UNIVERSITY OF KWAZULU-NATAL

THE EFFECT OF CLIMATE CHANGE ON DURBAN CONSUMERS' BUYING BEHAVIOUR

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DECLARATION

I, Vijay Anand Punchee, declare that

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Abstract

The green market is now one of the biggest markets in the world and green marketing is one of the major trends in modern business. This is a chance for businesses to take advantage of this opportunity by providing environmental solutions whilst at the same time contributing towards reducing the carbon footprint. To effectively achieve this, green manufacturers and marketers need to understand the perceptions, attitudes and behaviours of consumers towards green products and the factors that encourage and discourage their green purchases. Hence this study attempts to understand Durban's consumers in this regard to enable local businesses to develop strategies around green product design, development, marketing and sales. The research objectives and questions were answered by sampling 450 consumers in Durban. A convenience sampling design was used as an appropriate sample frame could not be identified. This imposed a limitation on the study in that the findings cannot be generalized to the total population. The study found that 96% of respondents believed that climate change existed and 87% believed that it was having a major impact on the planet. Nevertheless, environmental issues did not weigh heavily in the buying decisions of the respondents. Instead quality and cost were the main factors. However, the study identified a significant market for green cars whilst a significant number of respondents were willing to pay a premium for green products. Furthermore, the respondents indicated that eco-labeling of products would encourage them to buy more green products. Moreover, the study found that green marketers should target the White female segment of the market as they were most conscious of environmental issues. It was also recommended that the pricing of green products needs to be more competitive, green products need to be promoted as the norm and not the exception, and consumers need to be educated to go green. Government, consumers and industry all need to work together to ensure the sustainability of the planet.

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CHAPTER ONE
Introduction

1.1 Introduction

Consumers are becoming more and more concerned about environmental issues, in particular climate change (Reitmuller & Buttriss, 2009). The ever-increasing media coverage of climate change has also reinforced and perpetuated these concerns (Hannigan, 2006). Several documentaries, such as the Inconvenient Truth by Al Gore have depicted horrific consequences of climate change and global warming (Guggenheim, 2006). This has resulted in a plethora of green products on the market in an attempt to ameliorate our impact on the environment through our consumption. This has provided consumers with a chance to act on their concerns and reduce their carbon footprint. For businesses, green products have become an important social and environmental responsibility, but also a significant business opportunity (Reitmuller & Buttriss, 2009). However, despite the increase in the number of green products, several studies have indicated that there is a significant gap between the environmental concern of consumers and their green buying behaviour (Lee & Holden, 1999; Kilbourne & Beckmann, 2002; Fraj & Martinez, 2007; Moisander, 2007). Accordingly, a major challenge for green marketers is how to persuade consumers to buy green products. To effectively achieve this they need to understand the perceptions, attitudes and behaviours of consumers towards green products and the factors that encourage and discourage their green purchases (Reitmuller & Buttriss, 2009). Hence this study sought to research these behaviours amongst consumers in Durban which will benefit local businesses, government, educational institutions, and consumers.

The Boston Consulting Group (2009) defines “green” as the global catch-phrase for everything good to the environment which according to them has become an

important factor in determining where consumers shop and what they buy. It is used interchangeably with words such as “organic”, “eco-friendly”, and “sustainable” (The Free Online Dictionary, 2012). Fitzpatrick (2012) refers to “green” in the construction industry as sustainable, efficient, healthy, environmentally responsible and cost effective. The term “green” is applied to products, systems and services that save energy, are made from renewable resources, recyclable, all natural, environmentally friendly, durable, low maintenance, reusable, biodegradable, do not contain ozone depleting substances, and obtained from local resources and manufacturers (Conservation Value, 2011). For the purposes of this study, “green” in essence means beneficial to the environment and products that help ameliorate the effects of climate change and global warming.

1.2 Motivation for the Study

Internationally, there are conflicting results regarding consumers’ perceptions and attitudes towards climate change. Further, the green buying behavior of consumers changes from place to place and from time to time. Most importantly, there is no evidence of such a study being done in South Africa, and Durban in particular, which examines consumers’ perceptions of climate change, and their subsequent green buying behaviour. Accordingly, this study will add to the literature from a uniquely South African perspective.

The study will benefit:

- Local businesses by informing new strategies that they could develop with regard to green product design, development, promotion, marketing and sales. It also identifies new business opportunities in terms of identifying significant markets.

- Government by informing policy making and their environmental education campaigns.

- Educational institutions in terms of developing new models, or refining existing ones, to explain the green buying behaviour of consumers. It will also provide suggestions in respect of future research studies that could be undertaken.

- Consumers by informing them of green products and practices they could consume or employ to reduce their carbon footprint.

1.3 Focus of the Study

The focus of this study is on the concepts of climate change, consumer perceptions, green products, green marketing, eco-labeling, and green buying behavior in Durban. Accordingly, the focus of the study was restricted to the responses from consumers within the Durban area only. Future studies could replicate this study but focus on the country as a whole.

1.4 Problem Statement

The green market is now one of the biggest markets in the world and green marketing is one of the major trends in modern business. (Chen & Chai, 2010). This is a chance for businesses to take advantage of this business opportunity by providing environmental solutions whilst at the same time contributing towards reducing our carbon footprint (Reitmuller & Buttriss, 2009). To effectively achieve this, green manufacturers and marketers need to understand the perceptions, attitudes and behaviours of consumers towards green products and the factors that encourage and discourage their green purchases (Reitmuller & Buttriss, 2009). No study has been done in South Africa which looks into consumers' perceptions of climate change, and their subsequent green buying behavior. Hence this study aims to fill this gap in the literature. This study addressed the research problem of determining Durban consumers' perceptions of climate change, their green buying behavior, to what degree climate change and

environmental issues impacted on their buying behavior, and how their purchasing of green products could be increased.

1.5 Research Questions

The study attempted to answer the following research questions:-

- What are the perceptions and attitudes of Durban's consumers toward climate change?
- What has been the response thus far of Durban's consumers towards climate change?
- What is the green buying behavior of Durban's consumers?
- How does climate change and environmental issues impact on their green buying behavior?
- What impact would improved eco-labeling have on consumers' green buying behavior?
- What implications the above have in respect of business?

1.6 Objectives

The objectives of the study:-

- To determine the impact of demographics on consumer green buying behavior.
- To determine the perceptions and attitudes of consumers towards climate change and its impact on them.
- To determine what consumers are willing to do to mitigate climate change.
- To determine the green buying behavior of Durban's consumers and the major factors affecting their buying decisions.
- To determine whether improved labeling of green products will help consumers make more informed green buying decisions and encourage increased green purchases.

1.7 Limitations of the Study

The study is limited with regard to the sampling technique used, namely a convenience sampling design. This was due to an appropriate sampling frame not being identified. Hence, the results of the study cannot be generalized to the total population of Durban consumers.

1.8 Summary

This chapter explained the motivation for this study, as well as the focus of the study. The problem statement was also presented. Furthermore, the objectives and research questions were listed. Moreover, the limitations of the study was also explained. The next chapter will present the literature review relative to the problem statement and the dimensions of this study. This will facilitate the analysis of results and the implications of this study to be discussed in later chapters.

CHAPTER TWO

Literature Review

2.1 Introduction

This chapter briefly discusses climate change, the science relative to the same, its observed effects, the response thus far, and the debate whether it exists or not. Furthermore key concepts such as climate change, green products, green consumers, green marketing and eco-labels are defined. However, the main focus of Chapter Two is on the business risks and opportunities relative to climate change, consumer perceptions of climate change, and consumers' green buying behavior. Moreover the issue of green vehicles and private versus public transport are also discussed.

2.2 Climate Change

Climate change is defined as "statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period" (Houghton, Ding, Griggs, Noguer, van der Linden & Xiaosu, 2001). More recently, the United Nations Framework Convention on Climate Change (UNFCCC) defined climate change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability over comparable time periods" (UNFCCC, 2007, 6). For the purposes of this study this means climate change is the change in the climate attributable to anthropogenic gases, chiefly carbon dioxide. The alleged practical implications of this are warmer temperatures which change rainfall patterns, cause snow and icebergs to melt and adversely affect the regularity and intensity of extreme weather such as hurricanes and heatwaves.

An important part of the UNFCCC definition is that it distinguishes between climate change that is anthropogenic or due to human activities, and on the other hand climate change that is due to natural causes. The debate around this issue will be considered later in this chapter.

The Intergovernmental Panel on Climate Change (IPCC) definition of climate change is slightly different to that of the UNFCCC. The IPCC definition refers “to a change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings, or persistent anthropogenic changes in the composition of the atmosphere or in land use” (IPCC, 2007, 30).

The definitions by both UNFCCC and the IPCC suggests that although climate change is a process that has been present throughout the history of the earth, human activity, and in particular the release of carbon dioxide through such human endeavours, is a major contributing factor to climate change.

2.3 Climate Change Science

At the most basic level, climate change involves anthropogenic or greenhouse gases, rays of the sun, the atmosphere, and the earth as a reflective medium (Mzenda, 2009). The sun’s rays are radiated in short wavelengths. Accordingly, they pass through the atmosphere with very little absorption, except for the ultraviolet part which is absorbed by the ozone layer. Thus solar radiation is absorbed and heats only the earth, and the oceans. The earth and the oceans in turn emit radiation back into the atmosphere in longer wavelengths. This is known as longwave radiation (Parry et al, 2007). In the atmosphere, certain gases, such as water vapour and carbon dioxide, absorb the longwave radiation, and thus maintain an annual global surface temperature of about 14 to 15 degrees Celsius. As this is very much like growing plants in a greenhouse, this is

commonly referred to as the greenhouse effect and gases such as carbon dioxide, water vapour, methane, ozone and nitrous oxide are all referred to as greenhouse gases (GHG's) (Khandekar, Murthy & Chittibabu, 2005). Without this natural greenhouse effect, it is estimated that the earth's annual average surface temperature would be about -18 to -19 degrees Celsius. Accordingly, the natural greenhouse effect is estimated to contribute 33 degrees Celsius to the earth's annual average surface temperature (Khandekar, Murthy & Chittibabu, 2005).

However, gases released from human activities have greatly amplified the natural greenhouse effect alluded to above (World Bank, 2010). The global average atmospheric carbon dioxide concentration has increased significantly over the past 50 years mainly due to the burning of carbon-based fossil fuels, deforestation and changes in land use (World Bank, 2010). It is claimed that the burning of coal, oil, and natural gas contributes about 80% of the carbon dioxide released into the atmosphere per annum, with deforestation and changes in land use accounting for the other 20% (WMO, 2008). According to Karl, Melillo & Peterson (2009) temperatures today are already 0.8 degrees Celsius above pre-industrial levels. Furthermore, it is suggested that in the absence of the cooling effect of reflective particles, such as sulphate and aerosols, and the long time it takes ocean temperatures to come into balance with the infrared radiation, the increase in temperature would already be about 1 degree Celsius warmer than it is today. Thus it is argued that the current increased levels of greenhouse gases by itself is close to causing the globe to heat by 2 degrees Celsius. Beyond this level it is anticipated that the world will experience volatile and disruptive consequences (Adger, et al, 2008).

2.4 Observed Effects of Climate Change

The effects of climate change are evident in the higher average air and ocean temperatures, the increased melting of snow and ice, especially in Greenland and the Arctic, and the increase in sea levels (Mote, 2007). Moreover, both floods and droughts have been observed to be happening more often

(Millennium Ecosystem Assessment, 2005). In addition, Webster, et al (2005) reported that globally precipitation has increased as the water cycle has been expedited by the increased temperatures. They also claim that heavy rainfall and floods have become more regular and there is evidence that the intensity of storms and tropical cyclones have heightened. Furthermore, changes are anticipated in ecosystems as climate change impacts on the ideal location of plant and animal species. Productivity of agriculture, forests and fisheries, and other ecological services are also expected to be adversely impacted upon (Allison et al, 2005). In this regard, Parry et al (2007) reported that already 20 000 datasets showed that many species of animals were already moving at an average of six kilometers per decade towards the poles or six kilometers per decade up mountains where it was cooler. These fast changes are impacting on well-established predator-prey relationships and thus food sources.

