution any person above 18 is considered to be an adult, and thus has the capacity to make their own decisions (Strode, Slack, & Essack, 2010:247).

There are an estimated 423 923 people who are over the age of 18: 54% female and 46% male (Statistics South Africa, 2011:55). The race distribution of Pietermaritzburg residents is distributed in this manner: Africans 501 506, Whites 36 890, Indians 60 591 and Coloureds 17 758 which is inclusive of residents under 18 (Statistics South Africa, 2011:55).

3.5.2. The Accessible population and study site

Financial and time constraints, and the magnitude of the population, made it impractical to study the whole adult population of Pietermaritzburg, therefore, a sample needed to be drawn from the adult population.

Since the questionnaire included a large number of constructs each with multiple measures, it was anticipated to be fairly lengthy, thus, the questionnaires needed to be distributed to respondents where it would be convenient for them to complete them. The study site chosen was the Mkondeni Test Driving Centre (MTDC) licensing department. This study site was chosen because it is the place where all Pietermaritzburg residents have to go to book their learner and driving tests. They go there to be tested for their learner and driving licenses or to renew their licenses, and thus, it provides access to a large number of relevant membership of the populace. There are also usually fairly long queues thus providing people who may be more likely to have time to answer the questionnaire, thereby improving the response rate. The MTDC is ideal for data collection as it is the only testing centre in Pietermaritzburg and most people who go there are over the age of 18 years, due to legal age restrictions for driving. It is acknowledged that any study site is likely to have some limitations. In this case the site may exclude certain elements of the population, for example, those who do not drive. Overall it was believed that the benefits of the site outweighed the limitations, as the site would give a good cross-section of respondents from all race groups, genders and ages.

Other study sites such as malls were considered to be inferior as they have been over-used in consumer behaviour studies in the past and are also unsuitable for lengthy questionnaires.

Data was collected over a period of a month, 3 days per week, chosen to ensure all days were eventually covered during the month.

3.5.3. Sample Size

At the confidence level of 95% and with a 5% confidence interval a sample of 378 was desired (SSC, 2012: 1). The researcher distributed 378 questionnaires but received 330, of which 317 were usable in the study, giving an effective response rate of 84%.

3.5.4. Sampling Method

Non-probability sampling is "a subset of a population in which the chances of selection for the various elements in the population are unknown" (McDaniel & Roger, 2010:343). Due to restrictions on access to the full population a non-probability, convenience sampling method was used. The researcher chose a convenience sample for the following reasons:

3.5.4.1. Time and financial constraints.

Convenience sampling is useful where there is a pressing need for an inexpensive method that can bring true value (McDaniel & Roger, 2010:344). The study had to sample the population and use it to gain insight into the overall population. It is unrealistic and difficult to conduct a study on the population of Pietermaritzburg; there would not be enough time to conduct the study on each person. Financial resources also did not enable the researcher to reach the whole population.

3.5.4.2. Freedom of selecting whoever the researcher finds to conduct the research (McDaniel & Roger, 2010:435).

As probability sampling was not possible, as much rigour as possible was applied to the convenience sampling to ensure as representative a sample as possible. This study avoided the over-used mall intercept and student convenience samples and selected a data collection point which would provide access to a wide spectrum of Pietermaritzburg adult residents. The researcher chose respondents willing to participate and was not specific as to whether they were sitting or standing in the queue or at the testing centre facilities.

3.5.4.3. This method of collecting data is efficient and effective (Hair *et al*., 2009:35; McDaniel & Roger, 2010:435).

With probability sampling not possible, convenience sampling provided the next best alternative. This sampling method is widely used in research (Chisnal, 1997:67).

There are limitations with using convenience sampling (McDaniel & Gates, 2010: 435):

- Bias
- Sometimes representation is not made of the entire sample.

Sample representation is important in order to decrease bias and hence the researcher looked at making the sample closely related to the population of the study by conveniently selecting participants in accordance to their race, gender and age, as far as possible, so as to remove bias from the data. The researcher distributed questionnaires to people who were in ques at the training centre who were willing to participate in the study. To make the sample representative, people who belonged to minority races such as Whites, Indians and Coloureds. And also to address the other demographics there were conveniently selected to assist in representation of the sample.

3.6. Questionnaire Design

For data to be collected, a self-administered, structured questionnaire was used to achieve the research objectives. A questionnaire "is a set of questions designed to generate the data necessary to accomplish the objectives of the research project; it is a formalized schedule for collecting information from respondents." (McDaniel & Roger, 2010:371).

A good questionnaire needs to meet the following criteria:

- Provide the necessary decision-making information.

The questionnaire was adapted from Straughan and Roberts (1999:558) but was actually developed by Roberts (1996) and thus has been tested before and produced information which was able to assist in decision-making. The questions in the questionnaire were also measured against the research objectives of this study in order for the questions to assist in answering the research objectives and ultimately provide recommendations to marketers, policy makers, green movements' organisations, businesses and governments.

- Consider the respondent.

The study's questionnaire considers the respondent, which is why it attempted to limit the amount of questions and pre-tested the instrument to find any challenge that could affect the respondent. Also, in terms of making sure that the questionnaire was not in any way harmful to the respondents ethical clearance was obtained.

- Meet editing and coding requirements (McDaniel & Roger, 2010:371).

The questionnaire was a structured survey and was thus made easy to code and edit. The whole questionnaire was in a Likert scale format making for easy coding. The research instrument used in this study meets all the requirements mentioned by McDaniel and Roger (2010:371).

3.6.1. Content and structure of the questionnaire

This section details the questions asked and their relevance in achieving the research objectives.

The questionnaire is adapted from Straughan and Roberts (1999) and the ECCB scale was developed by Roberts (1996) and recently used by several authors (McEachern & Carrigan, 2012:189, Datta, 2011:126). The Environmental Concern scale, which is called the New Ecological Paradigm (NEP) scale, was developed by Dunlap *et al*. (2000:425) and Dunlap and Van Liere (1978). The other sections in the environmental issues section, reasons for the lack of ECCB, were created by the researcher from previous information found in different sources of literature, therefore making the research instrument ideal for use because it had been tested previously. The alpha scale for the sections used in Roberts (1996) were ECCB scale 0.99, environmental concern scale 0.84 and the Perceived Consumer Effectiveness had an alpha scale of 0.72. Straughan and Roberts (1999:565) looked at the segmentation of green consumers and used a sample of university students.

Ecological Conscious Consumer Behaviour (ECCB) questions (refer to Appendix1).

Questions 1-25 investigated various eco-friendly behaviours performed by consumers. These questions were in a 5-point Likert scale format from 'Strongly disagree' to 'Strongly agree'. These questions addressed Objective 3: to assess the level of action that Pietermaritzburg residents have made with regards to green issues. For the purposes of discussion here the researcher has grouped the questions which dealt with similar forms of behaviour. The questions are therefore not in the chronological order as they appear in the questionnaire.

3.6.1.1. Reduce

1. To save fuel, I drive my car as little as possible.

2. I normally make a conscious effort to limit my use of products that are made of or use scarce resources.

4. I always try to use electric appliances (e.g. dishwasher, washer and dryer) before 10 a.m. and after 10 p.m.

6. I have tried very hard to reduce the amount of electricity I use.

Questions 1, 4 and 6 have a common subject which is the reduction of energy usage. The aim of these questions was to gain an understanding on how respondents reduce their use of products which use energy. Reducing as an eco-friendly action/behaviour has a positive impact on the environment (Young, Hwang, McDonald, & Oates, 2010:23). As energy usage can take various forms, 3 separate questions were included. Question 1: As an activity that is done daily, driving less will have an impact on curtailing behaviour (Jansson *et al.*, 2010:358). Therefore, driving less daily will have an impact on carbon dioxide emitted by cars. Thus, driving less means that less carbon dioxide is released into the atmosphere which can result in a decrease in some of the environmental issues such as air pollution and global warming through an increase in greenhouse gas.

Question 2 deals with limiting or reducing of the usage of products made of scarce resources because it looks at the broader picture, which includes products which are not related to energy. So people who do not own appliances such as those which are given in Question 2 may be able to relate to this question.

Some electricity is generated from coal powered plants (Clayton, 2013:1). Reducing electricity usage is vital in reducing the amount of carbon dioxide which is released into the atmosphere. Thus, Question 4 and 6 assess the extent to which respondents reduce their electricity usage, in order to reduce, there are better times to use electricity (Sou, James, Henrik, & Karl, 2011:5144).

3.6.1.2. Non-purchase of Products Harmful to the Environment

10. I have convinced members of my family or friends not to buy some products which are harmful to the environment.

7. If I understand the potential damage to the environment that some products can cause, I do not purchase these products.

15. When I have a choice between two equal products, I always purchase the one which is less harmful to other people and the environment.

19. I will not buy a product if the company that sells it is ecologically irresponsible.

25. *I do not buy household products that harm the environment.*

These questions assess the extent to which respondents choose not to purchase certain products based on their potential harm to the environment. Consumers are moving away from products that are harmful to the environment (Agency, 2009:2) thus further reducing their negative impact on the environment. This is also an aspect of reducing their effect on the environment.

Purchasing products that are not harmful to the environment is essential for the sustenance of the environment (Yam-Tang & Chan, 1998:358).

3.6.1.3. Purchasing of Green Products

8. *I have switched products for ecological reasons.*

9. I have purchased products because they cause less pollution.

These questions assess the extent to which respondents purchase environmentally friendly products which do not negatively impact on the environment thus again reducing their negative impact.

3.6.1.4. Purchasing of Energy Efficient Products

3. I buy energy efficient household appliances.

11. I have replaced light bulbs in my home with those of smaller wattage so that I will conserve on the electricity I use.

Having household appliances and light fittings that use energy efficiently plays a role in reducing energy consumption. These actions also reduce the negative impact of consumers on the environment.

3.6.1.5. Packaging

Question 5: I will not buy products which have excessive packaging.

The excessive packaging of products results in depletion of the environment (Polman & Leahy, 2009:1).

Question 13: I do not buy products in aerosol containers.

Aerosol containers have an effect on the environment and have been seen as major contributors to the ozone layer's depletion.

The section above has dealt with several actions which one can participate in in order to reduce the impact on the environment. Other environmentally friendly behaviours include reuse and recycling.

3.6.1.6. Reuse

Question 14: Whenever possible, I buy products packaged in reusable containers.

Question 21: I supply my own carrier bags at the supermarkets.

Reusable packaging is important for a sustainable environment. Consumers who purchase reusable containers or use reusable carry bags are important in the fight against environmental depletion, as well as pollution (Hopewel, Dvorak, & Kosior, 2009:2115).

3.6.1.7. Recycle

9. I use a recycling centre or in some way recycle some of my household trash.

16. I buy products made from recycled paper.

17. I make an effort to recycle glass.

18. I make use of the different recycle bins for all my wastage.

23. I try only to buy products that can be recycled.

Recycling has been a major part of the environmental sustainability cause as it reduces the use of energy and saves the natural resources used to make products (Agency, 2009:36). Therefore this study asked several questions related to recycling behaviour.

The following questions relate to the impact of price on ECCB:

3.6.1.8. Price

20. I see green products to be expensive.

22. I have purchased light bulbs that were more expensive but saved energy.

24. I usually purchase the lowest priced product, regardless of its impact on society.

The price of purchasing goods or services is an element in the marketing mix of goods and services, and consumers are prepared to pay a high if they perceive that that product or service will bring value (Malik, 2013 :19). Therefore, for environmental sustainability to be ensured, the price of products needs to be strategically integrated into the plan. These questions investigate respondent's perceptions about the role of price in green product purchases. These questions were also useful in investigating possible reasons for a lack of ECCB.

3.6.2. Environmental Concern

Questions 30-41 related to environmental concern. These are based on the interaction between human beings and earth (environment). They are based on the New Ecological Paradigm (NEP) scale (Dunlap *et al*., 2000:425). The NEP has been used in many different studies (Amburgey & Thoman, 2012:325; Anderson, 2012:1; Vikan, Camino, Biaggio, & Nordvik, 2007:227). The scale measures the level of environmental concern by asking the respondent to indicate the level of agreement with 12 statements using a 5-point Likert scale format from 'Strongly disagree' to 'Strongly agree':

30. *Plants and animals exist primarily to be used by humans.*
31. *We are approaching the limit of the number of people the earth can support.*
32. *To maintain a healthy economy, we will have to develop a steady-state economy where industrial growth is controlled.*
33. *The earth is like a spaceship with only limited room and resources.*
34. *Humans need not adapt to the natural environment because they can remake it to suit their needs.*
35. *There are limits to growth beyond which our industrialized society cannot expand.*
36. *The balance of nature is very delicate and easily upset.*
37. *When humans interfere with nature, it often produces disastrous consequences.*
38. *Humans must live in harmony with nature in order to survive.*
39. *Mankind is severely abusing the environment.*
40. *Humans have the right to modify the natural environment to suit their needs.*
41. *Mankind was created to rule over the rest of nature.*

In studies conducted in two countries comparing respondents NEP scores it was found that the scale was reliable with a Cronbach's alpha of 0.72 (Vikan *et al.*, 2007:227).

3.6.3. Reasons for lack of ECCB

The reasons for the lack of ECCB are discussed in the following section. The section begins with Perceived Consumer Effectiveness (PCE) as reason for consumers not to adopt green consumer behaviour. If a consumer has a strong PCE it is expected that they would adopt green consumer behaviour and if it is low, then they would not adopt a green lifestyle. This section is followed by various other reasons taken from past literature. There are 8 reasons which are investigated in this study but, of course, there could be more.

3.6.3.1. Perceived Consumer Effectiveness questions

Questions 26-29 dealt with respondents' perceptions of their own impact on the sustainability of the environment. These questions were taken directly from the Straughan and Roberts (1999:558) questionnaire, and have therefore been tested before.

Studies have shown that Perceived Consumer Effectiveness is a significant indicator of eco-friendly behaviour and also that the relationship between these constructs is positive (Gul, 2013:25; Straughan & Roberts, 1999:558), i.e., people who perceive themselves to have an effect on the environment are more likely to engage in ECCB; those who do not believe that their individual efforts can make a difference, are less likely to behave in an environmentally friendly manner (Gul, 2013:25).

26: It is worthless for the individual consumer to do anything about pollution.

27: When I buy products, I try to consider how my use of them will affect the environment and other consumers.

28: Since one person cannot have any effect upon pollution and natural resource problems, it doesn't make any difference what I do.

29: Each consumer's behaviour can have a positive effect on society by purchasing products sold by socially responsible companies.

Question 26 looks at the individual's perception of his/her worth in the fight against pollution and ultimately the environment as a whole.

Question 27 investigates the individual's consideration of products depending on their effect on the environment. Having knowledge of the individual's perceptions will enable stakeholders to know, by purchasing of products, how individuals think about the depletion of the environment.

Question 28 tests the perception of individuals about the ability of one person to make a difference. This is tested by giving a scenario which is factual and testing if the individual would think it is useless for one person to make a difference. Where a respondent thinks that an individual can make a difference then he has high Perceived Consumer Effectiveness.

Question 29 looks at the individual view of support companies who are environmentally friendly and this is done by purchasing eco-friendly products and services. The views of individuals will assist companies and other stakeholder to know if there is a growing market for their eco-friendly products over traditional products.

3.6.3.2. Other reasons for Lack of ECCB

Questions 42-49 deal with some of the reasons cited in the literature for not adopting ecologically conscious behaviour but that were not already covered by the Straughan and Roberts (1999) questions. These reasons were covered by the researcher to gain a better understanding of what respondents perceive as the main causes of their not adopting a green lifestyle. These covered the following reasons:

42. Product quality of green products is inferior

Consumers in the market have different perceptions on green products' quality. Some think they are of better quality and others think they are of inferior quality compared to their counterpart. Having better knowledge of green products' attributes will assist in the purchase of these products (Gan *et al*., 2008:94).

43. Promotion of environmentally friendly products is lacking.

For green products to be seen and sold, promotion is essential. Promotion of green products means that products are clearly labelled and show a certain percentage of recyclability and environmental impact (Hosseinzadeh & Azizpour, 2013:116). A product that is clearly labelled as a green product will ultimately be promoting the environmental friendliness of that product.

44. I am unable to distinguish between green and conventional products.

Green products are perceived to be healthier, have a better taste and most importantly have the ability to protect the environment better than conventional products (Sharma, 2011:153). Conventional products contribute to the unsustainability of the environment that human beings live in.

45. Green products are not easily available.

A study found that green products are not easy to find (Tilikidou, 2007:128). If these products are not easily available then it will prevent the purchasing thereof. Consumers are confronted by the inability to find information on the environmental impact of a product that they are intending to purchase.

46. I am not aware of any green products.

The awareness of green products comes from the promotion of this product and such awareness can be achieved by labelling and through using the promotional mix elements. A lack of awareness can be a factor in the purchase or non-purchase of green products.

47. I don't trust green branded products.

Scepticism is one of the barriers which leads people not to buy green products as some may feel that products which are labelled as green products cannot be trusted. Developing green brands which consumers can trust will assist in the fight for a more sustainable environment.

48. Green products are not clearly labelled.

In the search for green products, it is necessary for consumers easily to find these products. Labelling of products plays a major role in distinguishing between green products and other products.

49. There are no mechanisms available for me to practice a green lifestyle.

Mechanisms such as differentiated rubbish bins for recycling waste which assist consumers to adopt a green lifestyle need to be easily and readily available so that consumers who are aware and concerned can easily practice green behaviour.

3.6.4. Awareness of green issues

Questions 50-55 addressed a few of the current issues that are confronting the environment, as well as some of the campaigns aimed at building awareness and encouraging green behaviour. The constraint of questionnaire length prohibited the coverage of all environmental issues discussed in the literature. However, it is believed that answers to these questions will give an indicator of levels of awareness of environmental issues.