As regards future effects, if the temperature increases by more than 2 degrees Celsius, there will be increased stress on ecosystems and their possible collapse, loss of biodiversity, change in time of growing seasons, coastal erosion, permafrost thaw, ocean acidification, and new ranges of pests and diseases (Brewer & Peltzer, 2009). Further, Karl, Melillo & Peterson (2009) suggest that in this warmer weather most coral reefs would die and that certain crops, such as cereal, would not be successfully grown in certain regions of the world. Parry et al (2007) suggest that about 25% of all plants and animals could face increased risks of extinction. They also forecast that communities will suffer greater heat stress and that coastal areas will be flooded more often.

2.5 The Debate

Presently the only consensus on climate change is that there is no consensus. Up to now the consensus view on climate change has been based on the seminal 2007 United Nations' Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report. This Report justified the need to reduce carbon dioxide and other greenhouse gases (GHG's) created anthropogenically

(man-induced). However, several sceptics have criticised the scientific basis of climate change and the accuracy of reports supporting climate change, its existence, and that it is human-induced. The main points of disagreement are: Does climate change exist? Are people responsible for the warming trend? What impact will more warming have on the planet? Can anything be done about it?

2.6 The Response Thus Far

The UNFCCC treaty was signed in 1992 (UNFCCC, 2009). The objective of the UNFCCC is to "achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (Scholze et al, 2006, 6). Further, in 1997 an addition to the UNFCCC treaty was signed called the Kyoto Protocol which is more powerful as it has more legally binding measures (UNFCCC, 2009). The Kyoto Protocol resulted in global agreement on the need to monitor, limit and reduce climate change by focusing on the anthropogenic gases. Importantly, the USA has to date not signed the agreement. The Protocol utilizes emission reduction targets, emission caps, regulations and market mechanisms, the clean development mechanism, and the establishment of a carbon trading market to achieve its objectives (UNFCCC, 2009). Accordingly, some of the initiatives related to climate change to encourage companies to limit their carbon emissions include, inter alia: the Clean Development Mechanism programme with its 1 693 projects (UNFCCC, 2009), a more demanding USA climate change policy under the new administration (Obama, 2008), greater influence of NGO's on climate change issues (Gardiner, 2009), annual carbon emission disclosures (CDP, 2009), and the introduction of climate change strategies and policies by many countries, including South Africa (DEAT, 2009).

The strategy arising from international negotiations is two-fold (Nussbaumer, 2006). On the one hand, there are mitigation efforts. Mitigation refers to reducing climate change through human actions to reduce the sources of GHG's (Vordzorgbe, 2007). Hence it improves long-term climate patterns by reducing

the adverse impact of climate change. This approach is favoured by the supporters of climate change. On the other hand there are adaptation efforts. Adaptation refers to changes in ecological, economic and social systems to accommodate actual or anticipated climatic phenomena and their impacts. Accordingly, it reduces the negative impact of climate change by decreasing the risk to climatic phenomena through a variety of actions (Vordzorgbe, 2007). This approach is favoured by the sceptics of climate change.

2.7 Green Products

Green products are also known as ecological products or environmentally friendly products (Chen & Chai, 2010). There are no legal guidelines or strict definitions of the term “green product” and thus it is open to interpretation. Shamdasani et al (1993) defined a green product as a product that would not pollute the planet, use up too much natural resources, and could be recycled and conserved. Wasik (1996) defined green products as products that incorporate recycling strategies, are made of recycled materials, has reduced packaging, or uses less toxic materials, thus reducing its impact on the environment. Most studies (Eurostat, 2009; American Solar Energy Society, 2009; and Global Insight, 2008) use the concepts of energy efficiency, renewable or clean energy sources, natural, non-toxic, recycled, biodegradable, available locally and protection of the environment in defining green products. For example, a cleaning product could be considered green for two reasons, namely, it may be manufactured without phosphates thus reducing the source of pollution in the water supply, and it may contain natural ingredients thus lowering the risk of health problems that could be caused by skin being exposed to artificial dyes.

2.8 Green Consumers

Consumers who are aware of environmental issues and have translated their environmental concerns into purchasing green products are called green consumers (Soonthonsmai, 2007). D’Souza (2004, 179) defines the green consumer as “…those consumers that are highly environmentally

concerned…characterised as buying green products whenever they see an opportunity to do so." Peattie (2001) defines a green consumer as an individual who voluntarily pays for goods and services that are regarded as environmentally friendly by marketers and academics. Such broad definitions dominate the literature and will also be adopted for the purposes of this study as "green" means "pro-environment" in this study. However, there is little consensus regarding the nature and identity of green consumers (Peattie, 2001).

2.9 Green Marketing

There are various definitions of green marketing. A review of the literature shows that the terms "green marketing" and "environmental marketing" are used interchangeably (Hartono, 2008). Soonthonsmai (2007) defined green marketing as activities undertaken by companies that relate to green problems or the environment by producing environmentally friendly products and services that results in consumer satisfaction. Welford (2000) defined green marketing as a holistic strategic management process that identifies, anticipates and fulfills the needs of consumers in a profitable and sustainable manner.

Green marketing faces several challenges, in particular, erratic demand, negative consumer perception, and high cost (Gurau & Ranchhod, 2005). Thus the main concern relates to the understanding of green consumers and their characteristics to enable businesses to develop new target and segmentation strategies (D'Souza et al, 2007).

The environment and ethical and green behaviours are the focus of much discussion today (Rex, 2009). Accordingly, today's marketers are continuously working towards increasing the consumption of green goods and services to gain a competitive advantage (Rex, 2009). Hence, it has been recognized that there is a need for more research to better understand the willingness of today's consumers to purchase green goods and services to pay more for such products

(Schaefer, 2005). Thus providing an incentive for marketers to offer such products (Schaefer, 2005).

2.10 Eco-Labels

Eco-labels are defined as a label that reflects the green attributes of a product or service, especially in comparison with other products and services within the specific range of products and services concerned (Landua, 2008). An eco-label has to consist of three components, namely, the certification standard, an independent accreditation body, and independent certification bodies (Landua, 2008). Its main purposes are to differentiate green products so that they are more easily identifiable and allow consumers to make informed choices that would reduce their individual carbon footprint. Such information could be very effective in encouraging positive environmental change (Tietenberg, 1998). Research indicates that eco-labeling with the appropriate accreditation and certification procedures is a driver for increasing the purchases of green products (Green labeling, 2007). The key success factor is that the eco-label must be understood and trusted by the consumer (Rex & Baumann, 2006). Despite many consumers being willing to pay a premium for green products, the percentage of such products being purchased is still low due to the sceptism to wards products that claim to be green (Landua, 2008). Hence eco-labels should avoid greenwashing at all costs.

2.11 Risks & Opportunities

The risks include, inter alia, business models that are inefficient, industrial processes products that are not competitive, an energy market that constantly changes, lack of shareholder and investor support, significant fines and penalties for any damage caused to the environment, adverse impact on the reputation of the company amongst its customer base, increased insurance costs, and the envisaged physical impacts of climate change (Southworth, 2009). Furthermore, Cogan (2008) categorizes climate change risks into physical, competitive and regulatory risks. Cogan further provides that the business risks from climate

change include: increasingly volatile weather; rising sea levels; new health issues; impacts on insurance markets; impact on business resources; lack of preparedness for the changes due to climate change; increased compliance with new laws and regulations; and greater activism by shareholders, customers, and the public in general. However, climate change has also created new opportunities for business. This includes involvement in carbon trading markets, developing cleaner energy technologies and products, and improved reputations (Bernstein et al, 2007). Furthermore, Southworth (2009) provides that the opportunities also include: increased profits due to improved efficiencies and alternative energy supply; lower dependence on petroleum and an energy market that is more reliable; improved shareholder and investor confidence; preparedness in terms of the physical impact of climate change; enhanced reputation; access to new markets; decreased insurance costs; and preparing for the implementation of new legislation.

Lash and Wellington (2007) suggest that companies should ask themselves the following questions in terms of identifying potential revenue and cost drivers:-

- How will changes in customer demand pattern affect pricing?
- What percentage of climate-related costs will the business be able to pass through to customers?
- How can the business generate streams of revenue from new carbon-low products?
- What new forms of income will become available (for example carbon credits)?
- What threats does the business face from low-carbon substitute products?
- What will be the impact of weather patterns on revenue?
- How will regulatory policy affect its costs?
- Will emissions be taxed?
- What capital costs does the business face due to emissions-reduction plans? How will its raw materials costs be affected?
- By how much will its energy costs increase?

- How will its risk profile affect insurance premiums?

In summary, every business needs to outperform its competitors in two areas, namely, reducing exposure to climate-related risks and finding business opportunities within such risks.

2.12 Consumer Perceptions of Climate Change

Perception is our ability to make sense of reality from the external sensory stimuli to which we are exposed (Flamand, 2010). Several factors can influence our perception. For example, continued exposure to a particular stimulus can either make us oversensitive or desensitized to it. Furthermore, the amount of attention we give to any issue can cause a change in our perception of same (Flamand, 2010). However, recent research provides mixed and conflicting results regarding consumers' perceptions of climate change. This, in particular, does not help business, scientists or policymakers, as they all require such information to make decisions regarding marketing, opportunities, new product development, initiatives to address climate change, and/or policymaking.

The Eurobarometer study undertaken by the TNS Opinion and Social (2009) on behalf of the European Commission found that when respondent's were asked what they considered to be the most serious problems the world faces, 69% thought that "poverty, the lack of food and drinking water" was the most serious problem. Ranked second was "climate change" with 47%, and ranked third was "a major global economic downturn" with 39%. However, whilst climate change was a comfortable second, this represented a drop of 15% from 62% in April 2008 to 47% in September 2009.

The Greendex survey on consumer choice and the environment by National Geographic and Globescan (2010) found that the countries that showed an increase in environmentally sustainable behaviour were the Indians, Russians and Americans. Environmentally sustainable behaviour among average consumers in India, China, Mexico, Russia, Hungary, Japan, Great Britain, and

Canada had increased steadily each year. In contrast, consumers in Germany, Spain, Sweden, France and South Korea had slipped a little. The main reason for the increase in the Greendex scores was due to more sustainable behaviour in the housing sector.

A survey undertaken by Angus Reid Public Opinion on a quarterly basis in Britain, Canada and USA found in September 2010 that the level of uncertainty Britons expressed in early 2010 towards climate change had subsided as more Britons (47%) in September 2010 regarded climate change as a fact. The survey also showed that Canadians still led the way in the belief that climate change was caused by carbon emissions. Overall 60% of Canadians believed that climate change was a fact and was caused by emissions from vehicles and industrial facilities. However, the survey found that Americans remained sceptical of climate change with only 42% believing that climate change was a fact.

As regards South Africa, there has been very little research done in this regard. Notwithstanding the paucity of research, reactions have still been mixed. The Gallup Poll (2007/2008) found that only 31% of South Africans knew something about climate change, only 29% believed that climate change was caused by human activity, and a mere 21% believed that climate change posed a personal threat to them. In contrast, a survey undertaken by TNS Research (Angus Reid Global Monitor, 2008) found that 70% of South Africans believed that climate change was already having a big effect on the world's weather whilst 16% were unsure. However, the worldwide climate consciousness survey by GlobeScan (2008) found that South Africa ranked with America and China at the bottom of the poll as only 45% of South Africa considered climate change to be a serious problem.

The annual Gallup Social Series Environment poll (2010) on American's attitude to the environment started the so-callled "battle of the pollsters". The poll found that over the previous two years American's had become less worried about the

threat of climate change, less convinced that its effects were already taking place, but believed more that scientists were uncertain about climate change occurrence. The poll found that 48% of Americans believed that climate change was exaggerated, up from 41% in 2009, and 31% in 1997. The number of American's that believed that climate change was going to affect them personally dropped to 32% from 40% in 2008. Further, 67% of Americans believed that climate change would not affect them in their lifetime. Moreover, Americans were split on the cause of climate change, 50% believed that it was due to human activities whilst 46% believed that it was due to natural causes. In addition, 36% of Americans believed that scientists were unsure of whether climate change was occurring whilst a further 10% thought that scientists believed that climate change was not occurring.

In support of the Gallup poll, the study undertaken by the Pew Research Center (2009) found that fewer Americans saw solid evidence of climate change. This decreased by 14% from 71% in April 2008 to 57% in October 2009. With regards the seriousness of climate change as a problem 35% indicated that they considered it to be very serious which is a drop of 9% from 44% in April 2008. Furthermore, the CNN poll (2009) undertaken by Opinion Research Corporation found that in December 2009 only 45% of adult Americans, down from 54% in June 2008, believed that climate change was a proven fact and it was mostly caused by emissions from cars and industrial facilities such as power plants and factories. More recently, the Rasmussen Report survey (2010) undertaken by Pulse Opinion Research found that 61% of voters saw climate change at least as a somewhat serious problem, with 34% saying that it was a very serious problem. These findings steadily dropped from November 2009 to November 2010 when the "Climategate" scandal broke. Further, only 38% of voters thought that climate change was caused by human activity, whilst 45% believed that it was caused by long term planetary trends. Interestingly, a higher percentage of voters consistently blamed global warming on planetary trends rather than human activity since February 2009.

However, one of the strongest supporters of climate change is Krosnick (senior fellow at the Woods Institute for the Environment at Stanford University). His findings contradict the findings of the aforementioned studies. Krosnick's (2010) latest poll confirmed the trend of his previous polls that belief in man-made climate change, and action to address it, remains strong. The latest poll (2010) found that 81% of the residents of Florida, Maine and Massachusetts believed that the earth had been getting warmer slowly over the past 100 years. Further, it found that 76% of the residents believed that the warming was mostly or partly due to human activity. This is supported by the survey undertaken by Yale and Mason Universities (2010) on public concern about climate change which found that public belief that climate change was occurring rose to 61% in June 2010 from 57% in January 2010. Further, 50% of Americans now believed that climate change was human-induced which is up 3% from January 2010. In addition, a study undertaken by Havas Media (2008) across nine countries relating to consumer perceptions of climate change and its potential impact on business, found that consumers clearly recognized that climate change and global warming were here to stay and represented a major, if not the major, challenge of our generation. The study found that 78% of the respondents had a well developed awareness of climate change. Moreover, 77% of respondents accepted that climate change was going to have a direct and personal effect on them and their families, whilst 74% of respondents felt that they could actively contribute to solving the problem.

From the aforegoing, it is clear that there is no consensus regarding the perceptions of consumers regarding climate change. It changes from region to region, and from time to time.

2.13 The Buying Decision Process

Kotler, Keller, Koshy & Jha (2009) describe a five-stage model to explain the buying decision process of consumers. Consumers do not go through all five

stages of the decision making process. They may skip a stage/s depending on the complexity, importance and financial impact of the purchase.

The first stage is problem recognition where the consumer recognizes a problem or need (Kotler et al, 2009). The need could be driven by an internal or external stimulus (Wellner, 2001). With an internal stimulus, the consumer's normal need, such as water, security and shelter, rises to such a level that it drives the purchase (Wellner, 2001). Alternatively, an external stimulus, such as admiring a work colleague's green car, may result in the consumer thinking about making such a purchase too (Wellner, 2001). Accordingly, marketers need to know what instigates and drives a particular need by researching their target consumers and emanating from such information, develop marketing strategies that encourage consumer interest (Russo & Carlson, 2002). This is especially relevant to discretionary purchases, such as green products and holidays, where marketers need to heighten the motivation to ensure that green products are given greater consideration (Russo & Carlson, 2002).

The second stage is where the consumer searches for information to help inform their buying decision (Kotler et al, 2009). Sources of information include personal (family and friends), commercial (internet and advertisements), public (media and consumer rating companies), and experiential (test-driving and utilizing the product) sources (Putsis & Srinivasan, 1994). Accordingly, the search maybe internal (search their memories for information) or external (seek information from outside sources) (Putsis & Srinivasan, 1994).

The next stage is where the alternatives are evaluated (Kotler et al, 2009). This is done by processing competitive brand information and making a value judgment (Shapiro, Rangan & Sviokla, 1992). The consideration set is a group of brands that the buyer views as alternatives for possible purchase (Shapiro, Rangan & Sviokla, 1992). There are various processes used by different consumers, but most models are based on a logical and conscious choice being made by the

consumer (Heilman, Bowman & Wright, 2000). Consumers rate more highly products that possess the attributes to meet their needs (Heilman, Bowman & Wright, 2000). For example, the choice of a car will be dependent on whether luxury, fuel efficiency, or performance, is the most important attribute that the buyer is looking for.

The penultimate stage is the purchase decision (Kotler et al, 2009). In the previous stage, the consumer created preferences among the brands available. This stage involves the choosing of the product or brand to be bought based on the evaluation stage (Kotler et al, 2009). The intention to buy the most preferred brand entails five smaller decisions being made: which brand to buy, which shop to buy from, quantity, timing (when to purchase), and payment method (cash or card) (Wigder, 2007). Product knowledge, number of brand choices, differences amongst brands, time pressure, terms of sale, price, delivery, warranties, and social pressures may affect the five decisions referred to above (Wigder, 2007). However, even if there is the intention to purchase a product, it does not necessarily result in the product being purchased (Kotler et al, 2009). Factors, such as the negative attitude of others, and more urgent issues that arise, may persuade the buyer to postpone or change the buying decision (Kotler et al, 2009). Hence, preferences and purchase intentions are not reliable indicators of purchase behavior (Kotler et al, 2009). Moreover, the consumer may consider a purchase to be too risky resulting in the purchase being postponed or avoided. Some of the risks that consumers may consider are: functional (does not perform to expectation), physical (poses a health risk), financial (no value-for-money), social (results in embarrassment), psychological (affects the mental health of user), and time (opportunity cost of finding a replacement product if the product fails) (Hudadoff, 2009). Marketers must appreciate the factors that instill a feeling of risk in consumers.

The final stage relates to post purchase behavior (Kotler et al, 2009). Following the purchase, the consumer generally feels some regret and doubts whether the

decision was the right one, especially if the product does not function as expected or if newer and better products enter the market (Solomon, 2007). Accordingly, the consumer will look for information to affirm their decision, particularly if it was an expensive or high-involvement product (Oliver, 2006). Hence, marketing communications must reinforce the consumer's choice and confidence in the brand. The marketer must get involved in post-purchase satisfactions, actions, and product uses and disposal (Solomon, 2007).

This is not the only model relative to the buying decision process of consumers. There are several other models, but this is the aforementioned model is the most widely used.

Young, Hwang, McDonald & Oates (2010) have developed a similar five-step/element green consumer purchasing model. The first element of their model is the consumer's green values. This frames the purchase in terms of the motivation to pursue the green criteria. It is influenced by the consumer's knowledge of the relevant issues, as well as how previous purchase experiences influenced them (Young et al, 2010).

The second element is choosing the green criteria for that particular purchase. There are only a few criteria, such as a high energy efficiency rating for electrical appliances). Once the consumer has decided to investigate the product in question, primary and secondary criteria are formed from research relative to the ethics of the product and manufacturer, talking to friends and family, speaking to salespersons, or browsing the internet (Young et al, 2010).

The next element is barriers and facilitative factors that influence the green consumer during the whole purchase process. Primary green criteria are usually unchangeable during the purchase process, but secondary green criteria are discarded if there are strong barriers. On the other hand, facilitative factors act as affirmation factors during the whole purchase process (Young et al, 2010).

The penultimate element is the making of the purchase by the green consumer. This purchase is different each time depending on the factors influencing it (Young et al, 2010).

The final element is feedback where the purchase experience and knowledge gained from each purchase process are fed back into the consumer's general green values and knowledge which influences the next purchase. Hence the model is cyclical (Young et al, 2010).

Every time a buyer makes a decision about whether or not to purchase a green product or service, there is the potential for that decision to contribute to a more or less sustainable pattern of consumption. Each purchase has ethical, resource, waste and community implications. When individuals consider the adoption of green lifestyles, they engage with an increasingly complex decision-making process (Young et al, 2010). These everyday decisions on practical green solutions often result in trade-offs between conflicting issues and result in a "motivational and practical complexity of green consumption (Moisander, 2007, 404).

Dobson (2007) argues that green behaviour change driven by environmental concern is more likely to last than behaviour driven by financial incentives. Evidence from Sheth, Newman & Gross (1991) supports this assertion by concluding that consumption values explain why consumers choose to buy, or not buy, a particular product or service. These values are part of the criteria in the green buying decision process. Such values include functional, emotional, cognitive, social and conditional values (Sheth, et al., 1991).

It is also important to mention the so called 'attitude-behaviour gap' or 'values-action gap'. Evidence of this gap is illustrated by Hughner, McDonagh, Prothero, Schultz & Stanton (2007) who show that notwithstanding the favourable attitudes

consumers have towards organic foods (46%-67%), only 4%-10% of these consumers actually purchased organic foods. Moreover, evidence provides that market share for green foods remained at 5% of total food sales for the previous three years (Co-operative Bank, 2007).

Analysing why green values have a weaker influence on the decision making process when actually purchasing a product is vital in understanding and changing consumer behaviour towards green consumption. According to Biel & Dahlstrand (2005), Sener & Hazer (2008) and Wheale & Hinton (2007), this could be due to brand strength, culture, demographic characteristics, finance, habit, lack of information, lifestyles, personalities, or trading off between ethical factors.

2.14 Green Consumer Buying Behaviour

Consumer buying behaviour is defined as “The study of individuals, groups, or organizations and the processes they use to select secure, use, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes have on the consumer and society” (Hawkins, Best, & Coney, 2001, 7). In other words, it is the study of when, why, how and where people buy a product or service. It endeavours to understand the buyer decision making process. More specifically, green buying behaviour is the consumption of products that are beneficial to the environment, conservable, and recyclable (Mostafa, 2007). In other words, buying behaviour is sensitive to ecological concerns.

A study undertaken by the Policy Studies Institute (2006) with regard to consumer behaviour relating to the purchasing of environmentally preferable goods made the following findings:

- **Consumers rarely weigh up all the costs and benefits of choices**. Instead their buying decisions may be made automatically, habitually, or be heavily influenced by their emotions or the behaviour of others.

- **Consumers use mental short-cuts to help speed up the decision-making** which can distort their decisions. Such short cuts can include relying on labels or brand names that are recognized, and being influenced by the way in which the information is presented.
- **Consumers respond more to losses than gains**. This means that people are more reluctant to give something up or suffer loss than they are motivated by benefits of equal value. This aversion to loss has a significant impact on the way in which people interpret information and can lead to consumers avoiding making green choices altogether.
- **Consumers value products much more once they own them**. In addition, the value placed on a product is inconsistent.
- **Consumers place a greater value on the immediate future** and heavily discount future savings. This impacts on the way in which consumers value the efficiency and lifetime costs of appliances.
- **Too much choice can be overwhelming to consumers**, making decision-making difficult. As choices increase, consumers may consider fewer choices, process less information overall and evaluate such information differently.
- **Consumers are heavily influenced by other people**. This might include indirect influence, such as seeing a neighbour buy the product, or more direct or explicit influence, such as when a salesperson persuades a customer to buy a certain product.
- **Consumers use products to make a statement about themselves**. Products meet far more than just a functional need. They make a statement about a person's identity and about the type of person they are and would like to be.

Debate on the environment, including ethical, sustainable and green behaviour is the focus of much discussion today. Accordingly, today's marketers are continually working towards increasing consumption and gaining competitive advantage, especially with regard to sustainability and the environment (Rex,

2008). The proliferation of sustainable products, designed to minimize their environmental impact, provides an opportunity for consumers to act on their environmental concerns and reduce their ecological footprint (Riethmuller & Buttriss, 2008). For businesses offering sustainable products, it is becoming a major social and environmental initiative, as well as a huge commercial opportunity in today's marketplace (Rietmuller & Buttriss, 2008). However, notwithstanding the growth in the green market, several studies (Hines et al, 1986; Lee and Holden, 1999; Kilbourne & Beckmann, 2002; Fraj & Martinez, 2007; Moisander, 2007) have highlighted the significant gap between the environmental concern of consumers and their subsequent pro-environmental purchasing behaviour. Thus the willingness of today's consumers to pay more for green products is a key issue for marketers as to whether they offer such products (Schaefer, 2005).