3.7. Pilot Study

Pilot studies are used to identify the limitations of the questionnaire (Muijs, 2011:44). A pilot test is conducted to detect weaknesses in the data collection instrument (Hair *et al*., 2009:60). The pilot study sample was chosen to represent the research sample. A sample of 30 was selected and the researcher made an effort to represent all the demographic variables available in the study in relation to race, gender and age. These components were chosen as they could easily be observed without investigating further about the respondents' backgrounds. The sample was conveniently selected and this was seen as reasonable since the study was also using convenience sampling. The pilot study ensured that different types of respondents would be able to understand the research instrument.

A pilot study was done in the MTDC in mid May 2013 before the distribution of the final questionnaire. The length of the questionnaire was taken into consideration while conducting the pilot test as it was seen as a critical factor to receiving unbiased data. The longest time, it took a respondent was 10 minutes but some respondents were able to complete it in 5 minutes. It was decided that this was an acceptable time for respondents to complete the questionnaire without negatively affecting response rate. Therefore, there were no changes in terms of the length of the study. Respondents were asked to give feedback on the questionnaire they had filled in. Respondents from the pilot study experienced no difficulty in answering the questions in the research instruments. There were no changes made to the research instrument.

3.8. Data Analysis

Data analysis is conducted after doing data collection. The information collected in the questionnaires was coded and captured. The Statistical Package for the Social Sciences (SPSS) was used in order to analyse the data collected (Chisnal, 1997:13; McDaniel & Roger,

2010:320). This section looks at the different techniques used to analyse the data by the researcher in this study.

In order to calculate the different construct composite scores, the study had to reverse several questions. The following questions were reversed for analysis purposes: Questions 31, 35, 41 and 42 from environmental concern construct; only two ECCB items needed to be reversed, Questions 20 & 24; and for Perceived Consumer Effectiveness Questions 26 & 28 had to be reversed.

Composite scores were calculated by taking questions which were related to form individual constructs. Four constructs were derived. In order to find the composite scores of each of the constructs, the researcher took the number of questions which were related to the construct and divided by their number. The questions which were selected had to be tested for reliability before being included in the composite score. Furthermore, other questions need to be reversed as they were negative.

3.8.1 Multiple Regression Analysis

The study investigated the relationship between knowledge, concern and behaviour through inferential statistical analysis. A multiple regression model was used to understand the relationship between the different variables. Multiple regression "tells you how much of the variance in your dependent variable can be explained by your independent variables. It also gives you an indication of the relative contribution of each independent variable" (Pallant, 2010:153). Multiple regression tells you "how well a set of variables is able to predict a particular outcome" (Pallant, 2010:148). Since this study dealt with a few variables, namely, environmental concern, environmental awareness, Perceived Consumer Effectiveness and ECCB, the focus was on how the other 3 variables are able to predict ECCB. The regression model measures amongst various things, the ability or strength of predictors in predicting the outcome and the ability of the model to fit the population under study (Muijs, 2011:145).

Studies have found a green gap, which is the difference between ecologically conscious consumer behaviour and environmental concern (Nielsen, 2011:1). These calculations were done for each respondent.

An ANOVA test was conducted in order to check the impact of demographics on the constructs of this research study. The research constructs used are Awareness of Environmental Issues (AEI), Environmental Concern (EC), Perceived Consumer Effectiveness (PCE) and Ecological Conscious Consumer Behaviour (ECCB).

The constructs are tested for reliability using Cronbach alphas presented in the following section.

3.9. Reliability and Validity analysis

Cronbach alphas were calculated for each construct. Reliability is the degree "to which test scores are free of measurement error" (Muijs, 2011:61) and it is related to the strength of the data. For the research instrument to be seen as reliable, construct Cronbach alphas should be above the accepted norm of 0.6 (Chen & Chai, 2010). Hair *et al.* (2009:353) state that a co-efficient alpha of less than 0.6 indicates a low to marginal (unsatisfactory) internal consistency. Therefore, looking at the table below, there is marginally unsatisfactory internal consistency with the Awareness of green issues construct which may be due to the variety of different environmental issues and campaigns included in this section of the questionnaire.

Table 3.1 Cronbach Alpha scores for research instrument

Items scale	Cronbach alpha	N
Ecologically conscious consumer behavior (ECCB)	0.879	25
Perceived Consumer Effectiveness (PCE)	0.672	2
Environmental Concern (EC)	0.764	8
Awareness of Environmental Issues (AEI)	0.594	5

In interpreting the table above in relation to the Cronbach Alphas, most constructs achieved strong internal consistency reliability with the exception of the awareness of green issues construct.

Validity is the degree to which a research instrument is seen to be achieving objectives set out by the researcher for the study (McDaniel & Roger, 2010:316).

McDaniel and Roger (2010:253) state that there are various types of validity:

3.9.1. Face validity

Face validity "is the systematic assessment of how well a construct's measurable components represent the construct" (Hair *et al*., 2009:337; McDaniel & Roger, 2010:253). Face validity is the weakest form of validity (McDaniel & Roger, 2010:253). An example of a question with high face validity is the question asking the age of the respondents. The research instrument has face validity. This is usually known as the research instrument having questions related to demographics.

3.9.2. Content validity

Content validity is sometimes complex in its determination, but McDaniel and Roger (2010:253) state four different ways to approach content validity:

1. Definition of exactly what is to be measured.
2. Use of secondary data and focus groups to identify possible inclusions in test.
3. Use of a panel of experts for advice to check what to include or leave out.
4. Pre-testing of the instrument and use of open questions to identify other items to be included.

The research instrument for this particular study utilised most of these approaches. Literature was used to develop a good understanding and clear definitions of the underlying constructs, as well as possible measures. The questionnaire was also constructed using mostly questions from previous studies on green consumer behaviour. In addition, the research instrument was pre-tested in order to identify if respondents were able to understand the content.

3.9.3. Construct validity

Construct Validity "is the degree to which a measurement instrument represents and logically connects, via the underlying theory and the observed phenomenon to the construct" (Hair *et al*., 2009; McDaniel & Roger, 2010:320). Construct validity deals with what the researcher is trying to really measure and it uses theory in order to formulate a construct to be measured (McDaniel & Roger, 2010:256). In the analysis section, the researcher used present theory to formulate four major constructs: environmental awareness, environmental concern (EC), ecologically conscious consumer behaviour (ECCB) and Perceived Consumer Effectiveness (PCE).

The validity and reliability of the measures provide support for the quality of the data.

3.10. Ethical Issues

Ethical clearance was obtained from the University of KwaZulu-Natal Research Office before the commencement of the study (Refer to Appendix 4). While conducting this study, all respondents were assured of their anonymity and confidentiality. Respondents were informed of the purpose and aims of the study and that they could withdraw at any stage. Respondents completed an Informed consent form (Refer to Appendix 2) in order to give consent to their participation in the study.

3.11. Conclusion

This chapter outlines the methodology used to achieve the research purpose and objectives. The study used a self-administered questionnaire, administered to 330 respondents in Pietermaritzburg. The questionnaire collected data which was used to achieve the research objectives, that is, identifying the levels of knowledge of green issues, concern for the environment, and behaviours that are pro-environmental. The extent of the green gap was established and reasons for a lack of ECCB investigated. Finally the impact of demographic factors was investigated.

The findings are displayed in various forms in the following chapter starting with a profile of the sample and then the findings related to awareness, concern and behaviour as well as the investigation of the green gap and its causes.

Chapter 4: Findings and Analysis

Quantitative data was collected using a structured questionnaire. This chapter presents the findings of the study. The findings are descriptive in nature and are displayed in this chapter in the form of frequency tables.

The chapter covers eight sections: the demographic profile of the sample, Awareness of Environmental Issues, Environmental Concern, Ecologically Conscious Consumer Behaviour (ECCB), Reasons for lack of ECCB, the relationship between ECCB and other green consumer constructs, and the Green Gap. Lastly, the study closely examines the significance of demographic factors on ECCB and other constructs.

The section on environmental concern scrutinises the different environmental concerns that people around the world relate to. The questions have been used in previous studies and were created by Dunlap *et al*. (2000:425). The ECCB section covers 25 questions which are related to the adoption of behaviours which are understood to be sustainable for the environment. There are several reasons that consumers give for not adopting green lifestyles and a table related to the reasons for lack of ECCB is displayed. The relationship of main constructs with ECCB is covered after the reasons for the lack of ECCB.

The 'green gap' is calculated and the impact of demographic variables on the various constructs in this study is investigated. The sections mentioned above are related to the research objectives of this study.

4.1 Profile of the Sample

The sample profile describes the respondents in the sample in terms of gender, race, level of education, income, the respondents' residence within Pietermaritzburg and the different age groups represented. There were 378 questionnaires distributed, but only 317 were usable for the study giving an effective response rate of 84%.

The demographic profile of this study covered the following variables: Gender, Level of education, Place of residence, Race, Age and Household income.

Table 4.1. Summary of the Demographic Profile of the study

Summary of Demographics Profile of the study							
Demographics	Frequency (Percentage)						Missing
Gender	Male	Female					
	160(50.5)	144(45.4)					13 (4.1)
Education	Below matric	Matric	Diploma/ degree	postgrad			
	5 (1.6)	122(38.5)	144(36)	60(18.9)			16(5)
Place of residence	Rural	Township	CBD	Suburban			
	41(12.9)	61(19.2)	41(12.9)	182(47.9)			22 (6.9)
Race	African	White	Indian	Coloured	others		
	233 (73.5)	16 (5)	37 (11.7)	13(4.1)	2(0.6)		16(5)
Age	18-20	21-30	31-40	41-50	50 &above		
	109 (34.4)	160 (50.5)	12 (3.8)	12 (3.8)	6 (1.9)		18(5.7)
Household income	Under 40k	40001-80k	80001-160k	160001-320k	320001-640k	1.2million & above	
	99(31.2)	39(12.3)	46(14.5)	21(8.5)	46(14.5)	8 (2.5)	52 (16.5)

4.1.1. Gender

The sample had a fairly equal mix of genders with 160 (52.6%) males and 144 (47.4%) females. According to the latest census conducted in South Africa in 2011, Statistics SA reports that the Msunduzi Municipality's population consisted of 52.3% of females and 47.7% males (Statistics South Africa, 2011:55). Thus the sample is not quite a true reflection of the population of Pietermaritzburg. There were a number of respondents (4.1%) who chose not to reveal their gender.

4.1.2. Level of Education

The majority (98.4%) of the respondents in this study had a matric qualification or higher indicating a relatively well-educated sample. High levels of literacy could thus be assumed.

Forty seven percent of the people who stay in the Pietermaritzburg region have a matric qualification as their highest qualification (Statistics South Africa, 2011:129). Therefore, the sample seems be skewed to the educated portion of the population of Pietermaritzburg since

only 1.6% of the Pietermaritzburg sample used in this study do not have a matric qualification while Statistics South Africa claims that over half of the people of Pietermaritzburg do not have a matric. It needs to be mentioned that although Statistics South Africa does not clearly indicate that those who possess a matric are above the age of 18, it is common knowledge that most matriculants are above the age of 18 in South Africa.

4.1.3. Place of residence

The largest group of respondents (47.9%) indicated that their place of residence was in a suburban area. The rest of the respondents were distributed between all the other categories: rural, township and CBD, with the following percentages respectively 12.9%, 19.2% and 12.9%.

4.1.4 Race

Most of the respondents were African (73.5%) with Indians constituting the second largest group at 11.7%. The Msunduzi municipality statistics showed a similar distribution of the population for the different racial groups with 81.1% African, 9.79% Indian, 5.9% White, 2.87% Coloured and 0.02% Other (Statistics South Africa, 2011:55).

4.1.5. Age

The majority (50.5%) of the respondents were from the age group 21-30. On this demographic factor, the sample is representative of the population, as Statistics South Africa indicates that the largest group of Msunduzi Municipality's population are between the ages of 20-30, with a percentage of 22% (Statistics South Africa, 2011:55).

As illustrated above, the age distribution of this sample is skewed towards the youth. This is understandable since most people who are working towards obtaining a driver's license are likely to be the youth of the Municipality and the numbers of people renewing their licences are controlled to limit the numbers. It is also understandable, as the Census Summary for 2011 indicates, that the age category 20-30 years is the largest single category in South Africa, accounting for 10.1% of the total population (Statistics South Africa, 2011:2).

4.1.6. Household Annual Incomes

The highest percentage of respondents (31.2%) stated that their household incomes were less than R40 000 per year with the next largest categories being 14.5% in both the R80000 – R160000 p.a and R320001 – R640000 per annum categories. It should be noted that 16.4% of the sample did not answer this question.

The average household income for the Pietermaritzburg region was R92986 in 2011 (the latest census data available) (Statistics South Africa, 2011:42). The mode for household income for this study is under R40 000 with 99 (31.2%) of respondents claiming to fall in this household income category. However, 40% of respondents reported incomes above R80000 per annum. A fairly large portion (16.5%) of the sample did not answer this question.

Consumers differ when it comes to the level of knowledge/awareness, attitude and behaviour with regards to eco-friendliness (Jain & Kaur, 2006:110). Research shows that 30-40% of environmental issues are caused by the consumption patterns of human beings (Chan, 2001:391). In order for someone to have environmental concern they have to be aware. People will not take eco-friendly action towards the environment unless there are aware of environmental issues (Bohdanowicz, 2006:663). Therefore, having an understanding of environmental issues is imperative to seeing the consumption patterns that are desire for a sustainable environment.

4.2 Level of Awareness on Environmental issues

The following section looks at the level of awareness that consumers in Pietermaritzburg have of environmental issues and different eco-friendly initiatives that are taking place around them. The environmental awareness sections cover 6 statements divided into two main categories: environmental campaigns and environmental issues. The Likert scale used to measure awareness of environmental issues is 1=not at all aware, 2= a little aware, 3= moderately aware, 4= aware and 5=very aware but the frequency table includes the combined score for no or a little awareness (i.e. combining the scores for Not at all aware and a little aware) (N/LA); the frequency for moderate awareness (M) and the combined score for aware (i.e. aware and very aware) (A). The mean and standard deviations for each statement are also presented.

Table 4.2. The awareness of environmental issues.

Awareness of environmental issues	**Frequency (percentage)**					
Statement	N/LA	M	A	Missing	Mean	Std dev.
52. I know about the Ozone layer depletion	36 (11.4)	72 (22.7)	189 (59.6)	20 (6.3)	3.97	1.38
53. Overpopulation is a serious issue to the environment	33 (10.4)	57 (18)	207 (65.3)	20 (6.3)	4.24	2.70
54. Deforestation is not good for air quality	40 (12.7)	50 (15.8)	206 (65)	21 (6.6)	4.07	1.35
56. The earth is getting hotter and causing the dramatic changes in weather.	22 (7)	26 (8.2)	244 (76.9)	25 (7.9)	4.45	1.06

N/LA stands for Not at all aware and Little Aware, M stands for Moderately aware & A stands for Aware and Very aware

When respondents were asked how aware they were of the *Ozone layer depletion*, there was a clear majority (59.6%) of respondents who indicated that they were either 'aware' or 'very aware'and 82.3% who were at least moderately aware of this environmental issue. Only 11.4% indicated that there were 'not aware' or a 'little aware' of the depletion of the Ozone Layer.

Similarly, 83.3% of respondents were at least moderately aware that overpopulation is a serious environmental problem. Despite a higher mean score of 4.24, the higher standard deviation indicates less agreement amongst the respondents on this issue. With the increase in the population comes the need to find space to build and farm which leads to deforestation. Deforestation then affects the air quality in the atmosphere (House & Victor, 2006:381). Concerning their awareness of deforestation and its effect on air quality, a slightly higher percentage of respondents (12.7%) indicated that they were 'not at all aware' that *deforestation is not good for air quality* but still 80.8% of respondents were at least moderately aware of this issue.

In a study conducted in Europe during 2007, 57% of the respondents of the survey indicated that they were aware that climate change is a serious issue (European Commission, 2008:8). The majority (76.9%) of respondents indicated that they were aware of climate change as an environmental concern with 85.1% indicating at least moderate awareness. A study conducted in

China, which is a developing country like South Africa, showed that 93% of people of China know something about climate change (Communication, 2012:1).

The high levels of awareness of climate change as an environmental issue could be attributed to the fact that climate change has been extensively discussed in government and public circles. . The annual climate change conference held in Durban in 2011, called COP17, could still have been fresh in the minds of respondents as it was a major national and regional event. COP stands for Conference of the Parties and is a United Nations initiative where environmental policies are adopted and also resolutions to these policies made (COP17, 2011:1).

Table 4.3 Composite Score for the Environmental Issues construct

		Frequency	Percent	Mean	Std.D
Valid	1.00	25	7.9		
	2.00	51	16.1		
	3.00	215	67.8		
	Total	291	91.8	4.156	1.23
Missing	System	26	8.2		
Total		317	100.0		

Note: 1.00 stands for respondents who had composite scores between 1-2.5 in their overall EI, 2.00, are respondents who were between 2.51 -3.5 and 3 represented respondents who fell between 3.51-5

Composite scores are a sum of different item scores divided by the number of items that were used (Ley, 2007:107). In this study, multiple items where used to measure constructs. Composite scores were calculated for each construct. This study has a multiple number of variables, hence the appropriateness of calculating composite scores.

In the composite score tables, 1 stands for composites scores between 1 and 2.50, 2 stands for composite scores between 2.51 and 3.5 and 3 stands for all the composite scores between 3.51 and 5. These categories were created to be able to illustrate the frequencies and give an indication of the spread of composite scores across the sample. Since the study's Likert scale ranges from 1-5, the mean and standard deviation related to the composite score range from 1 to 5.

The mean for awareness of environmental issues is 4.156 on a 5 point scale. The high mean for the awareness of environmental issues demonstrates that respondents of this study appear to be knowledgeable about the environment and concerns about it.