Belch & Belch (2003) identified some key consumer behaviour questions that green marketers should ask:

- Who buys our green goods or services?
- Who makes the decision to buy the green product?
- Who influences the decision to buy the green product?
- How is the green purchase decision made?
- What green products do the customers buy?
- What needs must be satisfied?
- Where do they go to acquire green goods and services?
- When do they buy green products – any seasonality factors?
- How are our green products perceived by customers?
- What are consumers' attitudes towards our green products?
- What social factors may impact on the green purchase decision?
- Do customers' lifestyles influence their green buying decisions?
- How do demographic factors influence the green purchasing decision?

Laroche et al (2001) described green consumers in terms of their willingness to pay more for groceries. They segmented consumers into three categories: consumers who were willing to pay a higher price for green products; consumers who were not willing to pay a higher price for green products; and undecided consumers. Frame (2004) segmented customers according to how considerate they were of the environment.

Whether today's consumers adopt sustainable behaviours requires an understanding of their attitudes, demographics, values and behaviours (Rex, 2008). For example, Carrigan, Szmigin & Wright (2004) suggested that age is an important factor in environmental ethics and behaviour. Collins, Steg & Koning (2007) argued that values are an important factor as they affect people, behaviour and events. Spaargaren (2003) found that the lifestyle of individuals was relevant to their green buying behaviour as people were generally not willing to give up their quality of life. Routhe, Jones & Feldman (2005) and Frame (2004) focused on values such as "environmental concern" and "green" consumers who were thought to be motivated by environmental values and attitudes.

There are several cultural, social, personal, and psychological factors influencing consumer behaviour (Kotler et al, 2009).

Cultural factors include culture, subculture and social class (Kotler et al, 2009). Culture is the main determinant of an individual's needs and behaviours (Grier, Brumbaugh & Thornton, 2006). Whilst growing up a person acquires a set of values, perceptions, preferences and behaviours through their family and other key institutions (Grier, Brumbaugh & Thornton, 2006). Social classes show distinct product and brand preferences for products such as clothes, furniture, and cars. Social classes also differ in terms of media preferences (Grier, Brumbaugh & Thornton, 2006).

Social factors include reference groups, family and social roles and statuses (Kotler et al, 2009). Reference groups have a direct (membership group) or indirect influence on consumer behaviour (Power, 2006). Where the reference group influence is strong, marketers must determine how to reach and influence the group's opinion leader who is the person who offers informal advice about a particular product or brand (Power, 2006). Family members also influence buying decisions (Conlin, 2003). In this regard, research has focused on the husband, wife or child dominating decision-making, or that there is joint decision making (Conlin, 2003).

Personal factors include age, occupation and economic circumstances, personality and self-concept, and lifestyle and values (Kotler et al, 2009). Preferences in respect food, clothing, and sports, change as one's age changes. Trends such as marrying later in life, young professionals emigrating, and professionals now acquiring cars and houses much earlier in their careers, has resulted in new opportunities for marketers at different stages in the consumer life cycle (Aaker, Benet-Martinez & Garolera, 2001). Occupation also affects consumption patterns. A blue collar worker will buy work clothes, shoes and lunch boxes, whereas a chief executive officer will buy suits, air travel tickets, and golf club membership (Sung & Tinkham, 2005). Product choice is srongly influenced by economic circumstances, spendable income, savings, assets, debt, and borrowing ability (Sung & Tinkham, 2005). Hence marketers try to identify the occupational groups that have above-average interest in their goods and services and even target certain occupational groups (Carotese, 2003). Moreover, if there is a change in the economic situation, such as an impending recession, marketers can take steps to redesign, reposition, and reprice their products (Cortese, 2003). In addition, each individual's personality traits (such as self-confidence, dominance, independence, sociability and adaptability) influence their buying behaviour (Cortese, 2003). This could be a useful variable in analyzing consumer brand choices. The rationale is that brands also have personalities and consumers are prone to select brands whose personalities

closely match their own (Graeff, 1997). Finally, the consumer's living pattern, interests, opinions, and values also influence consumption (Banco & Zellner, 2003). Lifestyles are in part influenced by whether consumers are money or time-constrained. Companies will aim lower-cost products and services at money-constrained consumers and convenience products and services will be aimed at time-constrained consumers to free up time for them as time is more important than money to them patterns (Banco & Zellner, 2003). Consumer buying-decisions are also influenced by values and beliefs that underpin attitudes and behaviours patterns (Banco & Zellner, 2003). Accordingly, marketers believe that if they can target a consumer's inner values and beliefs they can influence their outer actions (buying behaviour).

To sell green products, marketers must understand how people are motivated to buy green products. Psychological factors in general determine peoples' behaviours, and hence their buying behaviour. Such factors include motivation, perception, learning, and memory (Kotler et al, 2009). Everyone has certain needs at any given point in time. A need becomes a motive when it grows to such a level of intensity that it drives one to act (Wells, 2003). There are several theories of human motivation, but the most well known are those of Sigmund Freud (psychological forces shaping a person's behaviour are in the main unconscious), Abraham Maslow (hierarchy of needs whereby a person will satisfy the basic needs before other needs) and Frederick Herzberg (factors that cause satisfaction must be present to motivate a purchase) (Kotler et al, 2009). A motivated person is ready to act (Janiszewski & Osselar, 2000). However, how the person acts is influenced by their view of the situation (in other words, their perception) (Janiszewski & Osselar, 2000). In marketing, perceptions are more important than the reality, because perceptions affect consumers' actual buying behaviour (Bargh & Chartrand, 1999). When we act, we learn. Learning causes changes in our behaviours which we gain from experience (Kotler et al, 2009). All our learning ends up in our long-term memory which is retrieved when a decision

needs to be made (Wyer & Srull, 1989). A strong brand association is more accessible and more easily recalled (Braun, 1999).

According to Young, et al (2010) the key factors that will help green consumers purchase green technological products are:

- The consumer's green value is strong
- The consumer has purchase experience
- The consumer has plenty of time for research and decision making
- The consumer has good knowledge of the relevant environmental issues
- Green products are reasonably available
- The consumer can afford, and is prepared for, the financial costs

There are several models of consumer behaviour. Some focus on more external factors like incentives, norms and institutions whilst some focus on internal aspects like values, attitudes and intentions. Accordingly, consumer behaviour requires a view which incorporates both internal and external elements. Stern (2000) developed a useful model that accounted for the following factors:

- motivations, attitudes and values;
- contextual or situational factors;
- social influences;
- personal capabilities; and
- habits

Faiers, Cook and Neame (2007) also produced a categorization of consumer behaviour theories that relate to factors influencing consumer choices in respect of energy use. The factors were:

- consumer choice
- needs, values, attitudes,
- learning
- social learning
- buying process

- categorization of consumers
- product attributes and categorisation

Haakonsen (2011) identified five key factors influencing an individual's purchasing intention when making green buying decisions:

- Their attitude towards the effects of the specific buying decision.
- The influence that others in the social environment of the consumer exert on the buying decision.
- The perceived lack of control over obstacles in the buying process, such as lack of availability.
- A feeling of ethical obligation.
- The effects of the green consumer's self-identity (or in this case environmental identity).

The study of green purchase behaviour and the factors influencing it have been investigated in prior research, such as Lee (2008), Chan & Lau (2000) and D'Souza et al (2006). For example, Lee (2008) in her study on young Hong Kong consumers' green purchase behaviour used seven variables: environmental attitude, environmental concern, perceived seriousness of environmental problems, perceived environmental responsibility, perceived effectiveness of environmental behavior, concern for self-image in environmental protection and social influence. On the other hand, Laroche et al. (2001) in their study to identify target consumers who were willing to pay more for environmentally friendly products used different variables, namely, demographics, values, knowledge (eco-literacy), attitude (such as severity of environmental problem) and behaviors (such as considering environmental issue when making a purchase). Furthermore, Paco and Raposo (2009) in their study on green segmentation of the Portuguese consumer market, used variables such as concern, affect, commitment, ecological consciousness, subjective norms, activism, environmentally friendly behavior, green products buying behavior, information search, willingness to pay, recycling and scepticism towards environmental

claims. Moreover, D'Souza et al. (2006) in their empirical investigation of the influences of multiple factors on the green purchase intentions of customers in Australia investigated the impact of six variables on the green buying behaviour of consumers, namely, corporate perception, product labels, product dimension, environmental regulation, customers' past experience, price and quality perception.

As regards the influence of ecological knowledge on the green buying behaviour of consumers, there has also been conflicting research findings about how knowledge affects green behaviour. The findings ranged from knowledge being a significant predictor of behaviour, to not being a predictor at all (Rex, 2008). Granzin & Olsen argued that environmentally concerned consumers were more informed about possible solutions to environmental issues, and people who are more knowledgeable about the environment and its problems are more willing to pay a premium for green products (2001). According to Getzner & Grabner-Krauter (2004), the assumption that consumer eco-literacy is a significant predictor of environmentally friendly behavior has been empirically supported in several studies (Vining & Ebreo, 1990; Chan, 1999). Chan & Lau (2000) found that Chinese people with more ecological knowledge had a stronger intention to purchase green, and accordingly were more likely to actually buy green (Chan & Lau, 2000). However, Laroche et al. (2001) found that eco-literacy was not a proper variable in predicting consumers' willingness to pay more for environmental friendly products. Tadajewski & Tsukamoto (2006) in their qualitative study on green consumer behaviour found that their respondents despite having knowledge of life-cycle analyses failed to show it in their daily shopping behaviour. In addition, Rahbar (2008) could not find a significant relationship between environmental knowledge and green purchase behavior. However, in the study on Malaysian's environmental knowledge, Haron, Piam & Yahaya (2005) concluded that knowledge correlates positively with environmental attitude, behavior and participation although the magnitude of the correlation was low.

Another finding by the Eurobarometer study undertaken by the TNS Opinion and Social (2009) was that people that mentioned that they have never used the internet were less likely to mention climate change as a serious problem (39%) compared to those that used the internet sometimes/often (47%) or every day (52%). This is closely correlated to the knowledge factor.

According to a study undertaken by the Centre for Retail Research Green Buying Guide (2010) for Kelkoo, a British online shopping website, sales of green products in Europe are predicted to double by 2015 as the price of green products decrease. The study also suggested that the sales of green products will not become commonplace until suppliers offer consumers better price incentives to allow them to follow their beliefs and consciences, for example, with regard to organic foods. The Sustainable Consumption study undertaken by the Canadian Centre for Pollution Prevention (2009) found that Canadians expressed a high degree of concern about environmental issues and they recognized that their purchasing decisions had an environmental impact. However, it found that notwithstanding this high degree of concern, such concern weighed less on buying decisions than product cost, durability and convenience. Further, the Canadian population is evenly split on their willingness to pay more for an environmentally-friendly alternative. However, when provided with a comparable product in terms of quality, durability and cost, there is general willingness among consumers to make the environmental choice. Similarly, the BBMG Conscious Consumer Report: Redefining Value in a New Economy, a study undertaken by Branding and Integrated Marketing (2009) found that 50% of US consumers were willing to pay more for environmentally-friendly products, but 66% mentioned cost as the main factor in purchasing decisions.

A study undertaken by Havas Media (2008) across nine countries relating to consumer perception of climate change and its potential impact on business, found that consumers were very keen to be green and that over 80% would buy

more green products if they were available. Further, 75% would buy more if they had a better understanding of how their behaviour could benefit the environment. Whilst, 79% would prefer to buy from companies that are actively trying to reduce their environmental impact. But, only 35% of respondents were willing to pay a premium for environmentally friendly products. This was confirmed by the Boston Consulting Group study (2008). The aforementioned study also found that consumers were becoming more and more "green" as 50% of the respondents indicated that they regularly purchased green products whilst only 24% indicated that they found higher prices for green products to be acceptable. However, an earlier study by Rowlands, Parker and Scott (2001) that examined the relationship between consumers' perception of the environmental impact of various energy sources and their willingness to pay a premium for such green energy/power/electricity in Canada, found that 7% of respondents did not want green power, 23% would only pay $5 (Canadian dollars) per month more, 45% would pay $10 more, whilst only 3% would pay $50 more.

The CommonWealth Magazine Green Consumer Behaviour Survey (2010) undertaken in Taiwan indicated that when making a purchase, the two main elements of consideration amongst consumers are environment friendliness and price. However, the aforementioned study found that the younger the consumer, the more the consideration leant toward price, and conversely, the older the consumer, more the consideration was given to environmental friendliness. However, the Eurobarometer study undertaken by TNS Opinion and Social (2009) obtained conflicting findings. It found that people under the age of 55 are more likely to mention climate change as a serious problem facing the world than older respondents.

The Commonwealth Survey also found that men were more likely to consider price, while female consumers were more likely to consider environmental friendliness over price. This is supported by the Eurobarometer study undertaken by the TNS Opinion and Social (2009) which found that more men cited the issue

of climate change as a serious problem facing the world than women. However, in contrast, a web survey undertaken by Burst Media (2008) had earlier found that there was little difference in the “degree of greenness” between men and women, or income, or age segment.

Income is generally thought to be positively related to environmental sensitivity. The justification for this is that at higher income levels people can withstand the increased costs associated with supporting green causes and favouring green products (Straughan & Roberts, 1999). Several other studies have addressed the role of income as a predictor or related construct (Roberts, 1996; Roberts & Bacon, 1997; Newell & Green, 1997). The level of education is another variable that has been linked to environmental behaviour (Newell & Green, 1997; Robert & Bacon, 1996). Education is expected to be positively related to environmental behaviour, however, a definitive relationship between the two variables has not been established.

The study undertaken by Havas Media (2008) across nine countries relating to consumer perception of climate change and its potential impact on business, found that the most positive reaction to modifying their behaviour was found in developing countries with the best demographic group being 25 to 49 year olds, female, university education and above average earners. The only exceptions were in Germany and Brazil where the age group changed to over 50 years old.

The BBMG Report also found that consumers considered a company’s social and environmental behaviour to be an important factor when making product choices. Seventy-one percent (71%) of consumers agreed that they would avoid purchasing from a company whose practices they disagreed with while 55% suggested that they would go further and tell others to avoid purchasing from such companies. In support thereof, the HANSA/GCR study (2008) found that 61% of consumers strongly agreed that businesses have social responsibilities beyond providing goods and services and 51% agreed that providing green

goods and services was part of that responsibility. Similarly, the ImagePower Green Brands Survey (2010) indicated that across all eight countries polled, over 60% of consumers said that they would prefer to purchase from environmentally friendly companies. However, costs are still the major obstacle to consumers' ability to purchase green products in developing countries, and it plays a huge part in decision-making in all countries. With regard to green technology, the Hansa/GCR study reported that 44% of green technology users have realized a cost benefit.

The Green Gap survey by Cone Communications (2008) found that only 22% of consumers realized that the word "green" on the product label meant "less harmful" and not "good for" the environment. The study also found that consumers were in general too trusting of corporate environmental messages with 47% trusting companies to tell them the truth about the environmental impact of their products, 45% believing that they did so accurately. However, the findings of the BBMG study conflicted with this. It found that just 11% of consumers trusted environmental statements on packages and further only 5% of consumers trusted company advertising. However, both reports agreed that the gap between consumers' understanding, or belief, of environmental claims could result in "greenwashing" which refers to companies "spinning" their products as environmentally friendly to improve sales. This is supported by the survey undertaken by Burst media (2008) which found that only 23% of respondents always or usually believed green advertising claims. However, D'Souza et al. (2006) found that the consumer's perception of green products was not influenced by criteria such as packaging, label and the ingredients of a product. The most important finding by D'Souza et al. (2006) was that green consumers relied more on their personal experience in using the product rather than evaluate a green product based on the information provided by marketers. This finding is in conflict with the findings of Taghian and Lamb (2006) that consumers obtain environmental information from labels before deciding to purchase a green product. Furthermore, Rashid (2009) found that the eco label is an important

factor that would enable consumers to make the right purchase choice if faced with a situation that required their consideration of the environmental impact. Finally, Rahbar (2008) could not find a significant relationship between environmental labeling and green purchase behavior.

The Gallup poll (2010) on changes in green behaviour in the United States over the past decade found that greener lifestyle choices remained, in the main, unchanged, especially with regard to recycling and reduced household energy usage. Further, only 36% of the respondents donated any money to a conservation body, and a mere 17% were active in an environmental protection working group. In addition, only 8% of all respondents contacted a business to complain about its environmental practices.

From the aforegoing studies, it is clear that consumers want to buy green products, but the question is whether they are willing to pay for them. Are they willing to "put their money where their mouths are?" There are conflicting findings, however, on a balance of probabilities, the findings currently suggest, not. The trends also suggest that perceptions and behaviours are changing towards buying more green products and services.

2.15 The Green Change Management Challenge

Consumer behaviour is key to the impact that society has on the environment (Jackson, 2005). The actions that people take and the choices they make, to consume certain products or live in a particular way, all have a direct and indirect impact on the environment (Jackson, 2005). Why do we consume in the ways that we do? What factors shape and constrain our choices and actions? Why and when do people behave in a green or pro-environmental way? How can we encourage, motivate and facilitate more green attitudes, behaviours and lifestyles? How can we shift people's transport modes, appliance choices, eating habits, leisure practices, and lifestyle expectations to reduce their damaging effect on the environment and to increase the sales of green products?

Changing behaviours, and in particular motivating more sustainable behaviours, is not straightforward (Jackson, 2005). Individual behaviours are deeply embedded in social and institutional contexts. We are guided as much by what others have to say and do, than we are by personal choice (Petty, Priester & Brinol, 2002). As detailed in 2.14 above, consumers are influenced by several factors in their buying decision, such as social, cultural, personal and psychological factors. Moreover, people are generally locked in to behaviours and behaviour patterns and seem resistant to change (Jackson, 2005). However, individual behaviour does change. Hence, behavioral change is fast becoming the “holy grail” of green consumerism (Jackson, 2005). Accordingly, understanding how, why and where behaviours change is very important.

Research suggests that learning by trial and error, observing how others behave, and modeling our behaviour on what we see around us, provide more effective and encouraging ways for changing behaviours than information and awareness campaigns (McKenzie-Mohr, 2000).

Persuasion is particularly difficult in an environment where there is a plethora of information and messages. Effective persuasion relies on a number of basic principles, including (Bator & Cialdini, 2000):

- understanding the target audience;
- using emotional and imaginative appeal;
- immediacy and directness
- commitments/loyalty schemes; and
- use of retrieval cues to catalyse the new behaviour.

The elaboration likelihood model of Petty & Cacioppo (1981) suggests that lasting behaviourial change relies on people consciously engaging with and elaborating on the subject matter of the persuasive message.

Human beings are social creatures. We learn by example, and model our behaviours on those we see around us (Bandura, 1973). According to the social learning theory, we learn most effectively from models who are attractive to us, or influential on us, or who are simply like us (Bandura, 1973).

A study by Allen & Ferrand (1999) found that people who feel that their behaviour would not make any difference are less likely to participate in green behaviours. In this regard, Kaplan (2000) proposes that the solution is to adopt a participatory problem solving approach. He argues that instead of telling people what to do or do without, the proposed approach will provide consumers with the opportunity to figure out for themselves how certain broadly defined goals can be achieved. Kaplan makes the distinction between three different understandings of behaviourial change: telling people what to do; asking them what they want to do; and, helping people understand the issues and inviting them to explore possible solutions. Although the first is often used, and the second has been regarded as one way of increasing participation, it is the third understanding that lies behind Kaplan's proposed participatory problem solving approach.

Since many green behaviours are routine in nature, it is vital for green consumption strategies and policies to address such habitual behaviour (Jackson, 2005). As with many psychological processes, habit formation has its own rules and dynamics. A vital ingredient for changing habits is to "unfreeze" existing behaviour to raise the behaviour from the level of practical to discursive consciousness (Jackson, 2005). The roots of this view are to be found in Kurt Lewin's Change Theory wherein he argues that behavioural change involves examining and challenging accepted beliefs before different behaviours can be identified and incorporated into new patterns and routines (which Lewin described as a freezing-unfreezing-refreezing process) (Lewin, 1951). This process is known to be more effective in a supportive, social environment.

Accordingly, despite the complexity of the issue of shifting green consumption patterns, there are several options to consider in facilitating such a change.

2.16 Green Consumer Trends

The following are some of the current and future green business and consumer trends:-

- **Collaborative Consumerism** (Given, 2011). With the impact of the 2009/2010 global economic recession still being felt, many households are simplifying their lifestyles, taking steps to protect their financial well-being, cutting back on unnecessary purchases and going green by getting rid of possessions they no longer need. This has led to people looking at new forms of ownership, and has in particular resulted in a leasing lifestyle. In addition to doing business with traditional rental companies, many consumers are turning to collaborative consumption which refers to the various ways that consumers are saving money and reducing their expenditure, such as peer-to-peer sharing, peer-to-peer renting, bartering, swapping, and fractional ownership. This offers many business opportunities for creative green entrepreneurs, especially websites that facilitate such collaborative transactions. This is an important trend because consumers are realising that they can share instead of buying more possessions. This is motivated by cost consciousness and greater environmental awareness, and is enabled by the exponential growth mobile peer-to-peer technologies, social networks, and websites such as Freecycle, Rentalic, Zilok and Swap.com.

- **LOHAS (Lifestyles Of Health And Sustainability)** (Tay, 2011). This describes the group of consumers who are environmentally, socially and health conscious, and they believe in a lifestyle that benefits people and the planet. It is an important trend because it goes beyond green

consumers and looks at the converging market of consumers who are interested in health and fitness, personal development, sustainable living and social justice.

- **Recommerce** (Trendwatching.com, 2012). Consumers have always resold large durable goods such as vehicles and houses, but now almost anything is ripe for sale, from electronics to clothes. Innovative brand buy-backs, exchange schemes, online platforms, and mobile marketplaces offer smart and convenient options for consumers keen to trade in or trade up, alleviate financial strains and address environmental concerns through effectively recycling. An example is Amazon Student which released in August 2011 which enables students to scan the barcodes of books, games, or electronics they own, and see the trade-in price. If accepted, a shopping label is generated and the funds are awarded as an Amazon gift card.

- **Accelerating green economy** (McKinsey & Company, 2011). McKinsey & Company (2011) suggest that new mindsets and regulations will create a very significant market for green technology, encouraging technology improvements in a virtuous cycle. It is claimed that such investments will generate productivity improvements, new jobs and wealth, as well as secure energy supplies. Public opinion will accelerate change, as the environment becomes an increasingly topical issue among consumers and the media. Accordingly, businesses will have to take this trend seriously. McKinsey & Company suggest that plenty of opportunity exists within the new green economy making it an attractive growth area for many companies.

- **Alternative Transportation** (Given, 2011). Due to higher fuel prices, there is likely to be significant growth in the alternative transportation industry. New electric car models such as the Nissan Leaf and Chevy

Volt, as well as electric scooters are expected to continue to gain in popularity. The transport industry is also expected to see an increase in collaborative consumption in terms of car pooling.

- **Urban Farming** (Given, 2011). Another consequence of rising fuel prices is higher food prices which is likely to lead to the expansion of the local food industry, with particular emphasis on urban farming. The gardening and landscaping industries have already seen substantial growth in the past few years despite the recession. At the same time, more and more consumers are seeking out fresh, organic, and local food due to concerns about their health and the impact on the environment of conventionally produced food products. This will include hydroponic farms and free-range chicken farms.