There is a possibility that respondents feared being viewed as unknowledgeable. This is because the environmental issues percentages seem rather inflated. The respondents may have given answers which they believed to be socially desirable. Alternatively, a halo effect could have occurred with respondents not reading the statements that followed the first one, thus resulting in provision of the same answers for all the environmental issues. Nevertheless, the results seem to indicate fairly high levels of awareness.

The following section looks at environmental campaigns because it may be that respondents are aware of environmental issues but are not aware of the campaigns aimed at reducing the impact of these environmental issues.

Table 4.4 The awareness of environmental campaigns

Awareness of environmental campaigns	**Frequency (percentage)**					
Statement	N/LA	M	A	Missing	Mean	Std dev.
51. I know about the 49M campaign.	133 (41.9)	61 (19.2)	101 (31.9)	22 (6.9)	2.78	1.63
55. I am aware of the SAVE the RHINOs campaign.	26 (8.2)	44 (13.9)	224 (70.6)	23 (7.3)	4.25	1.20

N/LA stands for Not at all aware and a Little Aware, M stands for Moderately aware & A stands for Aware and Very aware

According to Eskom, its energy saving campaign, 49M, has done well in terms of gaining awareness amongst South Aficans (Makuse, 2013b:1). Eskom, in a Q&A session, stated that the 49M initiative is geared to reducing demand while also ensuring the adequate support and funding of energy effiency (Eskom, 2011:2). There has been a 73% rise in energy saving and 83% of the people who joined the 49M stated that they changed their behaviour after joining the 49M campaign (Makuse, 2013a:1). However, results of this study show that 41.9% of the respondents have limited or no awareness of this campaign and only 51.1% of respondents were at least moderately aware of the campaign. This could mean that respondents of this study had either forgotten or had not seen the 49M campaign.

The majority (84.5%) of the respondents indicated that they were at least moderately aware of the *Save the Rhinos* campaign while only 8.2% of respondents indicated that they were 'not at all aware' of the campaign. This campaign and the plight of the rhinos has received considerable media coverage and it is possible that the high levels of education of the sample may also account for these high levels of awareness. The high levels of awareness should be investigated further as the success of this campaign could assist in giving other campaigns strategies to create awareness.

Table 4.5 Composite Scores for the Awareness of Environmental Campaigns construct

		Frequency	Percent	Mean	Standard Deviation
Valid	1.00	52	16.4		
	2.00	115	36.3		
	3.00	125	39.4		
	Total	292	92.1	3.50	1.027
Missing	System	25	7.9		
Total		317	100.0		

Note: 1.00 stands for respondents who had scores between 1-2.5 in their overall AEC; 2.00 are respondents who were between 2.51-3.5; and 3 represents respondents who fell between 3.51-5.

In Table 4.5, the results show that respondents of the study are aware of the environmental campaigns that are conducted by organisations in South Africa, although much more so for the *Save the Rhinos* campaign than the *49M* campaign. Overall, most of the respondents fell into categories 2 and 3, achieving 36.3% and 39.4% respectively. The mean for the construct is just above 3.5 confirming that respondents are moderately aware of environmental campaigns.

Table 4.6 Composite Scores for the overall awareness of environmental issues construct

		Frequency	Percent	Mean	Standard Deviation
Valid	1.00	13	4.1		
	2.00	62	19.6		
	3.00	211	66.6		
	Total	286	90.2		
Missing	System	31	9.8	3.95	0.74
Total		317	100.0		

Note: 1.00 stands for respondents who had scores between 1-2.5 in their overall AEI; 2.00 are respondents who were between 2.51 -3.5; and 3 represents respondents who fell between 3.51-5.

Two thirds of respondents indicated being aware of environmental issues, which is an encouraging majority of respondents indeed.

Awareness of environmental issues and campaigns is not enough to drive consumers to act in an ecologically conscious way. Concern for the environment is also necessary for acting in an eco-friendly manner (Choi & Kim, 2005:594).

4.3 Environmental Concern

Environmental concern has been found to be a significant predictor of eco-friendly behaviour, meaning that if an individual has concern for the environment, there is a greater possibility that he/she will act in accordance with protecting the environment (Han *et al.*, 2009:578; Laroche *et al.*, 2001:508; Lee, Hsu, Han, & Kim, 2010). The importance of environmental concern as a construct is also that it is used to calculate the 'green gap' where the green gap is equal to Ecological Conscious Consumer Behaviour less Environmental Concern (Blake, 1999:257; Kennedy *et al*., 2009:151; Nielsen, 2011:1).

A scale has been created and widely used in past studies to measure the environmental concern of consumers (Dunlap *et al*., 2000:425; Straughan & Roberts, 1999:558). In this study, the researcher used the NEP scale questions taken from Straughan and Roberts (1999:558) but created by Dunlap and Co (Dunlap *et al*., 2000:425).

The scale asks respondents to indicate their level of agreement with various statements using a scale of 1=Strongly agree, 2=Agree, 3=Neutral, 4=Disagree and 5=Strongly disagree. From this scale the researcher created 3 categories for discussion purposes by combining disagrees

('Strongly disagree' and 'disagree') and agrees ('Strongly agree' and 'agree') to form a Disagreed to Some Extent & Agreed to Some Extent (ATSE) respectively. The table below also has a Neutral (N) category which is the taken as is from the questionnaire. The other columns are the missing columns for the respondents who did not answer a particular statement and the mean and standard deviations columns.

Table 4.7 New Ecological Paradigm (NEP) for the Pietermaritzburg residents

Environmental Concern	**Frequency (percentage)**					
Statement	ATSE	N	DTSE	Missing	Mean	Std.dev
31. Plants and animals exist primarily to be used by humans.	93 (29.4)	65 (20.5)	150 (47.3)	9 (2.8)	3.31	1.33
32. We are approaching the limit of the number of people the earth can support.	179 (56.5)	88 (27.8)	43 (13.6)	7 (2.2)	2.37	1.10
33. A Healthy economy needs a controlled industrial growth	240 (75.7)	58 (18.3)	16 (5.1)	3 (0.9)	1.99	0.90
34. The earth is like a spaceship with only limited room and resources.	211 (66.6)	56 (17.7)	48 (12)	12 (3.8)	2.17	1.07
35. Humans need not adapt to the natural environment because they can remake it to suit their needs.	128 (39.2)	67(21.1)	122 (38.5)	4 (1.3)	3.03	1.32
36. There are limits to growth beyond which our industrialized society cannot expand.	161 (50.7)	106 (33.4)	44 (13.8)	6 (1.9)	2.52	0.96
37. The balance of nature is very delicate and easily upset.	231 (72.9)	53 (16.7)	15 (7.9)	8 (2.5)	2.04	0.96
38.When humans interfere with nature, it often produces disastrous consequences.	233 (73.5)	53 (16.7)	28 (8.8)	19 (6)	1.97	1.02
39. Humans must live in harmony with nature in order to survive.	257 (81.1)	35 (11)	19 (6)	6 (1.9)	1.76	0.96
40. Mankind is severely abusing the environment	235 (74.1)	46 (14.5)	25 (7.8)	11 (3.5)	1.88	1.03
41. Humans have the right to modify the natural environment to suit their needs.	113 (35.6)	77 (24.3)	122 (38.5)	5 (1.6)	3.04	1.31
42. Mankind was created to rule over the rest of nature.	129 (40.7)	59 (18.6)	120 (37.8)	9 (2.8)	2.94	1.40

The New Ecological Paradigm (NEP) scale consists of 12 items which are shown in Table 4.7. The findings show that the respondents of this study do not see nature's primary function as for human use, as the greatest percentage (47.3%) of respondents disagreed to some extent with the statement that *plants and animals exist primarily to be used by humans*. The fact that 30.2% agreed with the statement is problematic for the environment as it assumes human beings are superior and that they can do anything to nature because it is theirs to use. With 3 as the midpoint on a 5 point Likert scale, the mean for this statement (3.31) is skewed towards disagreeing to some extent with the statement.

The population of the earth is increasing rapidly and is predicted to become close to 10 billion by 2050 (Lehman & Geller, 2005:14). The increase in population is putting pressure on the spaces which are habitable thus resulting in the possibility of reaching a limit to the number of people it can accommodate. When asked to express their views on the statement that *the Earth is approaching a limit to the number of people it can support,* the results were in agreement with the statement. The majority (56.5%) of the respondents agreed to some extent with the statement, indicating that respondents have an awareness of the limited space of the earth. This study had a similar percentage in comparison with the US based study conducted by Dunlap *et al.* (2000:425), since their study found 52.9% of respondents agreed to some degree with the statement.

Looking at a similar statement: *earth is like a spaceship with limited resources and space*, there is a higher percentage (66.6%) of respondents who expressed concurrence to some extent with the statement. This is an interesting result since this statement deals with a similar concept which is the limited resources that are provided by the earth. The latter statement had an almost two thirds majority while the former had closer to half the respondents agreeing with it. This could provide a limitation which is not substantial and this limitation could be found in the wording of the first statement. It is all because this part of our research instrument was taken from an American study, probably having a difference in language.

In Table 4.7 the majority (75.7%) of the respondents indicated that they agreed to some extent with the statement: *a healthy economy needs controlled industrial growth.* There was a small

percentage (5.1%) of respondents who disagreed with the statement. This statement achieved one of the lowest means on the NEP scale with a mean of 1.99. The mean is skewed towards agreement to some extent, meaning most respondents feel there is a need for controlled industrial growth.

Results for the statement *humans don't need to adapt to the changes in the environment,* indicate a neutral mean (3.03) and a relatively high standard deviation, thus suggesting that the group had mixed feelings about this statement.

A marginal majority (50.7%) of the respondents stated that they agreed to some extent with the statement that *there are limits to the growth beyond which the industrial society can't expand*. Upon studying the mean for the statement (2,52), it indicates that on average, the sample is indifferent on this issue. This is supported by the percentage of respondents (34.1%) who were neutral on this issue. Therefore,it can be stated that respondents agree with the statement that there are limits to the earth's resources (statement 32) but they are neutral when it comes to the earth having reached those limits. The neutrality is a true reflection of estimations that scientist have made in relation to the earth's limits, as scientists are not sure of the earth's capacity (Service, 2012:2). When compared to the study conducted by Dunlap *et al*. (2000:425), their American participants showed more agreement with the statement as 74.3% were of this opinion. Perhaps this could be as a result of the differences in knowledge between developing country respondents as compared to those in a developed country.

The majority (72.9%) of respondents indicated that *the balance of nature is very delicate and can easily be unsettled*. This finding shows that respondents have knowledge of the delicacy of the environment and this high percentage should be utilised to the stakeholders' advantage.
Most (81.1%) of the respondents stated that they agreed to some extent with the statement *when humans interfere with nature results are disastrous*. A study conducted in America for the same statement, had a similar percentage (82.2%) for the extent of agreement. Most (81.1%) respondents of this study agreed to some extent that *humans must live in harmony with nature for survival*, thus they see human beings as being dependent on nature. But there was majority (74.1%) agreement amongst the respondents that *mankind is severely abusing the environment*,

depicting that the residents of Pietermaritzburg believe that mankind is a major contributor to the deteriorating environment. This also reflects that the respondents are environmentally conscious. If researcher compares this with the study conducted in America for the same statement, 86.6% of the participants of the American study agreed to some extent with this statement (Dunlap *et al*., 2000:433). The difference could be related to the fact that respondents of the latter study are from a developed country and are probably more aware of the abuse than respondents of this study.

The results for the statement, *humans have the right to modify the environment,* showed no clear difference between those who agreed and those that disagreed with the statement. A large portion of the sample (38.4%) indicated that they were in disagreement with the statement while an almost equal portion of the sample (35.6%) stated that they were in agreement. This finding could mean respondents have perceptions that are divided in terms of human beings having a right to modify the environment. This will need to be addressed as pro-environmental consumers will choose to disagree with the statement.

For the statement: *humans were created to rule nature*, again responses were split. While 41.9% of respondents indicated that they agreed to some extent with the statement, 38.9% respondents disagreed to some extent with the statement.

Respondents showed signs of having environmental concern for many statements but there were many statements which had high percentages for neutral which was observed as of concern and will need to be looked into in more depth in future research. Statements which were found to have large percentages of neutrality are: 36. *There are limits to growth beyond which our industrialized society cannot expand,* and 32. *We are approaching the limit of the number of people the earth can support.*

There were statements which were reversed in constructing the Environmental Concern, Ecologically Conscious Consumer Behaviour and Perceived Consumer Effectiveness sections of the questionnaire. This was done to ensure respondents actually read the questions and did not just give the same score for all statements. However, for the calculation of composite scores

these questions needed to be reverse coded. The normal coding is 'Strongly Agree' being 1 and 'strongly disagree' being 5 but when reversed the opposite coding is required, i.e., 'strongly agree' becomes 5 and 'strongly disagree' becomes 1.

In constructing the environmental concern composite score these statements were reversed: 31, 35, 41 and 42.

Table 4.8 The composite score for the EC construct

		Frequency	Percent	Mean	Standard Deviation
Valid	1.00	92	73.0		
	2.00	32	25.4		
	3.00	2	1.6		
	Total	126	100.0	2.17	.627
Missing	System	191			
Total		317			

Note: 1.00 stands for respondents who had scores between 1-2.5 in their overall EC; 2.00 are respondents who were between 2.51 -3.5; and 3 represents respondents who fell between 3.51-5.

From Table 4.8, the mean (2.17) on a 5 point scale, shows that respondents were highly concerned about the environment: 73% of the respondents had composite scores between 1 and 2.5. In a study conducted in two different countries, namely Brazil and Norway, results showed a mean of 3.70 with a Likert scale opposite to this study which stated that 1 stands for 'strongly disagree' and 5 means 'strongly agree' (Vikan *et al*., 2007:223). Thus a mean of 3.7 also indicates a fairly high level of concern. In another study, using a Likert scale which had 1 to 7, where 1 was 'strongly disagree' and 7 was 'strongly agree', the mean for the NEP was 4.99, also indicating a fairly high level of concern (Cordano *et al*., 2010:25).

The fight against the depletion of the environment needs both awareness of environmental issues and environmental concern. These constructs are necessary for the consumer to adopt a green lifestyle (Awan & Abdus, 2013:505). Thus with a composite mean of 3.5 for awareness and 2.17 for concern, the question then is: can green consumer behaviour be expected with only moderate awareness of environmental issues and slightly stronger environmental concern? The following section looks at the behaviours of respondents in relation to the environment.

4.4 Ecological Conscious Consumer Behaviour

Eco-friendly consumers tend to purchase products and services which they understand to have little or no harm on the natural environment (Roberts, 1996:222). This section focuses on the green behaviours of respondents. Although the statements in this section were jumbled in the questionnaire to prevent the halo effect bias, the section is further subdivided through grouping questions which relate to the same or similar topic. The subheadings are: reduce, reuse, recycling, non-purchase of products that are harmful to the environment, purchasing of green products, packaging's impact on purchases, and price as contributor to purchasing or non-purchasing of green products. The questions are numbered exactly as they appear in the questionnaire and have been grouped around particular green behaviours for analysis purposes.

Table 4.9 Reduction behaviours for the environment's sustainability

REDUCE	**Frequency (percentage)**					
Statement	ATSE	N	DTSE	Missing	Mean	Std dev.
1. To save energy, I drive my car as little as possible.	143 (45.1)	102 (32.2)	63(19.9)	9(2.8)	2.59	1.16
2. I normally make a conscious effort to limit my use of products that are made of, or use scarce resources.	159 (51.6)	92 (29)	57 (18)	9 (2.8)	2.56	1.03
4. I always try to use electric appliances (e.g. dishwasher, washer and dryer) before 10 a.m. and after 10 p.m.	101 (31.9)	82 (25.9)	130 (41.5)	4 (1.3)	3.08	1.20
6. I have tried very hard to reduce the amount of electricity I use	234 (74.8)	47 (14.8)	32 (10.1)	4 (1.3)	2.05	1.01
30. I have signed a 49M Pledge for reducing electricity usage	79 (24.9)	83 (26.2)	151 (47.7)	4 (1.3)	3.32	1.20

The findings included in Table 4.9 show the following key findings that are in relation to reducing as an action related to environmental sustainability.

The reduction of fuel consumption is critical for decreasing CO_2 emissions into the atmosphere before the goal of a more sustainable environment can be realised (Harvey, Thorpe, & Fairchild, 2013:507). In a study in Belgium and another in the USA 82.5% and 81.9% of the respondents respectively indicated that they would drive less when the price of fuel increased (Skipper, Liesbeth, *et al*., 2009:974; Skipper, Van de Velde, *et al*., 2009). The high percentages show that consumers around the world are willing to drive less to save fuel.

In this study, just less than half (45.1%) of the respondents indicated that they limit their driving in order to save fuel, which ultimately saves the environment. The extent of this behaviour amongst the South African respondents is considerably lower than in the USA and Belgium. It should be noted that a large percentage (32.2%) of respondents were neutral on this issue. This may be explained by an observation during the distribution of the questionnaires at the Mkodeni Driving License Centre that many people used public transport to get to the centre and thus may not have had a car in the first place.

The structure of the question *to save fuel, I use my car less* led to another important comment which was made verbally by a respondent when completing the questionnaire that he "walks because it is costly to purchase fuel for my car", making the cost of fuel the motive. It would be interesting to investigate further whether respondents are using cars less due to the fact that fuel is more expensive rather than because of the impact on the environment. However, from an environmental sustainability perspective, it does not matter what the motive is as long as the behaviour occurs. Although there is a lower percentage of respondents in this study who drive less to save fuel than the study conducted by Skipper *et al*, (2009:974).