2.17 Green Vehicles

An increasing number of consumers are buying green cars (Chau, Lee & Sadeque, 2011). The Green Car Institute (2004) also found that a substantial market existed for green vehicles as the desire to purchase was there. Joshi & Mishra (2011) state that the green car sector is the only sector in the industry that took green into account from idea generation, to the production process, to the raw materials, to the consumption, to the disposal, and to customer satisfaction.

The Toyota Prius was reported to be the market leader and in 2009-2010 it was the bestselling car in Japan which is a leading market in respect of automobile trends (Mick, 2010). The sales of the Prius keeps increasing despite it having publically-known problems around quality and safety (Mitchell & Linebaugh, 2010). Toyota markets the Prius as more environmentally friendly than conventional vehicles as it uses less fuel and has lower emissions (Mick, 2010). This marketing position seems to work and appeals to people who do not wish to further harm the environment. Griskevicius, Tybur & Van den Bergh (2010) suggest that these consumers choose to make a contribution towards helping the

environment by driving a more environmentally friendly vehicle. This is despite electric or hybrid vehicles, like the Prius, costing more than twice the amount of the equivalent conventional vehicle (Chau, Lee & Sadeque, 2011).

2.18 Public versus Private Transport

Research in South Africa reveals that a large proportion of the population (50% in metropolitan cities) uses private vehicles and they generally do not travel with anyone else (25 Degrees in Africa, 2010). This results in increased congestion, inefficient fuel consumption, and higher levels of carbon emissions. The transport sector is responsible for 25% of the carbon emissions in South African cities (International Association of Public Transport, 2010). City bus and train systems provide the most efficient forms of transport in terms of energy per commuter kilometre, however, despite these modes of transport being cheaper than minibus taxis, they are comparatively under-utilised. This is due to (City of Cape Town, 2010):-

- Inconvenience. Buses and trains do not go into informal settlements and many rural areas. Train stations are also generally too far from workplaces.
- Reputation of unreliability.
- Perception that they are slower than minibus taxis.
- Safety concerns, especially on trains.

Hence, there is an urgent need for infrastructure investment to improve the existing public transport system in South Africa in order to encourage more commuters to use it. An increased use in public transport will result in savings for commuters and increase their disposal income (City of Cape Town, 2010).

2.19 Summary

This chapter clearly shows that there is currently no consensus regarding climate change amongst academics and scientists in respect to whether it exists, or what approach should be adopted to address further warming (mitigation or adaptation). Furthermore, research polls show mixed and conflicting results

regarding the perception of consumers relative to climate change. Moreover, it is unclear whether when it comes to green products, which are generally more expensive and perceived to be of an inferior quality to the equivalent non-green products, whether the perceptions and beliefs of consumers translate into pro-green buying decisions and actions, and whether they are prepared to pay a premium for such green products. There is also conflicting results in respect of the influence of demographics, such as age and gender on the green buying decision. Finally, there is little evidence of studies done in South Africa that looked into consumer perceptions of climate change and especially their green buying behaviour.

The next chapter sets out the research methodology employed for this study. This will include the aims and objectives of the study, participants and location of the study, data collection strategies, research design and methods utilised, and tests used to analyse the data.

CHAPTER THREE
Research Methodology

3.1 Introduction

Aamratunga, Baldry, Sarshar & Newton (2002) suggested that research was a methodical and systematic process of questioning and investigation to enhance knowledge. In this regard, Goddard & Melville (2001) state that research is not just a process of gathering information, but about resolving unanswered questions and creating that which did not exist before. To achieve this Kumar (2011) suggests that the researcher requires a research design and methodology which is the plan, structure and strategy of an investigation to obtain answers to research questions or problems. In other words, the research methodology is a detailed blueprint of how the research study will be undertaken and completed. Accordingly, this chapter focuses on the research design and methodology procedures adopted in this study. The chapter begins with a discussion of the aim and objectives of the study. This is followed by a description of the participants and location of the study, as well as the sampling strategy and techniques employed. Furthermore, the data collection strategies, research design and methods (quantitative versus qualitative), and the data analyses undertaken will be discussed in detail. The key issue is the reliability and validity of the research methodology and tools which impact on the accuracy of the data collected and subsequently on the merits of the conclusions and recommendations based on such data.

3.2 Aims and Objectives of the Study

The aim of the study is to determine the impact of climate change on the buying behaviour of Durban's consumers to help inform future product development and marketing strategies of companies in Durban.

The objectives of the study are:-

3.2.1 To determine the impact of demographics on consumer green buying behaviour.

3.2.2 To determine the perceptions and attitudes of consumers towards climate change.

3.2.3 To determine what consumers are willing to do to mitigate climate change.

3.2.4 To determine the green buying behaviour of Durban's consumers and the major factors influencing the same.

3.2.5 To determine whether improved labeling of products will help consumers make more informed green buying decisions and encourage increased green buying.

3.3 Participants and Location of the Study

The participants (target audience) of this study are consumers over the age of eighteen years living in Durban.

The location of the study is Durban, otherwise known as the Ethekwini Municipality. This area is 2 297 square kilometers in size (1.4% of KwaZulu-Natal), and contributes 66.3% to the total Gross Value Added (GVA) of KwaZulu-Natal and 9.9% to the national economy.

3.4 Sampling

In respect of survey research design, the population of a study is the entire group of people that could be asked to answer questions related to the study. (Fink, 1995). However, it is generally not feasible or possible to survey the entire population to be studied (Sommer & Sommer, 1991). Hence sampling techniques need to be used. A sample is a selection of a smaller group of subjects from the population. In this regard, Fink (1995, 1) states that "A good sample is a miniature of the population" and it must be done in an unbiased manner.

3.4.1 The Sampling Process

According to Sekaran & Bougie (2010) the major steps in sampling include the following:-

- Define the population
- Determine the sample frame
- Determine the sampling design
- Determine the appropriate sample size
- Execute the sampling process

3.4.1.1 Defining the Population

The population for this study is defined as all the people in Durban are over the age of eighteen. According to Durban's economic indicators (2011), this group is made up of 2.25 million people.

An accurate sampling frame could not be specified as there is no database available that clearly defines this group.

3.4.1.2 Determing the Sample Design

There are two types of sampling designs namely, probability and non-probability sampling designs. With probability sampling the chance, or probability, of each case being selected from the population is known and is usually equal for all cases (Saunders, Lewis & Thornhill, 2009). This means that it is possible to answer the research question and achieve objectives that requires one to estimate statistically the characteristics of the population from the sample. On the other hand, with non-probability sampling, the probability of each case selected from the population is not known and it is impossible to answer research questions or to address objectives that require one to make statistical inferences about the characteristics of the population (Saunders, Lewis & Thornhill, 2009). However, one may still be able to make generalizations about the population from non-probability samples, but not on statistical grounds.

The sampling design selected for this study is non-probability sampling, or otherwise known as non-random sampling. This is due to an accurate sample frame not being available.

There are several types of non-probability sampling (Kumar, 2011):-

(i) **Quota sampling**: where the researcher is guided by some visible characteristic, such as gender or race, in choosing participants.

(ii) **Convenience sampling**: involves selecting haphazardly those cases that are easiest to obtain for the sample and where the sample selection process is continued until the required sample is reached

(iii) **Judgemental or purposive sampling**: involves the researcher's judgement as to who can provide the best information to achieve the objectives of the study.

(iv) **Expert sampling**: respondents must be known experts in the field of interest of the study.

(v) **Snowball sampling**: involves selecting a sample using networks of groups and organizations.

In this study the convenience sampling design was used. The reasons for using this design were: it was the least expensive way of selecting a sample; there was no need for information, such as a sampling frame and the total number of elements, as this could not be accurately determined; and it guaranteed the inclusion of the type of respondents needed by the study. However, it is acknowledged that as the resulting sample is not a probability sample, the findings cannot be generalized to the total population. To make the sample more representative of the study population, respondents were selected randomly from various locations across the Durban area, such as Inanda, Ntuzuma, KwaMashu, Umlazi, Verulam, Phoenix, Chatsworth, Overport, Durban CBD, Durban North, Umbilo and Umhlanga. Selection was random, there was no specific selection criteria. Work colleagues, friends and family were used to distribute the questionnaire to such respondents.

3.4.2 The sample size

As a quantitative research design was used, the sample size was determined in advance. A scientific method was used to determine the sample size. A confidence level of 95% and a margin of error of 5% were applied to this study.

Further, according to the 2001 South African census undertaken by Statistics South Africa, Durban has a population of 3 million people of which 68% are over the age of eighteen. Accordingly, the population size is 2 246 799.

The confidence level, margin of error, and the population size were then applied to the Sample Size Table by The Research Advisors (2006) which is attached as Appendix 3 provided that a sample size of 384 would be sufficient for this study. However, this is the minimum acceptable sample size. Due to a good response rate (90%) to the questionnaire, a sample size of 450 was used.

3.5 Research Design and Methods

3.5.1 Description and Purpose

There are essentially two types of research design, namely quantitative research design and qualitative research design.

Quantitative research design and methodology is founded in the positivist paradigm which mainly reflects the scientific method (Ramchander, 2004). This paradigm adopts a deductive approach to the research process. A quantitative methodology abstracts data from the participants into statistical representations rather than textual pictures of the phenomenon (Cooper & Schindler, 2008). The entire research process is objectively constructed and the findings are usually representative of the population being studied (Hyde, 2000). Accordingly, the main strengths of this approach are precision and control. Control is achieved through sampling and design, and precise and reliable quantitative measurement (Ramchander, 2004). The method thus provides answers which have a much

firmer basis than a lay person's common sense, intuition or opinion (Cooper & Schindler, 2008).

The alternative research design and methodology is the qualitative approach which is grounded in the interpretive paradigm. Qualitative research can be broadly defined as "any kind of research that produces findings not arrived at by means of statistical procedures or other means of qualification" (Strauss & Corbin, 1999, 17). The task of the researcher is to capture what people say and do (Hyde, 2000). It uses the approach whereby the researcher seeks to understand the research problem within a specific context, such as the real world setting (Patton, 2001).

A third research methodology is the mixed research methodology which entails a mixture of the quantitative and qualitative research methodologies within or across the stages of the research process. A qualitative phase and a quantitative phase are included in the research study (Onwuegbuzie & Teddie, 2003). Greene, Caracelli & Graham (1989) identify five rationales for the use of the mixed research methodology:-

- **Triangulation**: for the corroboration of results from different methods.
- **Complementarity**: for the enhancement and elaboration of results from one method with the results from the other method.
- **Development**: to use the results from one method to develop and inform the other method.
- **Initiation**: for the discovery of contradictions and new perspectives of frameworks.
- **Expansion**: to expand the range of the enquiry by using different methods.

None of these rationales are present in this study and hence there is no need for the mixed research methodology to be employed.

A quantitative research design and methodology has been chosen for this study as opposed to a qualitative or mixed research design. A quantitative research design was considered more suitable in this instance as this study requires that the green opinions, attitudes and behaviours of consumers in Durban be quantified. This is also referred to as descriptive research as the situation is being described through descriptive statistics. The advantages of using a quantitative research design for this study can be summarized as follows (Patton, 2001):-

- Provides an estimation of the green buying behaviour of the Durban population at large.
- Indicates the extensiveness of green attitudes held by consumers in Durban.
- Provides results which could be condensed to statistics.
- Allows for statistical comparison between demographic groups.
- Ensures that the study is precise, definitive and standardized.
- Measures the level of green occurrence, actions, etc.
- The study can answer questions such as “how many?” and “how often?” green purchases were made.

3.5.2 Data collection strategy and technique

There are various data collection strategies and techniques. This includes, inter alia, questionnaires, standardized tests, observational forms, laboratory notes and instrument calibration logs (Blumberg, Cooper & Schindler, 2005).

A questionnaire was used to collect the data for this study and is attached as Appendix 1. It comprised a written set of multiple choice questions that the respondents answered. The respondents read the questions, interpreted what was required of them, and chose an answer from the options provided. Whilst, it is acknowledged that the questionnaire also has some drawbacks, such as low response rates in certain circumstances, the reasons why the questionnaire was chosen as the data collection tool are as follows (Sekaran & Bougie, 2010):-

- It was less expensive and more convenient, especially when compared to interviews. It saved time, as well as human and financial resources.
- It offered greater anonymity as there was no face-to-face interaction between respondent and interviewer.
- It covered a greater geographical area more easily as compared to trying to interview respondents.
- The population was not illiterate, very young, very old, or handicapped and thus using the questionnaire was a feasible option.
- There was less researcher bias in terms of framing questions and the interpretation of the responses.
- However, most importantly, it was focused.

Closed questions were used because they provided 'ready' categories within which respondents replied to the questions, thus helping to ensure that the information required was obtained and the responses were easier to analyse. Further, it helped the respondents to make quick decisions by choosing amongst the alternatives provided to them, thus reducing the response time.

(i) Administration of the questionnaire

The design of a questionnaire differs according to how it is administered, and especially how much contact the researcher has with the respondents (Kumar, 2011). In this study self-administered questionnaires were completed by the respondents. The questionnaires were administered in the following ways:

- Delivered by hand to each respondent and collected later
- Personally administered to groups of individuals at various organizations with their prior approval. The advantage of this mode of data collection was that any doubts were clarified, it was less expensive than administering the questionnaire to individuals, and there was a higher response rate compared to delivery and collection questionnaires and mailed questionnaires. One questionnaire per person in the group was

distributed and completed. Such contact with the respondents would not skew the results of the study as no assistance or information was provided on the subject of the study. Only clarity regarding concepts, such as “green” was provided, and whether more than one option could be chosen for certain questions. Accordingly, the results from these questionnaires should be treated the same as the other questionnaires individually by hand and via e-mail. This did not resemble a focus group methodology. Accordingly, there was no bias in terms of the results obtained through this distribution method.

- Sent electronically to respondents using e-mail (mailed questionnaires). The benefits of this mode were that a wider geographic area could be reached, it was inexpensive, delivery was quicker, easy to administer, and the respondents could answer at their convenience.

The overall response rate to the questionnaire was 90%. There was a 100% response rate with regard to the personally administered questionnaires, a 82% response rate with regard to questionnaires delivered and collected later, and a 47% response rate with regard to questionnaires sent our via e-mail.

(ii) Construction of the questionnaire

The sections of the questionnaire were designed in line with the objectives of the study:-

Section One: Questions 1 to 4

- Demographics of the sample.
- To determine the impact of demographics on consumer buying behavior.

Section Two: Questions 5 to 8

- To determine the perceptions and attitudes of consumers towards climate change and its impact on them.

Section Three: Questions 9 to 12

- To determine the response of consumers thus far to climate change and what more they are willing to do.

Section Four: Questions 13 to 17

- To determine the green buying behavior of Durban's consumers and the major factors influencing the same.

Section Five: Questions 18 to 19

- To determine the impact of improved labeling of green products on buying decisions.

The aim was to keep the questionnaire as short and as simple as possible. Thus there were only 19 questions. Eighteen questions were multiple choice questions and question 7 was a rank order scaling question where respondents were asked to put five alternatives into a rank order in terms of the most important issues currently facing the city of Durban. In addition, the questions were formulated by using simple, clear and concise wording (Hair et al, 2007) as the intention was to obtain accurate data. Technical jargon was kept to a minimum. The 90% response rate could be attributed to this.

Moreover, instructions were provided on completion of the questionnaire. A covering letter explaining the purpose of the questionnaire was also included, as well as the informed consent letter which was signed by each respondent indicating that they voluntarily completed the questionnaire.

3.5.3 Pre-testing and Validation of the questionnaire

It is important that the study is reliable and valid. Accordingly, this section will elaborate on the steps taken to ensure that the questionnaire measured concepts, objectives and variables it was intended to. The first part will discuss

the pre-testing process and the second will discuss the measures taken to ensure the validity and reliability of the study.

Pre-Testing the questionnaire

According to Hair et al (2007) the reliability of a questionnaire can be achieved by pre-testing the questionnaire using a small sample of the respondents with characteristics similar to the population.

Accordingly, prior to making the questionnaire available for respondent participation, a pre-test was conducted. The purpose of the pre-test was to solicit feedback that might aid in refining the questionnaire. The pre-test sample population consisted of twenty (20) work colleagues at the Ethekwini Municipality. Hard copies of the questionnaire were given to them for completion on 20 April 2011 and this was repeated with the same group of people on 4 May 2011. This resulted in the questionnaire being refined and following questions being rephrased:-

- Question 7: The options were consolidated and reduced from 10 to 5.
- Question 12: The options were expanded to include “clean” sources of energy.
- Question 14: The options were expanded to include “health and safety”.

This ensured that the questionnaire would fulfill the study’s aim and produce data valuable to the overall study.

Reliability and validity of the questionnaire

Reliability and validity are very important considerations. According to Bryman & Bell (2007) when undertaking research the key issue is whether the research instrument is reliable and valid in terms of the concept it is trying to investigate.

Both, reliability and validity are important, and a researcher must ensure that the questionnaire is both reliable and valid. However, being reliable or valid is

insufficient. According to Saunders, Lewis & Thornhill (2009) although a questionnaire maybe valid, it must be reliable too. This validity on its own is not sufficient. According to Hair et al (2007) validity of a questionnaire refers to the extent to which it actually measures what it is supposed to measure. According to Sekaran & Bougie (2010) reliability of a questionnaire refers to the extent to which it is without bias. The main factors are stability, internal reliability and inter-observer consistency (Bryman & Bell, 2007).

Validity

There are various ways by which the validity of a questionnaire can be determined (Sekaran & Bougie, 2010), namely, content validity; face validity; criterion-related validity; concurrent validity; predictive validity; construct validity; convergent validity; and discriminant validity. For the purposes of this study, only face validity will be discussed.

Face validity is defined by Saunders, Lewis & Thornhill (2009, 592) as "agreement that a question, scale or measure appears logically to reflect what it was intended to measure". Whilst Sekaran & Bougie suggest that it shows that the variables used to measure a concept does prima facie seem to measure the concept. The face validity of the questionnaire was determined by pre-testing the questionnaire (the methodology is discussed above, under "pre-testing the questionnaire"). Further, all questions in the questionnaire were linked to a particular objective of the study which covered the full range of the issues and attitudes being measured:

- **Objective 1 – Demographics:** Questions 1 to 4
- **Objective 2 – Perceptions:** Questions 5 to 8
- **Objective 3 – Consumer Response & Behaviour:** Questions 9 to 12
- **Objective 4 – Green Buying Behaviour:** Questions 13 to 17
- **Objective 5 – Impact of Eco-labeling**: Questions 18 to 19

Whilst the drawback of this judgement is based on subjective logic and the extent to which the questions reflect the objectives of the study may differ, the researcher was confident that the initial test had face validity as the overall function of the questionnaire was met from the observed measurements obtained.

Reliability

Mitchell (1996) outlined three common approaches to assess the reliability of a questionnaire, namely: test re-test; internal consistency; and alternative form. The approach used in this study is the test-retest approach. The questionnaire was administered twice to the same group of twenty (20) work colleagues on 20 April 2011 and 4 May 2011. The result was a test-retest coefficient of 0.86 which suggests an 89% reliability in the questionnaire. The coefficient was established by computing the correlation between the tests administered on 20 April 2011 and 4 May 2011 using the SPSS programme.

The main advantage of this approach is that it allows the questionnaire to be compared to itself. This avoids any problems that could arise by using another instrument (Kumar, 2011). The main disadvantage, however, is that a respondent may recall the responses he/she gave in the first round which, may negatively impact on the reliability of the questionnaire.

3.6 Analysis of the Data

The data obtained from the 450 questionnaires was manually captured onto the SPSS (Statistical Package for the Social Sciences) software to undertake the necessary statistical analyses electronically. This was done by firstly creating a codebook or data file to enable all data to be coded onto the SPSS software. Coding the data meant assigning a number to a particular response so that the answer could be entered into a database (SPSS). Once the data file was completed, it was checked for errors by determining whether any values fell outside the value range for the variable concerned. All errors were corrected.

The analysis of the data was undertaken by using descriptive statistics as it can be used to describe the characteristics of the sample and to address the specific research questions of the study. There are a number of descriptive statistics, however, for the purposes of this study frequencies and cross tabulations were used.

The data was presented in the form of graphs and tables. Based on these, conclusions and recommendations were made in respect of the Durban consumers' perceptions of climate change, their green buying behavior, and the implications for business, government, educational institutions, and other stakeholders.

3.7 Ethical considerations

Ethical clearance for this study was obtained from the research committee of the University of KwaZulu-Natal (Appendix 2). A policy of strict confidentiality was adhered to. In addition, bias by the researcher was avoided at all costs in undertaking this study.

Furthermore, the following requirements were also satisfied:-

- A covering letter explaining the purpose of the research was read by respondents.
- Respondents were advised and informed in writing that participation was voluntary and that they could end their participation at any point in time.
- Respondents signed an informed consent letter that they read and understood.
- Only respondents over the age of 18 participated in the study.
- The identities of all respondents have been, and will, be kept confidential.

3.8 Summary

This chapter began with a discussion of the aim and objectives of the study. This was followed by a description of the participants and location of the study, as well as the sampling strategy and technique. Furthermore, the data collection strategies, research design and methods, and data analyses were discussed in detail. By ensuring reliable and valid research methods and tools being used, accurate data was obtained and analysed to make meaningful conclusions and recommendations. The results of the survey undertaken will be presented in the next chapter.

CHAPTER FOUR

Presentation of Results

4.1 Introduction

This chapter provides a presentation of the results obtained through the collection of data using the questionnaire. The results are presented through the use of graphs and tables. The results have been categorized in terms of the objectives of the study.

4.2 Demographics of the sample

4.2.1 Age

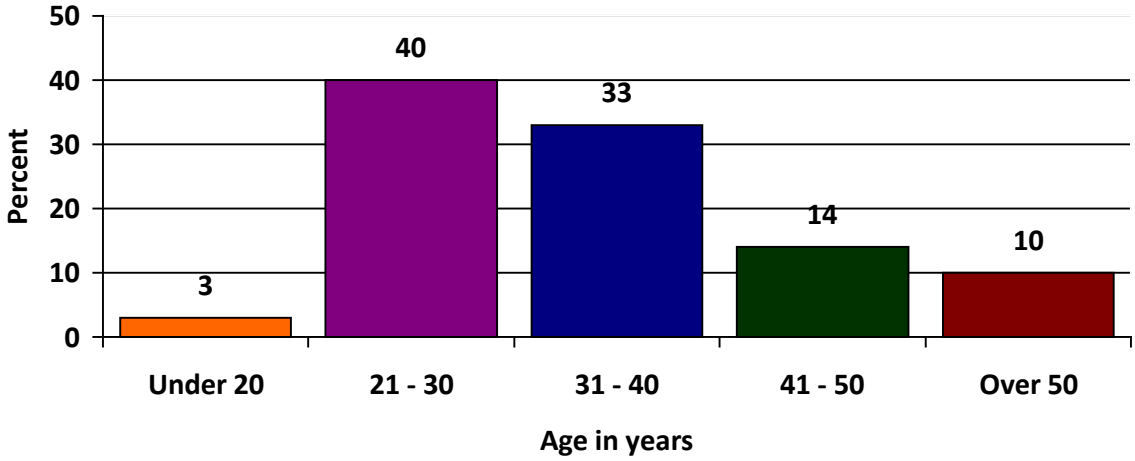

Figure 4.1 Age distribution of respondents

The age distribution indicates that respondents between the ages of 21 and 30 years represented 40 percent of the sample while respondents between the ages of 31 and 40 represented 33% of the sample. Respondents between the ages of 41 and 50 represented 14% of the sample while respondents that were 50 years and older represented 10% of the sample. Finally, the respondents aged between 18 and 20 years represented 3% of the sample.

4.2.2 Gender

Females represented 59 percent of the sample while males represented 41 percent.