A slightly higher percentage (51.6%) of the respondents agreed with the statement that they *limit their use of products which are made of scarce resource.* This seems to indicate that they are conscious of products which are made from scarce resources such as trees, iron ore, coal and other scarce products (Krautkraemer, 2005:23). This consciousness leads to their making limited use of these products. There is a need to consider that almost 1 in 2 respondents are either indifferent to or not adopting this behaviour as a lifestyle and, thus, there is still need for improvement here.

The consumption of electricity changes depending on various factors such as seasons, days in the weeks and hours in the day (Sou *et al.*, 2011:5144). Using electric appliances at a certain time or period is done in order to save energy and ultimately sustain the environment (Eskom, 2014:2). In a study done in the Philippines in 2010 by See, Liwayway, Melinda, Joseph, and See (2010:368), 100% of their respondents indicated that they participated in scheduling their electricity usage of electrical appliances. This is in contrast to the findings of this study which indicate that less than a third of the respondents practise scheduling of appliance usage. In this study, only 31.9% indicated that they practise such behaviour of using electrical appliance between 10pm and 10am. This indicates that two thirds of the respondents have not practised this eco-friendly behaviour or have been indifferent. Therefore, there is a serious need for interventions which assist in showing respondents the importance of practising electrical appliance scheduling.

In a study conducted in South Africa by the Department of Energy, it showed that 41% of respondents used an electricity reduction strategy in order to cope with the increase in prices of electricity (HSRC, 2012:64). In the same study, KwaZulu-Natal achieved the highest percentage (64%) of respondents who had looked into reducing electricity usage. Although the reason for electricity usage reduction was not primarily the environment, it does assist in the sustainability of the environment. In contrast with the above results this study found a large majority (74.8%) of respondents who agreed to some extent with the statement *I have tried to reduce my electricity usage with* the mean also being very low at 2.05. The percentage shows that people are willing to act in the interest of the environment by trying to save electricity.

Table 4.10 Statements related to the reusing of products

Reuse	**Frequency (percentage)**					
Statement	ATSE	N	DTSE	Missing	Mean	Std dev.
14. Whenever possible, I buy products packaged in reusable containers.	163 (41.4)	83 (26.2)	60 (18.9)	11 (3.5)	2.53	1.09
21. I supply my own carrier bags at the supermarkets	147 (46.4)	47 (14.8)	114 (35.9)	9 (2.8)	2.82	1.39

When assessing the respondents' purchasing behaviour in terms of the reusability of the containers of the products which they purchase, 41.4% of respondents of this study indicated that they *purchase products packaged in reusable containers*.

In research conducted by the House of Commons in the UK, 51% of the people in Wales and 22% in Scotland reused carriers bags (HCEAC, 2013:16). Similarly, the results of the current study show that 46.4% of respondents *supply their own carriers bags at the supermarkets.* Reuseable packaging assists in reducing the amount of scarce resources which are used in producing these packages and reduces the disposal of waste packaging that fills up landfill sites. Respondents of the study did not seem to participate to a great extent in activties of reuse of products for environmental purposes. Although almost half the respondents supply their own carrier bags, over a thrid of respondents do not. The large number of neutral responses to Statement 14 may indicate that many respondents were not sure what a reusable container is.

Table 4.11 Statements related to the recycling of recycleable materials

Recycling	**Frequency (percentage)**					
Statement	ATSE	N	DTSE	Missing	Mean	Std dev.
9. I use a recycling centre or in some way recycle some of my household trash.	127 (40)	77 (24.3)	121 (35)	2 (0.7)	2.94	1.24
16. I buy products made from recycled paper	113 (35.7)	106 (33.4)	95 (30)	3 (0.9)	2.91	1.07
17. I make an effort to recycle glass	105 (33.1)	75 (23.7)	132 (41.6)	5 (1.6)	3.10	1.18
18. I make use of different recycle bins for my waste	119 (37.5)	67 (21.1)	127 (40)	4 (1.3)	3.00	1.23
23. I try only to buy products that can be recycled	100 (37.7)	97 (30.6)	102 (32.1)	8 (2.5)	2.99	1.04

"Despite increased awareness around the importance of recycling, large amounts of recoverable paper and board packaging are still unnecessarily dumped in landfill sites" (Prasa, 2012:1). The recycling of glass in particular can assist in the sustainability of the environment by reducing air and water pollution by as much as 20% and 50% respectively (WWF.Panda, 2014b:1). Another study conducted in South Africa by the Council of Scientific and Industrial Research (CSIR)

showed that 27% of respondents who participated have been involved in some recycling behaviour (Oelofse, 2012). The current study exhibited similar percentages of 40% (use of recycling centre), 35.7% (recycle paper products), 33.1% (recycle glass), 37.5% (used different recycle bins) and 37.7 (bought recyclable products) with the CSIR research in terms of recycling behaviour. In the United Kingdom, the estimated percentage of recycling behaviour being conducted by households in the last three years has been just above 40%, the target being 50% by the year 2020 (DEFRA, 2014). In a study done in Zaragoza, Spain, conducted by Fraj and Martinez (2007:30), results showed that 43% of their respondents agreed to making an effort to purchase products in recyclable containers, 33.1% made an effort to recycle glass and 40.3% agreed with the statement *I use different recycling mechanism for my households trash.*

Only about a third of the respondents in the current study exhibited the various recycling behaviours, e.g., 35.7% *buy products made from recycled paper,* 33.1% *recycle glass,* 37.7% *buy recyclable products,* 40% use *recycling centres* and 37.5*% use different recycling bins at home.* Thus the results indicate a moderate level of recycling behaviour, and it is comparable to the study conducted in Spain mentioned above.

Table 4.12 Non-purchase of products that are harmful to the environment

Non-purchase of products harmful to the environment	**Frequency (percentage)**					
Statement	ATSE	N	DTSE	Missing	Mean	Std dev.
10. I have convinced members of my family or friends not to buy some products which are harmful to the environment.	124 (39.2)	68 (21.5)	123(38.8)	2 (0.6)	2.98	1.19
7. If I understand the potential damage to the environment that some products can cause, I do not purchase these products.	173 (54.6)	87 (27.4)	52 (16.4)	5 (1.6)	2.45	1.06
15. When I have a choice between two equal products, I always purchase the one which is less harmful to the environment.	162 (51.1)	88 (27.8)	66 (20.8)	1 (0.3)	2.54	1.13
19. I will not buy a product if the company that sells it is ecologically irresponsible.	109 (35)	111 (35)	92 (29)	3 (1)	2.88	1.15
25. I do not buy household products that harm the environment.	102 (32.1)	128 (40.4)	84 (26.5)	3 (1)	2.89	1.04

A study done in Europe by the European Commission stated that 80% of their respondents indicated that their relatives and friends would consider it a 'good thing' if they bought eco-friendly products (European Commission, 2013). Although this study used a slightly differently phrased question of convincing relatives and close friends not to purchase products that are damaging to the environment, the results showed that this sample was not as sure of spreading the message of green behaviour to families and friends. Only 39.2% agreed to some extent with the statement while 38.8% disagreed. Furthermore, 21.5% of respondents were neutral on the issue.

A small majority (54.6%) of respondents stated that they would not buy a product they if knew that the product was bad for the environment.

In the market there is always a choice between products (Stucke, 2013:166). Stucke (2013:166) continues to argue that in a competitive market, most choices are characterised by issues such as the price of products, the quality and other characteristics. The findings of the current study for the statement: *if choice is available between two products, I will choose green products* indicate that a small majority (51.1%) of respondents behave in this way. Thus environmental choice criteria appear to be relevant for about half of these respondents. In a study done by the European Commission only 19% of respondents indicated that they do not use environmental impact as a purchase decision criterion (European Commission, 2013:59) thus representing a much higher use of environmental choice criteria in developed nations.

A large percentage (40.8%) of respondents remained neutral for the statement: *I don't buy products that are harmful to the environment*, while only 32.4% of respondents agreed to some extent with this statement. Education and promotion interventions are clearly necessary to increase eco-friendly behaviour amongst these consumers.

There is a need to boycott products which are produced by companies which are not environmentally friendly (Laroche *et al*., 2001:514). The Laroche *et al*. (2001:514) study conducted in Canada found that 80% of respondents indicated that they were not willing to purchase products from companies which are known to be environmentally unfriendly. In contrast, in this study only 35% of respondents stated that they would not purchase products from non-eco-friendly companies. Again, intervention is still needed to improve this percentage.

While respondents in this study showed very limited action in terms of avoiding non-green products, buying of environmentally friendly products is also vital for the sustainability of the environment. Statistics from the European Commission survey show that 89% of their European respondents state that purchasing of green products can make a difference (European Commission, 2013:21).

Table 4.13 Statements related to purchasing green products

Purchasing of green products	**Frequency (percentage)**					
Statement	ATSE	N	DTSE	Missing	Mean	Std dev.
8. I have switched products for ecological reasons	116 (36.6)	101 (31.9)	86 (27.1)	14 (4.4)	2.45	1.06
12. I have purchased products because they cause less pollution	151 (47.6)	91 (28.7)	73 (23.2)	2 (0.6)	2.67	1.06
3. I buy energy efficient household appliances	171 (53.9)	90 (28.4)	44 (13.9)	12 (3.8)	2.49	0.96
11. I have replaced light bulbs in my home with those of smaller wattage so that I will conserve on the electricity I use.	236 (74.4)	37 (11.7)	41 (12.9)	3 (1)	2.05	1.20

The responses to the statement *I have switched products for ecological reasons* were diverse and without any clear majority on either agreement (36.6%) or disagreement (27.1%) with the statement. The results are not quite as unsupportive of green behaviour as Fraj and Martinez (2007:30) found in Spain, where 48% of their respondents were not keen on switching products for sustainability reasons, however, the high neutral score (31.9%) may account for this difference.

More (47.6%) of the respondents stated that they *purchase products that produce less pollution*. There are similarities in the two statements as both statements did not achieve percentages where the majority of respondents state that they have either switched products for ecological reasons or purchased products which are produced with less pollution. Respondents, however, have acted more on purchasing products which produce less pollution than they have switched products for ecological reasons.

In Table 4.13, a small majority (53.9%) of the respondents agreed with the statement that they *buy energy efficient household appliances,* while a large majority (75.2%) of the respondents agreed with the statement that they have *replaced light bulbs with those with a smaller voltage*. Eskom distributed 47 million Compact Fluorescent Lamps in 2012 thus making consumers aware of the impact of using light bulbs with smaller voltage (Boroughs, 2012:1). This finding is

supported by Eskom's statement on the roll-out of energy saving light bulbs: "Thank you to all the South Africans, in small towns and in big, in rural and in urban areas, who participated in the Eskom Compact Fluorescent Bulbs (CFL) roll out programme. Together we have saved more than 1 000 megawatts, and by using CFL's in future you will continue to save" (IDM, 2010:1).
A noteworthy comparison is with the reactions to the statement that asked respondents if they had switched products for ecological reasons. Fifty nine percent of respondents were either indifferent or did not switch products for ecological reasons. Again, it seems that the respondents' switch to eco-friendly light bulbs was not for ecological reasons but for cost reasons.

These last two behavioural patterns exhibit higher levels of participation than any other behaviour and support the Statement 6 finding that 74.8% of respondents agreed to some extent with the statement *I have tried to reduce my electricity usage*. Thus, behaviour related to electricity usage seems to be the only real area of green behaviour exhibited by this South African sample.

Table 4.14 Statements related to packaging's impact on purchases

Packaging	**Frequency (percentage)**					
Statement	ATSE	N	DTSE	Missing	Mean	Std dev.
5. I will not buy products which have excessive packaging	107 (33.7)	118 (37.2)	87 (27.5)	5 (1.6)	2.92	1.06
13. I don't buy products in aerosol containers	68 (21.4)	109 (34.4)	131 (41.2)	9 (2.8)	3.24	1.04

The largest number of respondents (37.8%) gave a neutral response for this statement and only 33.7% of respondents agreed to some extent that they do not buy products with excessive packaging. This finding could be as a result of respondents not understanding what excessive packaging is. This is in contrast to a survey conducted in China, where 97% of respondents complained about the excessive packaging in products (Xinhua, 2012). Maybe a rephrasing of the question in the questionnaire would have assisted. However, it may also indicate that these consumers are not particularly concerned about the friendliness to the environment of the product's packaging. An even smaller percentage (21.4%) of respondents stated that they do not

buy products that are contained in aerosol containers. Respondents did not show signs of behaving in an environmentally friendly manner through their packaging choices.

Table 4.15 Statements related to price as a contributor to purchasing or non-purchasing of green products

Price	**Frequency (percentage)**					
Statement	ATSE	N	DTSE	Missing	Mean	Std dev.
20. I see green products to be expensive	151 (47.6)	78 (24.6)	81 (25.6)	7 (2.2)	2.68	1.18
22. I have purchased light bulbs that were more expensive but saved energy.	179 (56.5)	60 (18.9)	73 (23)	5 (1.7)	2.52	1.19
24. I usually purchase the lowest priced product, regardless of its impact on society.	135 (42.6)	81 (25.6)	100 (31.6)	1 (0.2)	2.79	1.21

In Table 4.15, 47.6% of respondents agreed that green products are expensive and yet, probably, some (57.5%) of those respondents have previously bought expensive light bulbs which save energy. People that buy energy-saving light bulbs are important to the overall purpose of sustaining the environment. In South Africa the ratio of people who use energy-saving lights to those who are aware is 0.63 (HSRC, 2012:68). This means that South African people are aware of energy-saving light bulbs but are not all using them. The possible reason for being aware of energy-saving light bulbs but not purchasing them could be the prices of these light bulbs. However, the findings of the current study indicate that despite believing that green products are expensive, the majority of respondents still purchase the energy-saving light bulbs. This may be due to the impact on the environment or because this also leads to savings in energy costs.

The findings for the statement: *I purchase lowest priced products regardless of the impact to society* were that 42.6% of respondents agreed to some extent with the statement. This is interesting as they seem to indicate that price is a more influential factor in purchasing than the impact on the environment. This apparent contradiction may be that for most purchasers price is important. And green products are less likely to be bought because they are perceived to be expensive. However, looking at energy-saving light bulbs more people make these purchases

because there is the added financial incentive, related to escalating electricity costs, of these products saving money. The additional promotion that has occurred around this behaviour may also have led to this finding.

4.4.1. ECCB Construct

When calculating the ECCB construct, there were two questions which were reversed: Questions 20 and 24 which stated that *I see green products to be expensive* and *I purchase lowest priced products regardless of the impact to society* respectively.

Table 4.16 The frequency and composite Scores for ECCB construct

		Frequency	Percent	Mean	Standard Deviation
Valid	1.00	44	13.9		
	2.00	68	21.5		
	3.00	18	5.7		
	Total	130	41.0	2.81	0.58
Missing	System	187	59.0		
Total		317	100.0		

Note: 1.00 stands for respondents who had scores between 1-2.5 in their overall ECCB; 2.00 are respondents who were between 2.5 -3.5; and 3 represents respondents who fell between 3.51-5.

In Table 4.16, the mean for the ECCB construct is 2.81 meaning that average actions that these Pietermaritzburg respondents take towards the sustainability of the environment is in the category 2, i.e., relatively neutral or indifferent. Thus, the highest percentage of respondents (21.5%) making the group (2) with the most number of respondents, are relatively indifferent to green behaviour. The 'greener' consumers which are found in group (1) made up only 13.9% of the respondents. The 13.9% is comparable to a global scale in 2011 where only 22% had purchased eco-friendly products (Nielsen, 2011:1).

This research provides evidence of consumers in this market not performing eco-friendly activities. Respondents had various reasons for not performing activities which are assisting in sustaining the environment.

The following section looks at some of reasons why respondents do not act in line with sustaining the environment.

4.5 Reasons for the lack of ECCB

This section is divided into two sections: one is the Perceived Consumer Effectiveness as one of the major reasons for lack of ECCB; other reasons for the lack of ECCB follow.

4.5.1 Perceived Consumer Effectiveness

Perceived Consumer Effectiveness (PCE) is defined as the extent to which consumers believe that their individual efforts can make a positive impact on the environment (Chang, 2011: 21; Choi & Kim, 2005:592). The individual's perception of the effectiveness of their efforts in sustaining the environment is an important aspect to be studied because it has been found to also be a significant predictor for ecological consumer behaviour (Choi & Kim, 2005:592; Majláth, 2010:158; Rex & Baumann, 2007:569). Thus consumers may not behave in an environmentally-friendly manner because they do not believe their actions will make a difference (Straughan and Roberts (1999:558).

Table 4.17 Statements related to Perceived Consumer Effectiveness.

Perceived Consumer Effectiveness	**Frequency (percentage)**					
Statement	ATSE	N	DTSE	Missing	Mean	Std dev.
26. Its worthless for an individual consumer to fight against pollution	68 (21.4)	38 (12.1)	211 (66.5)	0	3.71	1.35
27. I consider the impact to the environment & other consumers when buying products	121 (38.2)	112 (35.3)	82 (25.9)	2 (0.6)	2.83	1.19
28. One person cannot cause environmental change; my effort doesn't make a difference	53 (16.7)	52 (16.4)	209 (66)	3 (0.9)	2.79	1.21
29. Each person can make a difference by Purchasing of Products from Eco-friendly Companies	235 (74.1)	56 (17.7)	22 (7)	4 (1.2)	2.09	1.98

The individual's responsibility for the sustainability of the environment is an important factor in the reducing the 'green gap' (Majláth, 2010:158). Majláth (2010:158) continues to argue that up

to 40% of the problems related to environmental degradation are cause by consumption patterns. In Table 4.17, the majority (66.5%) of respondents stated that they disagree at least to some extent that it is *worthless for individual consumers to fight against pollution*. This means respondents think their individual effort will assist in the fight against pollution. Similar results were found in a study conducted in America, which had 64% of respondents feeling they can contribute to fighting against the degradation (Majláth, 2010:158). A concern, however, is the relatively high percentage (21.4%) of the Pietermaritzburg respondents who agreed to some extent with the statement *it is worthless for an individual consumer to fight against pollution*. Changing the mind-set of these consumers is critical for all stakeholders as consumers need to take responsibility for their consumption behaviour which is contributing to environmental harm.

When asked whether respondents *consider the impact to the environment and other consumers when buying products* a large percentage (38.4%) of the respondents indicated that they were in agreement to some extent with the statement. This is important for the sustainability of the environment because it indicates that consumers are not self-centred and think about others in their decisions. However, an almost equal percentage (35.6%) of respondents was neutral on this statement, indicating indifference towards caring for the environment and others. The rest (26%) of the respondents indicated that they were in disagreement with the statement. The researcher sees this group as representing a concern for South African policymakers and environmental protection agencies because the lack of concern and care for the environment is likely to prohibit pro-environmental consumption.

The majority (66.6%) of respondents disagreed with the statement: *one person cannot cause environmental change; my effort doesn't make a difference.* It must be noted that there was over a third (33.4%) of the respondents who were not convinced (either neutral/disagreed) that individuals could make a difference through their actions. There is a need for concern amongst stakeholders who are monitoring the level of Perceived Consumer Effectiveness when a third of the respondents are unconvinced that their individual actions can make a difference.

Statements 26 and 28 of the PCE construct needed to be reversed for this specific composite score.

Table 4.18 The Composite Score for the PCE construct

		Frequency	Percent	Mean	Standard Deviation
Valid	1.00	184	58.0		
	2.00	43	13.6		
	3.00	9	2.8		
	Total	236	74.4	2.17	0.691
Missing	System	81	25.6		
Total		317	100		

Note: 1.00 stands for respondents who had score between 1-2.5 in their overall PCE; 2.00 are respondents who were between 2.51 -3; and 3 represents respondents who fell between 3.51-5.

Table 4.18 indicates that the sample has a relatively high Perceived Consumer Effectiveness. This is seen by the number of respondents in group 1.00 which has 58% of the respondents, as well as the relatively low mean (2.17) meaning respondents believe that their individual actions can make a difference towards the sustaining of the environment. Thus it seems that a lack of perceived effectiveness should not be the reason for the low levels of ECCB. Other reasons are investigated below.

4.5.2 Others Reasons for the Lack of ECCB

There are many reasons which different individuals in society give to explain their behaviour. This sections looks at some of the reasons for the lack of ECCB. As indicated in the previous chapter, the statements were generated from the literature.

Table 4.19 Possible Reasons for the lack of green behaviour

Reasons for the Lack of ECCB	**Frequency (percentage)**					
Statement	ATSE	N	DTSE	Missing	Mean	Std dev.
42. Product quality of green products is inferior	84 (26.5)	98 (30.9)	125 (39.5)	10 (3.1)	3.22	1.21
43. Promotion of eco-friendly products is lacking	197 (62.1)	56 (17.7)	58 (18.3)	6 (1.9)	2.34	1.09
44. I am unable to distinguish between green and conventional products	104 (32.8)	94 (29.7)	109 (34.4)	10 (3.1)	3.03	1.14
45. Green products are not easily available	152 (38)	81 (25.6)	78 (24.8)	6 (1.9)	2.66	1.09
46. I am not aware of any green products	64 (20.2)	60 (18.9)	188 (59.3)	4 (1.3)	3.55	1.14
47. I don't trust green branded products	45 (14.2)	77 (24.3)	191 (60.2)	4 (1.3)	3.65	1.01
48. Green products are clearly labelled	102 (32.1)	88 (27.8)	121 (58.2)	6 (1.9)	3.14	1.11
49. There are no or limited mechanisms available to practice a green lifestyle	130 (41)	99 (31.2)	82 (25.9)	6 (1.9)	2.77	1.11

Many (39.5%%) respondents disagreed, at least to some extent, that green products are inferior in terms of product quality; however, 26.5% of respondents agreed with the statement meaning these respondents were of the opinion that green products are of less quality than traditional products. Taken with the 30.9% of neutral responses, 57.4% of respondents were either unsure or believed that green products are inferior in quality to traditional products. This represents a problem for green product producers which may account for a lack of green consumer behaviour.

Promotion of eco-friendly products is a strong influencer of consumers' purchasing green products (Morel & Kwakye, 2012:10). If consumers are not aware of or informed about eco-friendly products, they cannot be expected to buy them. The majority (63.3%) of respondents in this study indicated that there is a *lack of promotion of eco-friendly products.* The lack of

promotion of green products has an effect on green consumer behaviour as respondents stated it to be one of their biggest reasons for a lack of ECCB.

The ability to differentiate between green products and conventional products is critical to the successful marketing of green products (Huang & Wu, 2010:1539). Only 34.4% of respondents disagreed, at least to some extent, with the statement that they are *unable to distinguish between green and conventional products* and thus felt confident that they could clearly identify a green product amongst conventional or non-green products. Hence, by adding the respondents who are indifferent, this inability to clearly distinguish between the two types of products can account for the lack of green purchasing behaviour. When compared to the study done by the European Commission, 51% of its participants were able to distinguish between eco-friendly products and those that are harmful to the environment, while 47% felt they could not (European Commission,2013:30).

When it came to respondents' opinions on the acessibilty or availability of green products, many (38%) respondents indicated that *green products are not easily available.* This calls for more exposure through having products convenniently situated in places accessible to the consumer, thus decreasing the percentage of respondents who agreed with the statement. This can be compared to the European Commision survey (European Commission, 2013:31) where other countries, such as Sweden, had 80+% of respondents stating that green products are easily available. Combined with the neutral responses to give a percentage of 63.6% of respondents who are either unsure or believe there is a lack of availability of green products, it seems that lack of availability of green products may be a reason for low green consumer behaviour.

The awareness of green products by consumers is essential to the consumers' acting in an eco-friendly manner in their purchasing decisions. The EC (2013:10) survey had 26 573 participants in which they conducted telephonic interviews and yet only 2% of their respondents indicated that they were not aware of green products whilst 95% had interacted with green products in some way. The current study showed fewer, but still a majority (59.3%) of respondents who indicated that they disagreed, at least to some extent, with the statement: *I am not aware of any*

green products, thus lack of awareness does not seem to be a major reason for the lack of green consumer behaviour.

When it comes to scepticism and trust towards green products one of the issues is that people do not trust the labelling of green products (Nayyar, 2013:5). Consumers in Europe do not see products branded as green representing a need for concern in their authenticity (European Commission, 2013:41). Two thirds of the respondents in the European Commission survey stated that they were confident or fairly confident of products labelled as green products (European Commission, 2013:41). Respondents of the current study indicated that they disagree with the statement that said they *don't trust green branded products*. The results showed that the majority (60.2%) of respondents trust branded green products while 14.2% agreed to some extent with the statement and thus do not trust green products. Thus a lack of trust in green products appears not to be a cause of the lack of ECCB.

Consumers are confronted by the inability to find information on the environmental consequences of a product that they are intending to purchase (Brécard, Boubaker, Sterenn, Yves, & Frédéric, 2009:115). In the current study, most (58.2%) of respondents disagreed , at least to some extent, with the statement: *green products are clearly labelled*. This means that the visibilty of green products on the shelves is not perceived to be good. This lack of visibility of green products on the shelf has a negative effect on the purchase of green products.

In order for respondents to adopt an eco-friendly lifestyle they must find ways to implement the appropriate behaviour. Respondents were asked to indicate their level of agreement with the statement *there are no or limited mechanisms available to practice a green lifestyle*. 41% of respondents agreed to some extent with the statement while 25.9% disagreed. The limited mechanisms, e.g., recycling bins can limit the practice of a green lifestyle.

In summary, Perceived Consumer Effectiveness was not seen as a strong reason that respondents would have for not performing actions which are in support of ecologically conscious purchasing behaviour. PCE is known to be a strong indicator of green consumer behaviour (Albayrak *et al*., 2011:189). From these results it would seem that consumers should behave in an eco-friendly manner.

However, the reasons for the lack of green consumer behaviour which were pre-dominantly stated amongst respondents were the lack of promotion of eco-friendly products, the lack of availability of green products, the fact that green products are not clearly labelled and the lack of mechanisms to support a green lifestyle.

The following section looks at the relationships between the constructs of this study using multiple regression and correction analysis.

4.6. Regression and Correlation analysis

In this section of the findings, the study determines the independent variables (EC, PCE and AEI) ability to predict the dependent variable, pro-environmental behavior (ECCB).

Table 4.20 Correlation Analysis of green consumer constructs

		ECCB	AEI	EC	PCE
ECCB	Pearson Correlation	1	-.272**	.228	.312**
	Sig. (2-tailed)		.003	.083	.001
	N	130	121	59	107
AEI	Pearson Correlation	-.272**	1	-.343**	-.245**
	Sig. (2-tailed)	.003		.000	.000
	N	121	286	115	215
EC	Pearson Correlation	.228	-.343**	1	.329**
	Sig. (2-tailed)	.083	.000		.001
	N	59	115	126	103
PCE	Pearson Correlation	.312**	-.245**	.329**	1
	Sig. (2-tailed)	.001	.000	.001	
	N	107	215	103	236

**. Correlation is significant at the 0.01 level (2-tailed).

In Table 4.20, the Pearson correlation shows significant correlations between the ECCB and Environmental Awareness (AEI) and Perceived Consumer Effectiveness (PCE) except for Environmental Concern (EC). These results confirm what is found in another study that ECCB has a significant and positive relationship with Perceived Consumer Effectiveness (Laroche *et al*., 2001:531). It is interesting to find that there is a significant negative correlation between ECCB and Awareness of Environmental issues. This negative relationship says that the more

people are aware of environmental issues the less evidence there is of their having adopted ecologically conscious behaviour. This finding is difficult to explain except perhaps to say that despite generally high awareness of environmental concerns, this awareness does not translate into behaviour and perhaps the reasons for the lack of ECCB discussed above go some way to explain this.

When looking at the relationship that ECCB has with EC, it shows no significant relationship, which is in contrast with other studies which had a different result in terms of the relationship between ECCB and EC (Choi & Kim, 2005:593; Straughan & Roberts, 1999:560).

Table 4.21 Multiple Regression Model

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.614[a]	.377	.335	.45406	.377	8.879	3	44	.000

a. Predictors: (Constant), PCE, AEI, EC

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.791	.663		5.718	.000
	AEI	-.379	.114	-.429	-3.317	.002
	EC	-.088	.124	-.096	-.707	.483
	PCE	.410	.143	.383	2.872	.006

a. Dependent Variable: ECCB

To investigate the effects of environmental concern, environmental awareness and Perceived Consumer Effectiveness on ECCB a regression was used where the measures for environmental concern, environmental awareness and Perceived Consumer Effectiveness were treated as independent variables while ECCB was treated as a dependent variable. Results provide a significant Adjusted R^2 of 37.7% ($F = 8.8$; $p < .01$) thus the independent variables explain 37.7% of the variance in ECCB. From the co-efficient table above, no support was found for the effect of environmental concern on ECCB (std. B = -.088; p=0.483) but support for the impact of

environmental awareness on ECCB (std. B = -.379; p<.01) and also support for the impact of Perceived Consumer Effectiveness on ECCB (std. B =.410; p<.01) was found.

Other studies have found environmental concern as a predictor of green consumer behaviour (Laroche, 2001:513; Lee, 2008:901; Han, 2009:578). However, this study did not find environmental concern as a predictor of ECCB. But the study did find the Perceived Consumer Effectiveness (PCE) as a strong predictor of ECCB.

4.7. Green Gap

Environmental concern has been found to be an indicator of ECCB (Han *et al*., 2009:578). Therefore, it can be said that if respondents are concerned about the environment then that should translate into green consumer behaviour. But studies have found a difference between the participants' environmental concern and their ecologically conscious consumer behaviour. This is known as the green gap (Nielsen, 2011:1).

The gap that exists between concern and behaviour has been called the value-action gap but also the 'green gap' (Honabarger, 2011: 15). The 'green gap' is the difference that is derived when taking the Ecological Conscious Consumer Behaviour (ECCB) construct and subtracting the Environmental Concern (EC) construct. In terms of an equation Green Gap= ECCB-EC (Nielsen, 2011). If the mean of the ECCB construct is greater than the mean for the EC construct, then a positive gap exists (there is no 'green gap'). Therefore, there is more action towards a sustainable environment than there is concern. The green gap occurs when the ECCB mean is less than the EC mean. However, due to the scales used in the study being 1 = strongly agree and 5 = strongly disagree, a smaller mean actually represents a larger score on the construct, thus a negative mean difference represents no gap and a positive mean difference represents a 'green gap'.

Table 4.22 Descriptive statistics of the 'green gap'

	N	Missing	Minimum	Maximum	Mean	Std. Deviation
GreenGap	59	258	-0.62	2.27	0.661	.761
Valid N (listwise)	59					

The mean (0.661) indicates the existence of a 'green gap'. It suggests that the respondents of this study have higher levels of concern than behaviour. This is consistent with a study conducted by Nielsen which showed a gap between the concerns and actions of its respondents (Nielsen,

2011). Nielsen (2011) found that 87% of the participants were concerned but only 33% converted their concern into action when they bought products. In the current study 73% were concerned but only 22% converted their environmental concern into green consumer behaviour. It can be said that respondents exhibited high levels of concern but are still not converting their concern into green consumer behaviour. This agrees with previous studies which found environmental concern to be high and substantially more than green consumer behaviour. Possible reasons for these findings are discussed in the next chapter.

Table 4.23 Frequency and composite Score for Green Gap construct.

		Frequency	Percent	Mean	Standard Deviation
Valid	1.00	44	13.9		
	2.00	11	3.5		
	3.00	4	1.3		
	Total	59	18.6	0.661	0.761
Missing	System	258	81.4		
Total		317	100.0		

Note: 1.00 stands for respondents who had scores between in their overall Green Gap 2.27- 0.5; 2.00 are respondents who were between 0.51 - 0.5; and 3 represents respondents who fell between -0.51- -0.62.

In Table 4.23, the number of missing respondents is a number to be concerned with as above 80% respondents were not included in the calculation of the 'green gap'. There were 44 respondents who were more concerned than they were acting. While only a small number of respondents was behaving in a green manner more were concerned about the environment.

4.8. Influence of Demographics

In this section of the findings, the study seeks to test the influence of demographics on the constructs. A series of one-way between-groups analyses of variance (ANOVA) was conducted. With all 3 constructs and the green gap, Levene's test of homogeneity of variance was greater than 0.5 indicating that the variances were homogenous and, thus, the assumption required for conducting an ANOVA was met (Pallant, 2010:148). Therefore, in this section the study reports on the two constructs that had at least one or more of the demographics variables having

significant relationship with that construct. The constructs which demographic factors had an influence on were ECCB, EC and the green gap. Post Hoc comparisons were conducted using the following tests: Tukey HSD, Bonferroni and Games-Howell.

Table 4.24 One-Way Analysis of Variance Results with Environmental Concern

		Sum of Squares	Df	Mean Square	F	Sig.
Income	Between Groups	4.372	5	.874	2.347	.047
	Within Groups	35.395	95	.373		
	Total	39.768	100			
Race	Between Groups	8.724	4	2.181	6.537	.000
	Within Groups	37.037	111	.334		
	Total	45.761	115			

In the table above, statistically significant differences were found for the *income* category F=2.347, p=0.47 and *race* category F=6.537, p=.000.

The significant differences were between the middle class (R160000-320000 per annum) category and the lowest earning category who earned below R40000 p.a., indicating that those with a higher income are significantly more concerned about the environment. This result may be due to the fact that poorer people have other more pressing concerns such as health, and education. There were significant differences between Africans and two other races, namely, White and Indian respondents, in terms of environmental concern. Both the latter race groups exhibited significantly more environmental concern than African respondents did. Understanding the causes of this difference would make for interesting future research.

Table 4.25 One-Way Analysis of Variance Results with ECCB

		Sum of Squares	Df	Mean Square	F	Sig.
Resident	Between Groups	4.101	3	1.367	4.432	.005
	Within Groups	36.700	119	.308		
	Total	40.800	122			

In the table above, statistically significant differences were found for the *resident* category F=4.432, p=0.005.

There were significant differences in ECCB between respondents who lived in rural areas and those who stated that they resided in a township. The results indicate that respondents who resided in a township exhibited significantly more environmentally friendly behaviour than those who resided in a rural area. This may be due to the fact that urban settlements offer more opportunities for ECCB, for example, recycling. However, further research would be required to understand this difference.

Table 4.26 One-Way Analysis of Variance Results with Green Gap

		Sum of Squares	Df	Mean Square	F	Sig.
Resident	Between Groups	3.967	3	1.322	2.960	.041
	Within Groups	21.443	48	.447		
	Total	25.410	51			
Race	Between Groups	4.501	4	1.125	2.515	.053
	Within Groups	21.927	49	.447		
	Total	26.428	53			

In the table above, there are statistically significant differences which were found between the resident category and the green gap (F=2.960, p=0.041). Games-Howell test showed significant difference between people who stay in the CBD and those who stay in a suburb.

Respondents who resided in an urban area had a smaller green gap than those who stayed in a suburban area. This reflects that urban respondents' behaviour more closely matched their concern. However, a detailed analysis of these differences and their causes was beyond the scope of this research.

4.9. Conclusions

The results of the research were displayed using tables which showed the descriptive statistics: frequency, valid percentage, mean and standard deviations. While levels of awareness were relatively high, the levels of concern and behaviour were only moderate. The green gap was calculated and the study found a gap similar to other previous studies, as this gap indicated that the ECCB construct was less than the Environmental concern construct. This is in agreement

with many studies which have shown that concern was greater than behaviour (Honabarger, 2011; Nielsen, 2011).

The next chapter provides a discussion of the results from this chapter and seeks to illustrate the implications of the results for the different objectives of this study.

Chapter 5: Discussion and Conclusions

The biggest driver of environmental depletion is the human influence, namely the increase in the population and the need to feed this ever increasing population (De Sherbinin, Carr, Cassels, & Jiang, 2007:3). The influence of humankind on the depletion of the environment is a crucial matter which is being researched all around the world, and it calls for concern as there is only one earth.

Human beings are the known to be the catalyst of the environment's depletion by their unsustainable behaviour. They can also be held responsible for or made to be major contributors to sustainability of the environment (Peattie, 2001:187). Green consumerism has been growing in the past few years as consumers are becoming more and more aware of their impact on the environment's depletion.

The purpose of this study was to describe the awareness, attitudes and actions of Pietermaritzburg residents, who are above the age 18, and to determine the existence of the green gap. The previous chapter displayed the findings and analyses from the responses. This chapter discusses the findings and draws conclusions about the levels of environmental knowledge, concern and behaviour and the extent of the 'green gap' amongst Pietermaritzburg residents. The chapter layout is aligned with the objectives of the research. Each objective is discussed individually.

5.1. The awareness of green issues

The questions on awareness were drawn from general environmental issues which are facing the environment as discussed in the literature. There is a direct relationship between awareness and the behaviour of consumers (Chan, 2001:395). Therefore, it is important that organisations who want to influence the behaviour of individuals understand the level of awareness of environmental challenges. Environmental awareness of different issues that are impacting on the deterioration of the environment has been increasing over the years around the world (Han, Hsu, & Lee, 2009:521). Companies must intentionally pursue the growing market of consumers who are becoming aware of green issues that are affecting the environment. It is also crucial for stakeholder organisations which are championing environmentally friendly programmes to measure the level of awareness that their programmes are achieving.

Using a scale from 1= not aware at all to 5 = very aware, respondents were asked their level of awareness of various environmental challenges or issues. Overall the composite mean for awareness of environmental issues was 4.16 indicating a high level of awareness of the issues. Of the issues investigated in this study, *the earth is getting hotter and causing the dramatic changes in weather* had the highest mean (4.45), followed by *Overpopulation is a serious issue to the environment* with a mean of 4.24. The *Ozone layer depletion* and *Deforestation is not good for air quality* issues also had relatively high means with 3.997 and 4.07 respectively.

These findings are interesting as a study done by Taderera (2010:2) showed only 18% of South Africans were aware of climate change as an environmental issue whereas 76.9% of the Pietermaritzburg respondents were aware to some extent of the climate change issue. Furthermore, Pietermaritzburg residents have higher levels of awareness compared to the World's awareness of climate change, including Asia, the Middle East, North Africa and Sub-Saharan Africa which have the following percentages respectively 61%, 53%, 41% and 44% (Taderera, 2010:2). Compared to European and American respondents, Pietermaritzburg residents are slightly less aware than both geographic areas with these areas having 88%, 82% awareness respectively (Ray, 2009:1). There are many factors that may be underlying the different percentages in the levels of awareness across the different geographical areas. As mentioned in the findings chapter, some degree of socially desirability bias may have slightly inflated the scores as respondents may have felt they would appear ignorant if they did not admit some level of awareness. However, if this were the case it would have been expected to also influence their concern and behaviour and yet they were substantially lower. The higher awareness scores may also be due to the increased amount of media attention given to these issues in South Africa in the last 4 years. South Africa hosted the COP 17 Conference in 2011.

It may also be that globally there has been a marked increase in awareness and these differences actually reflect differences when the research was conducted. This seems to be supported by a study conducted in China in 2012 which found 93% of respondents indicating that they were aware of climate change (Communication, 2012:1).

These Pietermaritzburg residents also saw overpopulation as a serious catalyst for environmental deterioration with 59.6% of the respondents being very aware, and a total of 65.3% being at least aware that overpopulation is a serious issue for the environment. Overpopulation as an

environmental issue is said to be the main cause of most of the issues outlined in this study: ozone layer depletion, deforestation and uncontrolled use of energy. Chan (2001:391) states that 30 to 40% of environmental issues are caused by human beings and their consumption patterns.

Another aspect of awareness investigated in this study was the respondents' awareness of two environmental campaigns. Overall the composite score mean for awareness of the campaigns was 3.5 indicating a lower but still positive level of awareness. This was due mostly to the high awareness of the Save the Rhino campaign which had a mean of 4.25 with 84.5% of respondents being at least moderately aware of the Save the Rhino campaign. Awareness of Eskom's 49M campaign was lower, with only 51.1% of respondents being at least moderately aware of the campaign. The plight of the rhino and the high levels of publicity around rhino poaching could have influenced awareness of this campaign. Despite the relatively lower levels of awareness of the 49M campaign, Eskom has reported its success in that Makuse (2013b:1) states that 83% of those who admit to being aware of the 49M campaign report that they changed their behaviour as a result of this awareness. In the behaviour section of the current study, a high percentage of respondents indicated that they have attempted to save electricity by reducing their usage, thus possibly supporting Eskom's claims of the success of the campaign. This finding is important as it indicates that campaigns on aspects of environmental sustainability may not need to achieve total market awareness to begin having a positive effect.

In conclusion, the Pietermaritzburg residents in this study have fairly high levels awareness of environmental issues, especially climate change and overpopulation. They are also aware of environmental campaigns such as Save the Rhino and Eskom's 49M campaign.

5.2. The extent of environmental concern

Lee (2008:578) argues that environmental concern is the second top predictor of green purchasing behaviour (Han *et al*., 2009:520; Laroche *et al*, 2001:513). Therefore, it can be said that concern is necessary before action can occur. Han *et al*. (2009:520) study looked at the hospitality industry, and found that there is a significant relationship between level of environmental concern and the number of people who intend to stay at the hotel. Laroche *et al*. (2001:513) state that there is positive relationship between the willingness of consumers to pay a premium price and the extent of environmental concern in geographical area. Determining the

extent of environmental concern amongst the people of Pietermaritzburg is therefore essential to measuring the 'green gap'.

Respondents of Pietermaritzburg showed a high levels of environmental concern as the mean for the environment concern composite score was 2.17 where 1 represents the highest concern and 5 the lowest. Seventy three percent of the respondents were concerned about the environment. This is a higher percentage than respondents in the Alexandria study conducted in Egypt (Shoukry, Samia, Ayman, & Mostafa, 2012:4) who had an average percentage of 66.1%.

Another conclusion which can be drawn is that a high percentage of respondent indicated they were neutral because they were unclear of their stance on these environmental concerns and, therefore, need to be educated so they can see the need to be concerned.

The following conclusions can be reached with reference to the environmental concerns of the Pietermaritzburg sample as seen in Table 4.7 through using the means as a barometer to draw these conclusions:

Human beings have to live in harmony with nature in order for them to survive. This is a strong perception amongst the respondents as it achieved the lowest mean of 1.76. Therefore, respondents have a perception that human beings are dependent on nature for survival.

They also believe that human beings are responsible for the damaging of the environment they inhabit, as the mean was a low 1.88. Marketers can tap into this belief and make more people aware, with the idea that consumers will change their behaviour and act more eco-friendly.

Respondents thought that a healthy economy needs to be controlled in terms of industrial growth, with a mean of 1.99. Therefore, government can draw from this finding and make policies which deal with controlled industrial growth because according to this study it will be likely adopted by the people.

Pietermaritzburg residents believe that human beings are damaging the environment, and state that a healthy economy is one that practises controlled industrial growth. The Alexandria study showed a greater agreement in relation to the same question: it scored an above 80% frequency distribution (Shoukry *et al*., 2012:6). The population of Alexandria, Egypt, felt more strongly

that human beings are damaging the environment than their Pietermaritzburg resident counterparts (Shoukry *et al*., 2012:6).

In conclusion, there is a fairly high level of environmental concern amongst the residents of Pietermaritzburg.

5.3. To assess the level of action that Pietermaritzburg residents have taken made with regards to green issues.

Ecologically conscious consumer behaviour is the making of a conscious effort by consumers to change their negative behaviour in order to protect the natural and physical environment (Albayrak *et al.*, 2011:189). Behaving in an environmentally friendly way is essential to assisting in the fight against the depletion of the environment. Therefore, it is the responsibility of everyone in society to behave in an environmentally sustainable manner.

ECCB composite scores showed that respondents have participated in some of actions that are pro-environmental. The results indicate a mean composite score of 2.81 where 1 represents the highest amount of action and 5 the lowest. The mean being close to 3 indicates a fairly neutral response to green actions. A low 13% of respondents acted in an eco-friendly manner. Although very low, this figure is not totally dissimilar to a similar global study where the percentage was 22%.

The next section looks at participation in particular green actions or behaviour.

5.3.1. Reduce, Recycle and Reuse

Respondents indicated to have participated in reducing their use of electricity. The reduction in the use of electricity is an important and well-publicized element in South Africa. For example, the national television broadcaster, SABC, provides information on the electricity usage status and the need to switch off appliances etc. The majority (74.8%) of Pietermaritzburg residents stated that they had taken action in the reduction of the amount of electricity that they were using and this statement also showed a favourable mean of 2.05. This is an encouraging statistic that was found in this study, as Pietermaritzburg residents were engaging in the reduction of their usage of electricity. The reduction of electricity usage is important as most of South Africa's

electricity is generated using coal. Some of the ways that respondents used to reduce electricity are stated as some of the key findings in the paragraphs below.

The results show that respondents participated in the replacement of high voltage light bulbs with lower voltage light bulbs as 75.2% of respondents stated they have taken this action. This statement also achieved considerable low mean and standard deviation (2.05, 1.20). The high percentage of adoption by residents of Pietermaritzburg has to take into consideration the efforts made by Eskom in rolling out energy efficient light bulbs replacing the older light bulbs (IDM, 2010:1). The Eskom roll out of eco-friendly light bulbs has also assisted in the rate of adoption and action towards assisting in the sustainability of the environment. Therefore, it is an encouraging sign that 3 out of 4 respondents have replaced their higher voltage light bulbs with a lesser voltage, but there is still a need continue the effort of keeping these respondents purchasing energy efficient light bulb.

The purchase of energy efficient products or services is also another category to check if consumers are adopting a green lifestyle. Purchasing of products which are consuming minimum levels of energy is another indicator of consumers being ecologically conscious. The Pietermaritzburg residents indicated that they purchase electric appliances which are energy efficient with a mean & standard deviation of (2.49, 0.96). Results show that 53.9% of respondents have bought household appliances that are energy efficient.

In the findings, respondents are below average in terms of their recycling behaviour but this is similar to studies around the globe which showed similar percentages. Recycling behaviours are important as they impact on many areas that contribute towards a more sustainable environment, such as less manufacturing of products causing an effect on energy use, and other natural resources used in manufacturing.

Respondents did not show clear signs of reusing products in order to save the environment. Around 40% of the respondents stated that there were reusing their plastic bags when going to the supermarket. This means that around 60% were either indifferent to or had not participated in the reuse of their plastic bags.

5.3.2. Non-purchase of products that are harmful to the environment

Knowledge of the harmfulness of a product to the environment is a cause of the majority of respondents in this study not purchasing that product. 54% of respondents agreed with a statement that was asked about their non-purchase of products which are harmful to the environment. Therefore, all stakeholders should encourage green activists to bring knowledge of the impact on the environment the product has. Respondents also indicated that they chose a green product instead of a product that is harmful to the environment.

5.3.3. Purchasing of green products

Respondents were purchasing energy efficient appliances and admitted to having replaced light bulbs which were less green in terms of their energy use to light bulbs which were greener. There was no majority that stated that they had switched products for ecological reasons. Stakeholders would need to involve themselves in putting pressure on consumers to participate in switching to greener solutions through purchasing green products.

5.3.4. Packaging's impact on purchase of products

Respondents did not take action with regards to taking into consideration the packaging of the products that they were purchasing. This is demonstrated in the statement related to the non-purchase of products in aerosol containers: only 21% agreed with this statement. This means that around 80% were either indifferent to or agreed to have participated in the purchase of products in containers that are harmful to the environment.

With regards to green consumer behaviour, the researcher can conclude that respondents in Pietermaritzburg have been involved to a certain extent in green consumer behaviour but there is still room for improvement in many areas.

Respondents seem to have taken action to reduce the amount of electricity usage, as close to 75% respondents stated they had taken this action. And they had also stated that they had bought light bulbs which were energy savers to replace those that used high voltage.

There were other actions towards which respondents felt either indifferent or showed little practice. There are several reasons for this lack of green consumer behaviour. The next objective discusses some of the reasons which are related to consumers' not adopting green practices.

5.4. To establish the reasons for the lack of Ecological Conscious Consumer Behaviour (ECCB)

There are several reasons which consumers give for their lack of adopting eco-friendly lifestyles, both monetary and non-monetary (Majláth, 2010:157). In this section the researcher discusses the reasons for the lack of green consumer behaviour in two parts: one discussing the Perceived Consumer Effectives as a reason and the other discussing the other reasons for the lack of ECCB.

5.4.1. Perceived Consumer Effectiveness

Perceived Consumer Effectiveness is defined as the extent to which consumers believe that their individual efforts can make a positive impact on the environment (Chang, 2011: 21; Choi & Kim, 2005: 593). The difference that each individual can make on environmental depletion is great. This is because individuals form part of families, families form part of society. Therefore the importance of the individual's perceived effectiveness in assisting in the sustainability of the environment is crucial. Perceived Consumer Effectiveness (PCE) is an important contributor to the complex study of ecologically conscious consumer behaviour. Studies have found that there is a direct relationship between PCE and environmentally conscious behaviour (Albayrak *et al*., 2011:191).

The general view of respondents indicated that they think that they are capable individually of effecting positive change in the fight against environmental depletion. This fact is illustrated by the mean of the PCE which is 2.17. This indicates that the majority of respondents have this perception. The percentage in the composite score frequency table is 58%.

The reasons for the lack of ECCB are going to be discussed from the most to the least stated reasons amongst Pietermaritzburg residents. The discussion of these reasons in such a manner is important in showing the reasons which need to take centre stage in the different campaigns. These reasons need to be addressed by the different stakeholders who are part of the fight against the depletion of the environment.

Price has been perceived as one of the most mentioned reasons by consumers in the market for not adopting a green lifestyle (Majláth, 2010:157). Consumers are price sensitive about green products in the market, hence the perception that green products are expensive. Challenging this

perception is the task that all stakeholders in the fight for a greener society should endeavour to decrease.

The finding that green products are expensive concurs with past studies (Bennet & Williams, 2011:1). This is seen by most (47.6%) respondents agreeing with the statement that green products are expensive. Therefore, there is still a perception amongst Pietermaritzburg residents that green products are expensive. In previous studies, consumers' response to the perception that green products were expensive was not to purchase green products. The non-purchase of green products is an unwanted outcome for all the stakeholders who are involved in the fight against the depletion of the environment. It is especially discouraging for the business sector as it means consumers will not buy the products which they are producing.

Another result that supported the idea that consumers are not willing to pay a premium price in an effort to have a sustainable environment, was that most (42.7%) consumers stated they would purchase the lowest priced product regardless of its impact on the environment.

However, an encouraging result related to price is that consumers in Pietermaritzburg have purchased at least one green product known to be more expensive than its equivalent counterpart. The results showed that the majority (57.4%) of respondents indicated that they had purchased an expensive light bulb but which had a feature that it saved energy. Saving energy plays a major role in the sustaining of the environment, therefore having the majority (57.4%) of respondents purchasing expensive energy-saving light bulbs because they are energy saving shows the intention of Pietermaritzburg residents to purchase products which are able to save the environment.

Respondents are participating to a degree in green consumer behaviour which, for all stakeholders that are involved in the fight for a more sustainable environment, is encouraging to see. The different actions that were tested still showed a degree of uncertainty in terms of respondents stating that they were neutral. Price is still a factor in the adoption of green products. Finding out some of the reasons for the lack of green consumer behaviour is important in addressing and improving behaviour.

The promotion of eco-friendly products was seen as the most identified reason for the low ECCB amongst Pietermaritzburg residents. Results show that 63.3% of the respondents agreed with the

statement that there is a lack of promotion of eco-friendly products. Promotion of eco-friendly products and services will assist in purchases of eco-friendly products.

What has been observed in the findings of this study is that Pietermaritzburg consumers tend to think the biggest reason for their not purchasing green products (green gap) is the lack of information about green products. There is a small percentage (18.7%) of the sample who think there is enough promotion of green products. This percentage shows the need for green marketers to prioritise the distribution of information on green products. The promotion of eco-friendly products as a reason for the green gap had the lowest mean of 2.34 where 1 represents the greatest amount of agreement with the statement.

Convenience is always a necessity in the adoption of products, especially new products. There tends to be a limited number of green products and services in the local areas such that consumers find it inconvenient to purchase green products (Data, 2011:1). Hence there is a lack of green consumers in the market due to the lack of products which are readily available to purchase by the consumers. The results show that 48.9% of consumers stated that green products are not easily available for them to purchase.

The ability of consumers to distinguish between green and traditional products is important for the purchase of pro-environmental products. Findings showed that 32.8% of respondents were unable to differentiate between green and traditional, while another third of the respondents were indifferent. Hartmann *et al*. (2005:21) state that it is essential for green products to position their environmental attributes such that the environment benefits. This will further assist in differentiation between green and traditional products.

Almost 60% of respondents stated that they trust green products. The interesting fact is that consumers trust green brands but say they are unable to distinguish between green and traditional products. Therefore, respondents showed knowledge of green products. There was also agreement that green products were clearly labelled, meaning respondents could see a green product by it labelling.

The main reasons for the lack of ECCB are: the lack of promotion of green products and the awareness of such products Respondents were also unable to distinguish between green and

traditional products but agreed to having knowledge about green brands and agreed that green products are clearly labelled.

The following investigates the relationship that the different constructs (independent variables) have with ECCB (independent variables).

5.5. Relationship between ECCB and other constructs

The findings of this study indicate that the Ecological Conscious Consumer Behaviour (ECCB) construct has two predictors. The regression model showed that with PCE, Environmental Concern and Awareness of Environmental Issues as independent variables and ECCB as the dependent variable, 37.7% of the variance in ECCB could be explained by the independent variables. However, only two of the variables are significant predictors of ECCB. These are Awareness of Environmental Issues and PCE.

5.5.1. ECCB and Awareness

When applying Pearson's correlation tool, there was a significant relationship between the awareness of environmental issues index and Ecological Conscious Consumer Behaviour (ECCB) with the significance level p=0.03, with a Pearson's correlation of -0.272. Consequently, the relationship was a negative relationship between the two constructs, meaning that as the level of environmental awareness increases ECCB decreases. This finding is contrary to studies conducted which indicated the relationship between environmental knowledge and green consumer behaviour is significant but which have a positive association (Chan, 2001:391;Chua, 2012b:1). The finding also seems counterintuitive. It would be expected that as there is an increase the awareness of environmental issues, more consumers would make an effort to live an eco-friendly lifestyle.

5.5.2. ECCB and Perceived Consumer Effectiveness

A key finding was that Perceived Consumer Effectiveness (PCE) is a strong predictor of ECCB. This finding supports studies which show that Perceived Consumer Effectiveness is a predictor of ECCB (Choi & Kim, 2005:593; Straughan & Roberts, 1999:558). This means that the more individuals think that they can make an impact on the sustainability of the environment, the more they behave in a pro-environmental manner.

5.5.3. ECCB and Environmental Concern

In this study, EC was not found to be a significant predictor of ECCB. This is contrary to previous studies (Choi & Kim, 2005:593; Kaufmann *et al*., 2012:52; Laroche *et al*., 2001).

There are many relationships which affect the purchasing of green products and these have been stated above. The following section looks at the gap that exists between concern and action amongst consumers.

5.6. Establish the extent of the gap between concern and action.

Concern for the environment has increased in the last two decades as people have been experiencing changes in the climate (Chang, 2011:19). 87% of respondents in a study stated or agreed with the questions of being aware about their environmental impact caused by their purchase decisions (Bonini & Oppenheim, 2008). With such a high percentage of people indicating that they are aware and concerned, it would be thought that the actions or behaviour could also meet their high awareness and concern.

However, other studies have found a gap between concern for the environment and purchase behaviour with regards to green products in the market (Kennedy, Beckley, McFarlane, & Nadeau, 2009; Nielsen, 2011:1). In an equation form: GG= ECCB- EC whereby GG= Green Gap, ECCB= Ecologically Conscious Consumer Behaviour and EC= Environmental Concern. The 'green gap' result in this study is 0.661. Thus there is a 'green gap' between the behaviour of respondents and the level of environmental concern.

5.7. To determine the effect of demographics on green consumer behaviour.

The inconclusive nature of the findings on the influence of demographic factors on green behaviour (Dang & Kausal, 2013:82) in many previous studies is the primary reason this study investigated the influence of certain demographic factors. While some studies have inconclusive results, others provide support for the profiling of green consumers (Bui, 2005:20; Gan *et al*., 2008:94). This section discusses the role of various demographic factors in green concern and behaviour of the Pietermaritzburg consumers in the study. The demographics which are covered are age, gender, education, income and residence.

Studies have used demographics to segment the green consumer market across the world (Peattie, 2001:188). Segments assist marketers in targeting the right consumers with the right products. The green consumer profile varies with certain studies but there are some common profiles which have been identified in previous studies. The most consistent profile of green consumers is that they are young, middle-high income, educated females (Bui, 2005:20; Rex & Baumann, 2007:569; Ryan, 2006:1; Straughan & Roberts, 1999:558).

In this study, the researcher used ANOVAs to test the influence that various demographic variables have on the key constructs.

The results showed that there were no statistically significant differences in green consumer behaviour by age, gender or education. This is contrary to other studies (Bui, 2005:20; Rex & Baumann, 2007:569; Straughan & Roberts, 1999:558). This could mean that a demographic profile using age, gender and education will not be necessary for the population in Pietermaritzburg. Thus women and men of all ages and education levels appear to exhibit similar levels of green behaviour and thus may be targeted using similar green marketing strategies. It should be noted that the education level of the respondents was higher than the Pietermaritzburg norm and, thus, with a sample of less educated respondents, this finding may have been different.

But there were statistically significant differences in green consumer behaviour depending on where the respondent lived, their income and race group. Residence had significant difference with ECCB and the green gap. There was a difference in ECCB and the green gap between respondents who lived in a rural area and those who lived in a township and suburban areas. There were statistically significant differences in environmental concern with income and race.

Demographics play a major role in the segmentation of markets into segments. Thus this objective needed to be tested for the improvement of recommendations to stakeholders such as marketers and policymakers to make decision based on them.

5.8. Conclusion

In conclusion, in this chapter the researcher discussed some key discussions which are as follows:

- Relatively high levels of awareness of environmental issues were demonstrated by respondents especially when it came to climate change. There is still a need to increase the level of awareness.
- Environmental concern was seen to be relatively high with a mean of 2.17.
- The level of action towards purchasing green products is below the environmental concern hence the study found there was a 'green gap'.
- Respondents felt most strongly, more than all the reasons for their lack of behaving in an eco-friendly manner, that the promotion of green products is limited and needs to be improved.

All the objectives were achieved to a large extent and were discussed thoroughly by the researcher. The discussions of the findings were supported by previous research most of the time.

The following chapter looks at the recommendations which come out of the discussion of this study.

Chapter 6: Recommendations, Limitations and Final Conclusion

6.1 Introduction

The research problem highlighted in the introduction aimed to determine the extent of environmental awareness, attitude and behaviour towards purchasing green products and to determine the existence of the green gap in a developing nation such as South Africa. In the previous two chapters, findings related to the research were presented and discussed and then conclusions drawn on the research objectives.

The study found that there exists a gap between the behaviour of consumers in the market and attitudes towards having a sustainable environment.

In this chapter, the researcher seeks to provide recommendations centered around improving the purchase of green products which will ultimately sustain the environment, This is done by providing recommendations of how to improve pro-environmental behaviour, and the reasons for the lack of ECCB is addressed.

6.2. Improvement of green consumer behaviour

The study found evidence of actions that Pietermaritzburg residents have been taking with regards to having a more sustainable environment. The research instrument had 25 statements related to the various actions which could be taken in order for some to be seen as living an eco-friendly lifestyle.

In the findings chapter, the statements mentioned above were divided into similar topics of action such that questions related to reducing were in a table together.

The recommendations will be divided into the same categories as found in the findings chapter.

6.2.1. Reduction for environment sustainability purposes

Results showed that respondents were making an effort to reduce activities that negatively affect the environment. This behaviour has to be encouraged.

Respondents showed that they were driving less to reduce the amount of carbon emission. Therefore, there were less carbon emissions which were being transmitted into the atmosphere but there is a need to increase the number of people who take this action. This can be done

through taking lift clubs to school or purchasing bicycles so that they can cycle to university or work.

A study dealing with alternatives that people can use to move from point A to point B should be done, to find out the perceptions and the alternatives that people use instead of vehicles. Thereafter, a social marketing campaign should also be conducted to encourage people to drive less or use other alternatives which are more environmentally friendly.

6.2.2. Reusing reusable products

The results showed that the majority of respondents did not participate in reusing reusable products. The price associated with purchasing plastic bags at the supermarket has not affected consumers in the market, since there are still millions of plastic bags sold each year. It is recommended that there be a total ban on plastic bags in order to increase the usage of reusable carrier bags. This will increase the use of reusable products. Another recommendation would be to educate people on the different ways in which reusable products can be used and the cost benefits which are related to reusing products. This can be done through bringing education drives to schools, universities and workplaces.

6.2.3. Recycling of recyclable materials

The recycling of recyclable materials has major economic benefits. Educating the general public as well as people in schools, institutions and organisations to earn extra income through recycling their waste materials is crucial. It is recommended that, as part of educating organisations, they are convinced to purchase different recycle bins for different wastes. This will make it easier for organisations to sort their recyclable waste. This could be done by training health and safety officers to be environmental champions who will champion the environmental cause at the workplace. These health and safety officers will implement these mechanisms, such as recycle bins,

There is a need to educate people to buy products which are made of recyclable material. This is seen by the results of the study whereby just over a third of the respondents indicated that they had bought products made from recyclable materials. This can be through showing the benefits of purchasing products which are from recyclable materials. Showing these benefits could entice consumers to purchase products with recyclable materials.

Recycling paper products has a vast impact on the sustainability of the environment. Conducting reminder campaigns in Pietermaritzburg through mass media for reinforcing the importance of recycling paper materials is thought to be a solution for ensuring an increase in the number of participants who recycle paper products.

6.2.4. Boycott of products that are harmful to the environment

There is an overall consensus among respondents to take action against products that are harmful to the environments. But there needs to be an increase in the number of respondents who take action against products which are harmful to the environment. Policies should be drafted in order to enhance or assist in the respondents' acceptance of taking action against products that are harmful to the environment. A policy document showing the government's assistance to consumers who purchase green products such as a tax deduction incentive for a purchaser who purchases green products.

Furthermore, respondents need to be encouraged to put pressure on others about purchasing products that are eco-friendly and against purchasing those products that are harmful to the environment. There needs to be a greater level of collectivism amongst Pietermaritzburg residents. The reason is that just under 40% of respondents indicated that they had not informed someone close to them about abstaining from products which are harmful to the environment. This implies that at least 60% have either told their relatives and friends or have remained neutral. Changing the perception of respondents who stated there have not encouraged others to abstain from products that are harmful to the environment through social marketing campaigns would be important to the fight against the depletion of the environment. Green marketers will sell the idea of telling someone about the dangers of purchasing products that are not environmentally friendly. Advertisements which show communities/families standing together in the fight against purchasing harmful products will assist in bringing a collective mindset.

6.2.5. Purchasing of energy efficient products

The manufacturing of more energy efficient products is crucial to respondents' purchasing products which do use energy efficiently. Governments and the business community need to work together to ensure that customers are offered energy efficient products at a right price that are of good quality.

Government subsidies need to be made available to companies who are manufacturing products which are eco-friendly. Eskom took the initiative to replace light bulbs which were not energy efficient with efficient light bulbs. Therefore, that is why 75% of respondents indicated that had replaced light bulbs which were not energy efficient.

6.2.6. Packaging of products

Eco-friendly packaging is essential to the sustainability of the environment. Stakeholders need to identify packaging that is not going to harm the environment and the business sector needs to package their green products in sustainable packaging. Clearer labels on packaging to illustrate the difference between those which are environmentally friendly and those which are not environmentally friendly is also important.

6.2.7. The pricing of green products

Consumers are using the perception that green products are expensive as an excuse for not adopting a green lifestyle. Changing the minds of consumers through positioning the benefits which are associated with the purchasing of green products is crucial. Furthermore, making a comparison in price between green products and conventional products could assist. Thereafter, give green products a competitive price.

Government subsidies should be given to businesses which are producing green products. As much as respondents had an extent of behaving in an eco-friendly manner, there is still a need to see improvement in the ecologically conscious behaviour of Pietermaritzburg consumers. There are several reasons which hinder consumers from behaving in a manner that is environmentally sustainable.

6.3. Addressing the reasons for lack of Ecological Conscious Consumer Behaviour (ECCB)

Consumers have indicated that there are several barriers which hinder them from acting in an environmentally sustainable manner (Han *et al.*, 2009:520). Addressing these barriers is important to the sustainability of the environment that human beings are living in. There is a clear need to reduce the number of reasons that respondents have for not living in an eco-friendly way.

Recommendations for the lack of ECCB are divided into two sections, one detailing the recommendation for increasing Perceived Consumer Effectiveness and other section dealing with the reasons indicated for lacking green consumer behaviour.

6.3.1. Perceived Consumer Effectiveness Reasons

A small majority of 58% of respondents believe that their individual effort can cause a positive change in the fight for a more sustainable environment. But in the findings there were still respondents who believed that their individual efforts were not sufficient to cause a positive change in the depletion of the environment. As PCE is a significant and positive predictor of ECCB, policy makers need to address perceptions of respondents who think that their individual efforts do not contribute to a more sustainable world. Using campaigns which focus on attracting the individual's attention and encouraging individual action will definitively assist in driving consumers to purchase green products. The 49M campaign worked on a similar concept and looked closely at and studied how to assist in increasing green consumer behaviour. Consumers need to be shown that their individual efforts can make a difference to the sustainability of the environment.

6.3.2. Other Reasons

In terms of looking at other reasons for the lack of ECCB amongst respondents, it was clear that promotion of green products was needed in order for consumers to be aware of these respondents. This could mean that the current green products campaigns are not effective and, therefore, need to be evaluated and repositioned in order to achieve the objective of green products well marketed.

6.3.2.1. Promotion of green products

The promotion of green products and services not only assists with the purchasing of green products but it also increases the awareness of the need to act against the degradation of the environment. Better information by organisations who are promoting the adoption of eco-friendly products and services is vital to gaining the trust of consumers in the market (Ozaki, 2011:2). An accurate distribution of information will assist in solidifying a stronger position in the minds of consumers, as a lack of accurate information is a disadvantage for the cause of environmental sustainability (Ozaki, 2011:2). Ozaki (2011) continues to argue that having prior knowledge and being in the search of more information are catalysts for consumers' adopting an eco-friendly lifestyle.

As discussed above in the recommendations related to the reasons for the lack of ecologically conscious consumer behaviour, promotion of green products was seen to be the foremost reason for lack of ECCB. An investment, both monetary and non-monetary, needs to be made by senior management to encourage the promotion of green products. Money is needed to aggressively promote green products in all forms of media. An integrated marketing communication plan needs to be designed and implemented. And any marketing communication plan would need the full support of management.

6.3.2.2. Product Quality

Although almost 40% of the respondents do not believe green products are inferior, there is still the remaining 60% of respondents who either did believe they are inferior or were not sure. Therefore two recommendations arise from this:

1. There needs to be an investment in the quality of green products and
2. The similar quality needs to be highlighted through quality endorsers such as green certification symbols which can be clearly seen by consumers.

Together with the aggressive promotion of green products there needs to be a strong campaign focused on the perception of the price of green products. The findings show that consumers see green products as expensive. This supports the findings by Bennet and Williams (2011). Using an integrated supply chain management system which will not only source raw materials at cheaper prices but will also ensure that they are produced at the lowest cost possible, thus affecting the cost passed on to consumers, is necessary. This could lead to green products being cheaper whilst delivering good profit margins to the investors. Another way is promoting the benefits in monetary terms as there has been done in the use of energy efficient light bulbs. This will cause the financial incentives to outweigh the costs.

6.3.2.3. Product availability

Respondents had indicated that green products are not easily available. Available of green products means that consumers need to find green products whenever they need them. Green products have to be in close proximity to consumers. Distribution of products plays an important role in the purchasing of green products (DERM, 2012:3). This is can be done by each store having a green products shelf easily visible in their supermarket. Large chain stores have to stock green products to eliminate this reason.

6.3.2.4. Distinguishing between green and traditional products

Respondents have not clearly shown that they can easily distinguish between green products and traditional products. The fact that only a third of the respondents stated that they were able to distinguish between them shows that there is a need for an emphasis on the differentiation between these two types of products. Therefore, there is a need for clear and standard labels which will be approved by the South African government and other governments as a clear distinguisher between green products and traditional products.

6.3.2.5. Labeling of green products

A national green certification that would make green products clearly visible and identifiable to customers could assist in distinguishing the products and will also assist in reassuring consumers of the quality and trustworthiness of green products. It could be set up through establishing a policy by government which would need to be discussed with the various stakeholders before being approved.

6.3.2.6. Awareness of green products

The findings showed that respondents felt that they were not aware of green products as 60% stated that they were not aware. Increasing awareness of any products allows for that product to be purchased. Making people aware of green products will involve stakeholders such as teachers informing their scholars about what green products are and the benefits thereof.

Recommendations have been provided for the improvement of Ecologically Conscious Consumer Behaviour. Reasons for the lack of Ecologically Conscious Consumer Behaviour were addressed and recommendations associated with decreasing reasons for the lack of ECCB were provided in order to increase the purchasing of green products.

The following section provides limitations & recommendation for future studies and an overall conclusion.

6.4. Limitations of this study and recommendations for future studies

Through conducting the study, there was evidence of limitations that were experienced. The following are some of the limitations that were experienced:

6.4.1. Data Collection

The point at which the data was collected through the distribution of self-administered questionnaires to participants was the Mkondeni Test Driving Centre (MTDC). It provided a very young sample as most of the respondents were between the ages of 18-30. This then caused a limitation as the older age groups were not adequately represented in the study.

The questionnaire design could have possibly caused difficulty in understanding for non-English speaking respondents although this is unlikely to have had a major impact given the education levels of the respondents. The questionnaire could be translated into other languages for future studies.

The study focused on respondents from Pietermaritzburg only. The study could yield different results if conducted in another city or province.

6.4.2. Neutrality

Some statements were probably misunderstood by respondents. This is seen by the number of statements which had a substantial percentage of respondents who indicated that they were neutral. The following emphasises the need for this limitation and makes recommendations for future studies:

An observation that needs to be made is that many concern statements had significant percentages of respondents who were indifferent. This is shown by the respondents who selected the neutral option in the Likert Scale. Therefore, future studies into Environmental Concern of respondents should be conscious in using the statements which are used above as they seem to leave many respondents indecisive. The reason for this could be investigated further in future research.

The statement which was asked by this study which faced some challenges at the data collection point was that respondents seemed to have no car/vehicle thus responded by being neutral for that particular statement. Therefore, in future studies the researchers that the question is only targeted to people who have motor vehicles. And a follow-up question/s should be asked as to which mode of transport is used if they are not driving.

6.5. Recommendations for future research studies

The study used an old version of the New Ecological Paradigm instead of the revised New Ecological Paradigm (Dunlap *et al*., 2000:425). This was done in order to allow the comparison of studies with fairly recent studies, as most use the revised NEP although these two scales are similar. The researcher chose the original NEP as there were minor differences between the revised and the original.

It would be interesting to gain more insight into the barriers that consumers find in relation to adopting an eco-friendly lifestyle as it is said to be a complex issue (Kaufmann *et al*., 2012:52). This could be done through a focus group on the reasons why consumers are and are not purchasing green products.

The awareness of environmental issues was quite high but further research into understanding and recall abilities about the different campaigns and how they would behave in response to these campaigns could be useful for future environmental campaign strategies. An example of this is the difference between the Save the Rhinos campaign and the 49M campaign: Save the Rhinos got better awareness levels than the 49M campaign.

Collecting data in malls through conducting mall intercepts in different malls and shopping centres reach a better variety of participants. It could also assist in reaching the different older age groups more easily.

6.6. Overall Conclusions

There is a need for environmentally friendly behaviour as the depletion of the environment is set to continue as the predicted population is still going to increase drastically in the coming decades. A population increase will cause an increase in the consumption of goods and services.

As consumption of goods and services increases, a need arises for consumers to purchase green products and support green causes for the sustainability of the environment. There is need for three main responses: government response, business response (which does not fall in the scope of this study although some recommendations are given) and consumer response which was discussed in detail. Three core constructs in relation to green consumer behaviour were investigated: awareness of environmental issues, environmental concern and ecologically conscious consumer behaviour or the action construct.

The research objectives for this study were met and are further discussed in terms of how they were met.

In relation to consumer response, the study found that respondents of Pietermaritzburg had a relatively high level of awareness with regards to environmental issues. This means that consumers are aware of the environmental issues facing them daily, although through which medium they are made aware should be investigated further as this was beyond the scope of this study.

With regards to the environmental concern of respondents, results showed marginal environmental concern. This marginal environmental concern could be seen as consumers in Pietermaritzburg not translating their awareness of environmental issues into an important issue which deserves their concern.

Respondents were seen to be taking some action towards purchasing green products. An increase in the ECCB is important for the protection and sustainability of the environment. Therefore, there is a need to continuously improve and encourage the purchase of green products and participation in green behaviours such as recycling, reusing and reducing.

The study finds that the green gap exists amongst these Pietermaritzburg adult respondents. While environmental concern is fairly average but skewed more to agreement that there is a need for concern, ECCB or action is less. There has to be an attempt by all stakeholders to challenge each other to create a more environmentally friendly society, thereby decreasing the environmental gap and ultimately increasing ECCB to be greater than environmental concern. This would mean there is not a green gap and the world will be moving towards a more environmentally friendly era.

The awareness of environmental issues was found to be a negative predictor of ecological conscious consumer behaviour. Environmental issues were the strongest predictor of ECCB in this study. It appears that despite consumers knowing the problem, actions related to their knowledge are not happening. Some of the reasons for this could be seen as discussed below.

In this study, as compared to others, environmental concern was found not to be a significant predictor for ECCB. But the relationship was positive in relation to ECCB. Although ECCB and

environmental concern do not have a significant relationship with each other in this study, the positive relationship they have should be utilised in programmes to increase green consumer behaviour.

Perceived Consumer Effectiveness was also found to predict ECCB. Thus, the more consumers perceived their individual efforts to make a difference, the more likely they were to adopt green behaviour. Encouraging the belief in individual actions making a difference is thus important.

Perception of respondents regarding their lack of adopting an eco-friendly lifestyle was asked and results showed that the lack of promotion of green products is perceived to be the main reason for their lack of ECCB. There is a need to develop mechanisms which will assist consumers to adopt an eco-friendly lifestyle quicker. Green products were also not easily available for respondents' purchasing. Respondents felt that green products had an inferior quality compared to other traditional products. This cannot be taken lightly although the study also found that respondents were unable to distinguish between green and traditional products. Respondents are aware of environmental issues but they do not take action possibly because of all these reasons.

The study found a green gap which is the difference between ECCB and Environmental Concern as it is seen in literature. This means that even in a developing country like South African there is a 'green gap'.

There were insignificant relationships with certain demographics and the constructs of this study, which are illustrated in the findings and discussions chapters. But the insignificant relationship of the main demographics which are used in green consumer behaviour should be a concern and calls for green marketers to find other ways to segment the green consumer market.

The purpose of this study, which was to determine the extent of environmental awareness, attitude and behaviour towards purchasing green products and to determine the existence of the green gap in a developing nation such as South Africa, is seen to have been achieved by this research.

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Appendices

Appendix 1: Questionnaire

Questionnaire:

This section contains multiple choice questions which require respondents to indicate by marking X at the level which they agree or disagree.

SA-Strongly Agree, A-Agree, N-Neutral, D-Disagree SD-Strongly disagree

Ecologically conscious consumer behaviour (ECCB) items

	SA	A	N	D	SD
1. To save energy, I drive my car as little as possible.					
2. I normally make a conscious effort to limit my use of products that are made of, or use scarce resources.					
3. I buy energy efficient household appliances.					
4. I always try to use electric appliances (e.g. dishwasher, washer and dryer) before 10 a.m. and after 10 p.m.					
5. I will not buy products which have excessive packaging.					
6. I have tried very hard to reduce the amount of electricity I use.					
7. If I understand the potential damage to the environment that some products can cause, I do not purchase these products.					
8. I have switched products for ecological reasons.					
9. I use a recycling centre or in some way recycle some of my household trash.					
10. I have convinced members of my family or friends not to buy some products which are harmful to the environment.					
11. I have replaced light bulbs in my home with those of smaller wattage so that I will conserve on the electricity I use.					
12. I have purchased products because they cause less pollution.					
13. I do not buy products in aerosol containers.					
14. Whenever possible, I buy products packaged in reusable containers.					
15. When I have a choice between two equal products, I always purchase the one which is less harmful to the environment.					
16. I buy products made from recycled paper.					
17. I make an effort to recycle glass.					
18. I make use of the different recycle bins for all my wastage					
19. I will not buy a product if the company that sells it is ecologically irresponsible.					
20. I see green products to be expensive					

21. I supply my own carrier bags at the supermarkets.					
22. I have purchased light bulbs that were more expensive but saved energy.					
23. I try only to buy products that can be recycled.					
24. I usually purchase the lowest priced product, regardless of its impact on society.					
25. I do not buy household products that harm the environment.					

Perceived Consumer Effectiveness (PCE) items

SA-Strongly Agree, A-Agree, N-Neutral, D-Disagree SD-Strongly disagree

	SA	A	N	D	SD
26. It is worthless for the individual consumer to do anything about pollution.					
27. When I buy products, I try to consider how my use of them will affect the environment and other consumers.					
28. Since one person cannot have any effect upon pollution and natural resource problems, it doesn't make any difference what I do.					
29. Each consumer's behaviour can have a positive effect on society by purchasing products sold by socially responsible companies.					

Environmental concern (EC) items

	SA	A	N	D	SD
30. Plants and animals exist primarily to be used by humans.					
31. We are approaching the limit of the number of people the earth can support.					
32. To maintain a healthy economy, we will have to develop a steady-state economy where industrial growth is controlled.					
33. The earth is like a spaceship with only limited room and resources.					
34. Humans need not adapt to the natural environment because they can remake it to suit their needs.					
35. There are limits to growth beyond which our industrialized society cannot expand.					
36. The balance of nature is very delicate and easily upset.					
37. When humans interfere with nature, it often produces disastrous consequences.					
38. Humans must live in harmony with nature in order to survive.					
39. Mankind is severely abusing the environment.					
40. Humans have the right to modify the natural environment to suit their					

needs.					
41. Mankind was created to rule over the rest of nature.					

Reasons for the 'green gap'

SA-Strongly Agree, A-Agree, N-Neutral, D-Disagree SD-Strongly disagree

	SA	A	N	D	SD
42. Product quality of green products is inferior					
43. Promotion of environmentally friendly is lacking					
44. I am unable to distinguish between green and conventional products					
45. Green products not easily available					
46. I am not aware of any green products					
47. I don't trust green branded products					
48. Green products are not clearly labelled					
49. There are no mechanism available for me to practice green lifestyle					

Are there other reasons why you do NOT adopt a green lifestyle?

_____

_____

Awareness of environmental issues

Rate your level of awareness of the following issues from a scale 1-5, where 1=mostly aware and 3=slightly aware and 5= not at all aware

50. I know about the 49M campaign.	
51. I know about the Ozone layer depletion	
52. Overpopulation is a serious issue to the environment	
53. Deforestation is not good for air quality	
54. I have signed 49 M pledges to reduce my electricity usage.	
55. I am aware of the SAVE the RHINOs campaign.	
56. The earth is getting hotter and causing the dramatic changes in weather.	

Demographic measures

1. Age:_____
2. Gender

male		female	

3. Highest level of Education

Below matric	matric(grade 12)	Diploma/degree	post grad studies

4. Income levels

Please check the category which best fits your **total family/household income** after tax in the last year.

_____Under R40, 000 _____ R40, 000 – R80, 000_____ R80, 000 - R160, 000

_____R160, 000 – R320, 000 _____ R320, 000 – R640, 000_____above R1.2 million

5. Where do you stay in Pietermaritzburg?

Rural	Township	CBD	Suburban

6. What is your Ethnic group?

African	White	Indian	Coloured	Other

Appendix 2- Informed Consent Form

School of Management, Information Technology and Governance, Pietermaritzburg

Informed Consent Document

I, Njabulo Happy-Boy Mkhize am currently registered for studies leading to a Masters of Commerce. This approved research project will lead to the submission of a dissertation. The approved topic which I have chosen is: **Pietermaritzburg consumer's awareness, attitudes and purchase decisions with regards to green products.**

The purpose of this research is to gain knowledge on the extent of the 'green gap' amongst Pietermaritzburg residents. It is hoped that this research will ultimately assist both green marketers and other stakeholders in gaining information on the possibility of selling green products to this population.

This study will contribute with decreasing the depletion of the natural environment by contributing in gain knowledge about the green consumers in developing countries.

Please note that this investigation is being conducted in my personal capacity. Should you need to contact me regarding any aspect of this research, you can do so either by e-mail on nhmkhize@gmail.com or telephonically on 0769814279.

My academic supervisor is Prof. Debbie Vigar-Ellis, based in the School of Management, Information Technology and Governance on the Pietermaritzburg campus of the University of KwaZulu-Natal. She can be contacted by e-mail at VigarD@ukzn.ac.za or telephonically at 033 260 5899.

Information gathered in this study will include data retrieved from the questionnaire that I request you to complete. Please note that only summary data will be included in the report and that your name will not be included. Your anonymity and confidentiality is of utmost importance and will be maintained throughout the study.

Your participation in completing the questionnaire is completely voluntary. You also have the right to withdraw at any time during the study.

I appreciate the time and effort it will take you to participate in this study. I would highly appreciate your participation, as it would help me to complete this research project.

This page can be retained by the respondent

Please turn over

This page must accompany the returned questionnaire

Please complete the section below:

I …….. (Full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire

Signature of Participant…….……

Date……..……..

Appendix 3- Permission Letter

UNIVERSITY OF
KWAZULU-NATAL

INYUVESI
YAKWAZULU-NATALI

March 19, 2013

To Whom It May Concern:

PERMISSION TO CONDUCT RESEARCH AS PART OF THE MASTER OF COMMERCE (MARKETING MANAGEMENT) QUALIFICATION

Name: Njabulo Mkhize Student No:207514872

Dissertation Topic: Pietermaritzburg consumer's awareness, attitudes and purchase decisions with regards to green products.

We confirm that the above student is registered at the University of UKZN for the MASTER OF COMMERCE (MARKETING MANAGEMENT) Programme. It is a requirement of their Programme that the student undertakes a practical research project in his/her final year of study.

Typically this project will be a "practical problem solving" exercise, and necessitates data gathering through Questionnaires Only not on employees of the Traffic Department but on the people of the community who come to the Mkondeni Test Driving Centre (MDTC). The questionnaire is not related to the service levels of the MDTC or anything related to the functioning of the Centre.

Your assistance in permitting access to your organization (the CAR PARK and The outside premises of the Mkondeni Test Driving Centre) for purposes of conducting the research is most appreciated. Please be assured that all information gained from the research will be treated with the utmost confidentiality. Furthermore, should you wish any result/s or findings from the research "to be restricted" for an agreed period of time, this can be arranged. The confidentiality of information and anonymity of personnel will be strictly adhered to by the student.

If permission is granted, kindly confirm this by signing off on the following:
"I am aware of the nature and extent of the document and I am satisfied with all the obligations imposed therein."

Please note that additional information or conditions can be supplied by you.

Name in Full: P. PARMANAND
CHIEF PROVINCIAL INSPECTOR

Designation: _____

Company Name & Stamp: _____

26 MAR 2013

Thank you for your assistance in this regard.

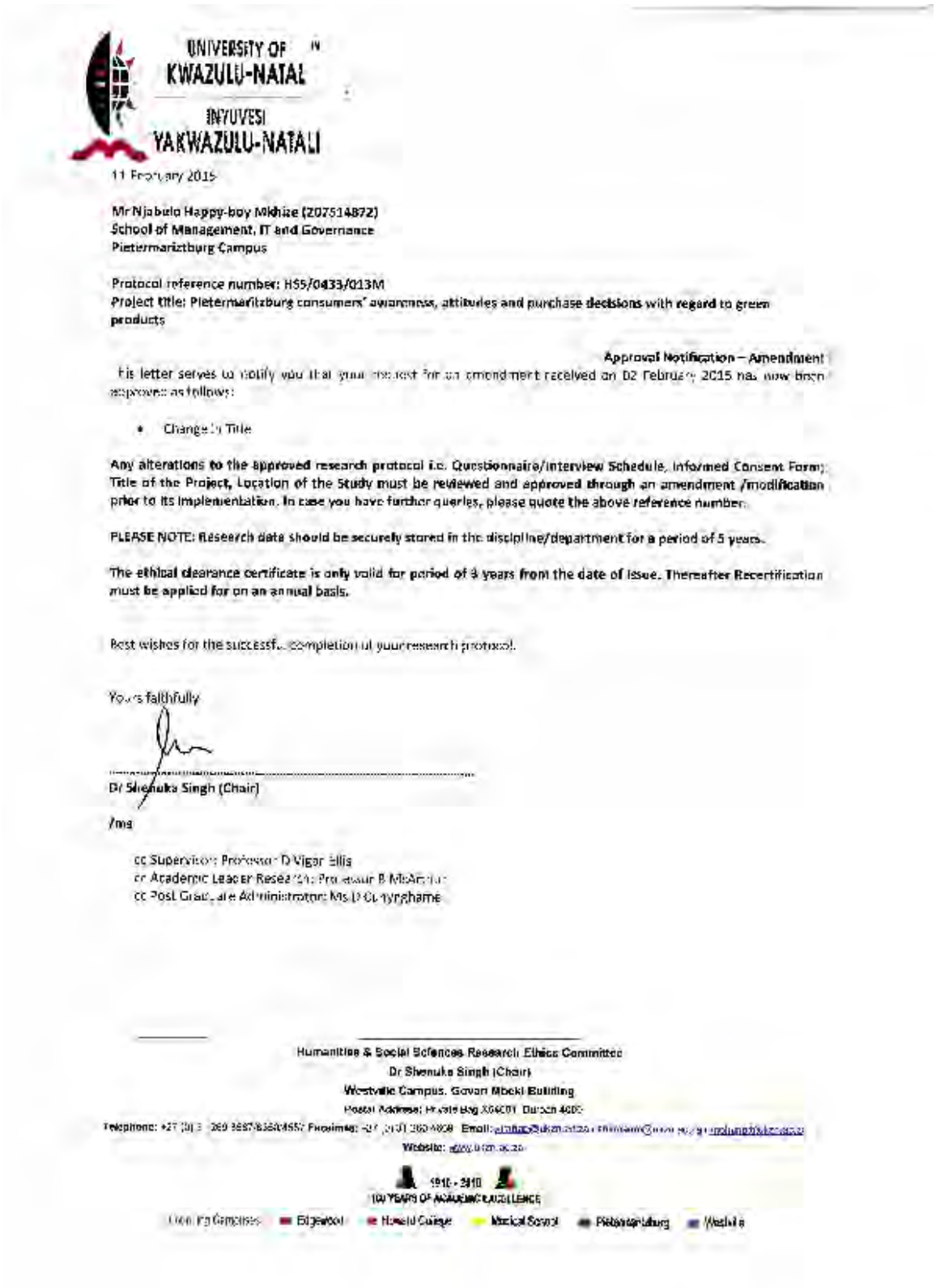
Yours sincerely

Prof. D Ellis Vigar-Ellis

Type title, initials and surname (Supervisor)

06 March 2013 Page 1

Appendix 4- Ethical Clearance



UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

11 February 2015

Mr Njabulo Happy-boy Mkhize (207514872)
School of Management, IT and Governance
Pietermaritzburg Campus

Protocol reference number: HSS/0433/013M
Project title: Pietermaritzburg consumers' awareness, attitudes and purchase decisions with regard to green products

Approval Notification – Amendment

This letter serves to notify you that your request for an amendment received on 02 February 2015 has now been approved as follows:

- Change in Title

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

Best wishes for the successful completion of your research protocol.

Yours faithfully

Dr Shenuka Singh (Chair)

/ms

cc Supervisor: Professor D Vigar-Ellis
cc Academic Leader Research: Professor P Mbatha
cc Post Graduate Administrator: Ms D Chetty/Shame

Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 Facsimile: +27 (0) 31 260 4609 Email: [illegible]
Website: www.ukzn.ac.za

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