4.2.3 Race

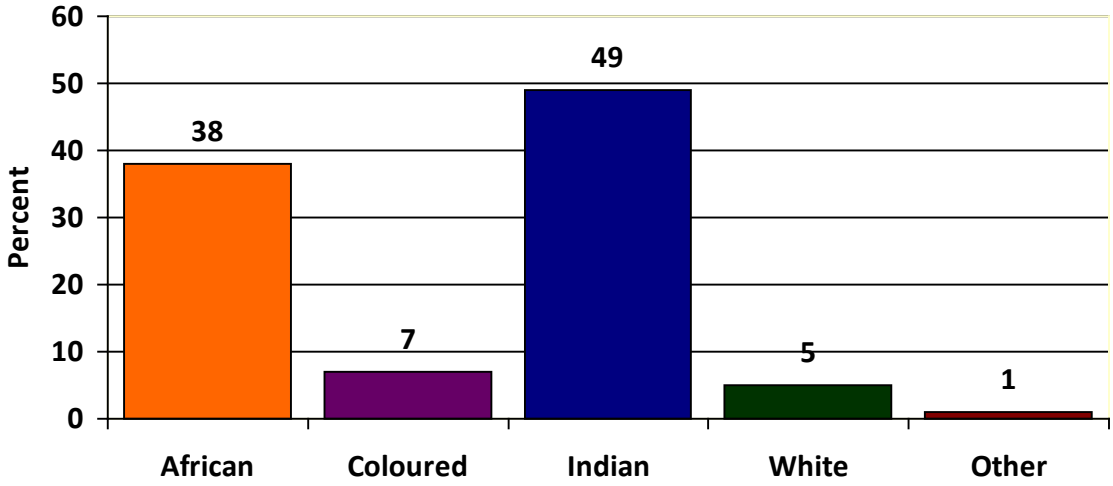

Figure 4.2 Race of respondents

The results show that the majority of respondents in terms of race were Indians with a representation of 49 percent of the total respondents. The composition of the remaining respondents were Africans who comprised 38 percent of the total respondents, Coloureds 7 percent, Whites 5 percent and others 1 percent.

4.2.4 Level of education

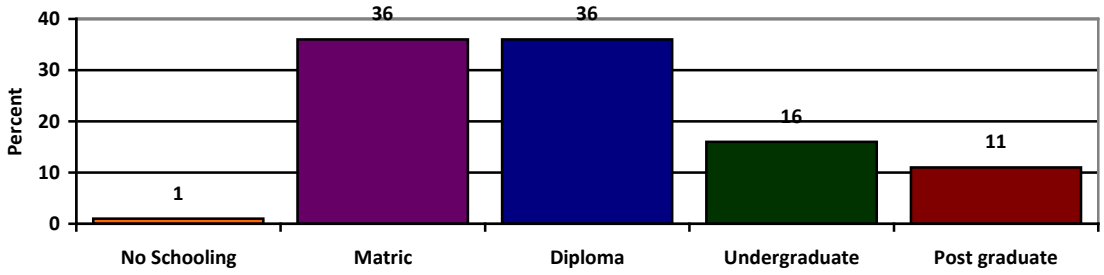

Figure 4.3 Highest level of education of respondents

Figure 4.3 shows that 36 percent of the respondents highest level of education was a diploma whilst for a further 36 percent it was matriculation. Sixteen (16) percent of the respondents were undergraduates and 11 percent were post graduates. Only 1% of the respondents did not undergo any schooling at all.

4.3 Perception and attitudes of respondents to climate change (Objective 1)

4.3.1 Existence of climate change

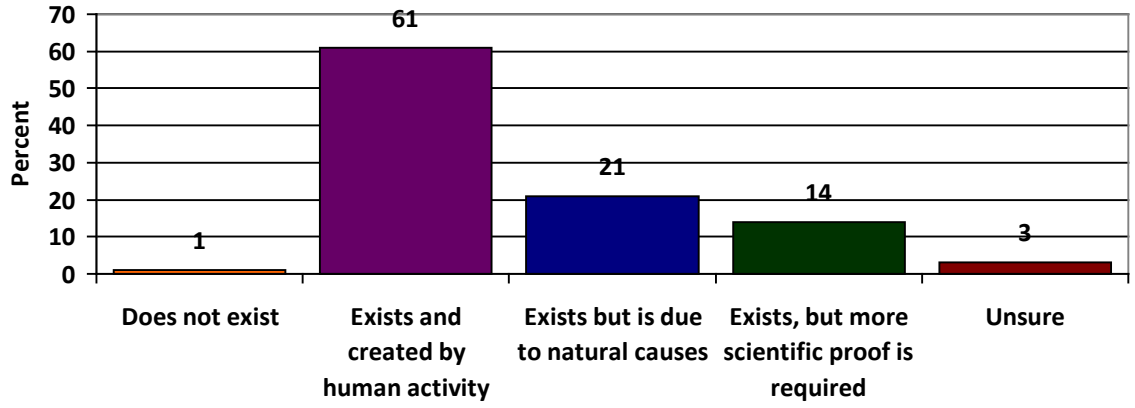

Figure 4.4 Respondents' view on the existence of climate change

Figure 4.4 indicates that in total 96 percent of the respondents believed that climate change exists, with 61percent believing that it is caused by human activity, 21percent believing that it is due to natural causes and thus very little

can be done about it, and 14 percent believing that more scientific proof is required before climate change can be accepted as an irrefutable fact. Just one percent of the respondents believed that climate change did not exist whilst the remaining 3 percent were unsure whether it existed or not.

4.3.2 Impact of climate change

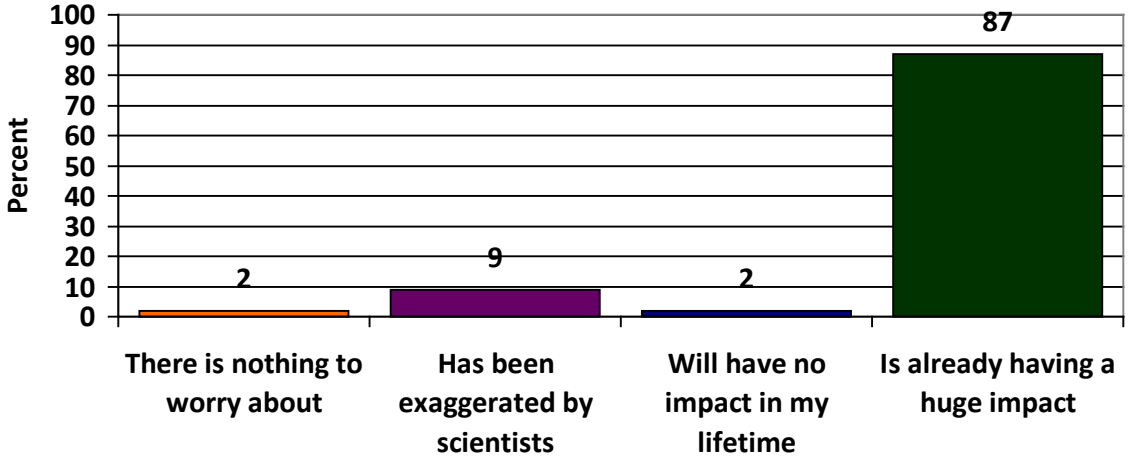

Figure 4.5 Respondents' view on the impact of climate change

Figure 4.5 indicates that 87 percent of the respondents believed that climate change is already having a huge impact on the environment and themselves whilst 9 percent believed that the impact of climate change has been exaggerated by climate scientists. In addition, 2% of the respondents believed that there is nothing to worry about, and 2% believed that climate change would have no impact during their lifetime.

4.3.3 Most important issues to be addressed in Durban

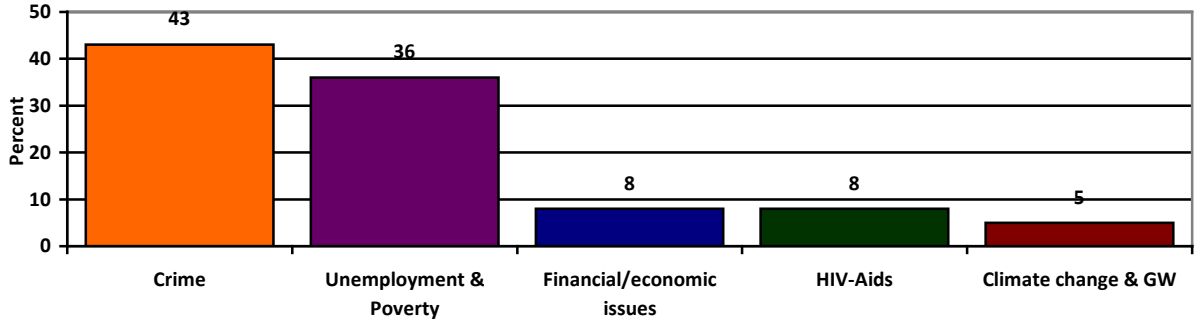

Figure 4.6 Respondents' views on the most important issues that should be addressed in Durban

Forty three (43%) of the respondents indicated that crime is the most important issue or challenge currently facing the city of Durban whilst 36 percent indicated that it was unemployment and poverty. Furthermore, 8 percent indicated that it was HIV-Aids and the same percentage indicated that it was financial and economic issues. The least number of respondents (5 percent) indicated that climate change and global warming was the most important challenge facing the city of Durban.

Of the five issues listed, Figure 4.7 illustrates how the respondents ranked climate change and global warming in terms of their importance:-

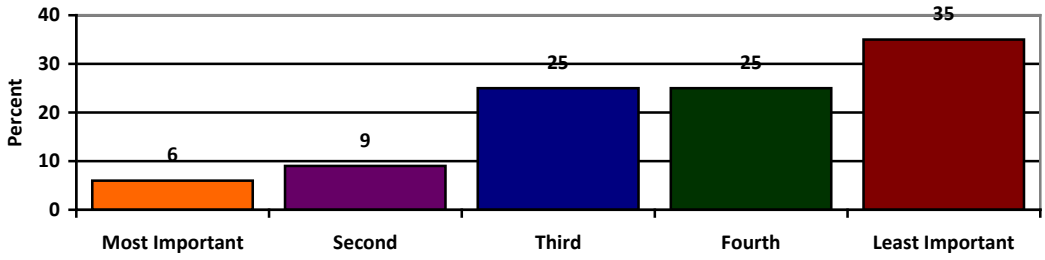

Figure 4.7 Ranking of the importance of climate change as an issue facing the city of Durban

Figure 4.7 indicates that the least number of respondents (6 percent) considered climate change and global warming as the most important issue facing Durban. However, the highest number of respondents (35 percent) considered climate change and global warming as the least important of the five issues listed.

4.3.4 The most important environmental issues in Durban

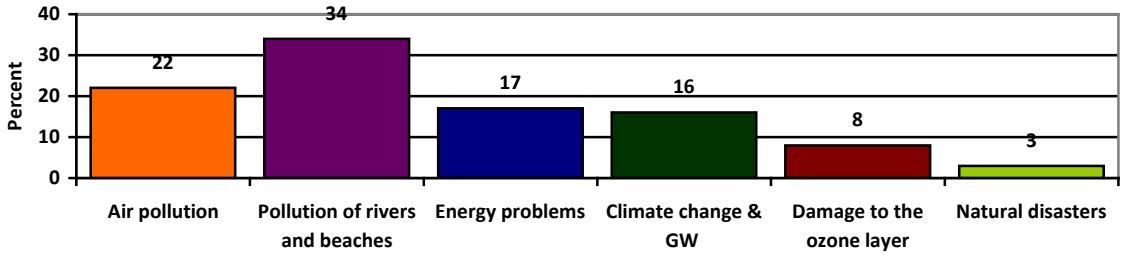

Figure 4.8 Respondents' view of the most important environmental issue facing Durban

The majority of respondents (56%) viewed the pollution of rivers and beaches (34 percent) and air pollution (22 percent) as the most important environmental issues in Durban. Further, 17 percent saw energy problems as a key issue whilst 16% saw climate change and global warming as the most important environmental issue. Eight percent of the respondents viewed damage to the ozone layer as the most important environmental issue and the least number of respondents (3 percent) considered natural disasters to be the most important environmental issue.

4.4 The response of consumers to climate change and what further measures they are willing to employ (Objective 3)

4.4.1 Response to climate change

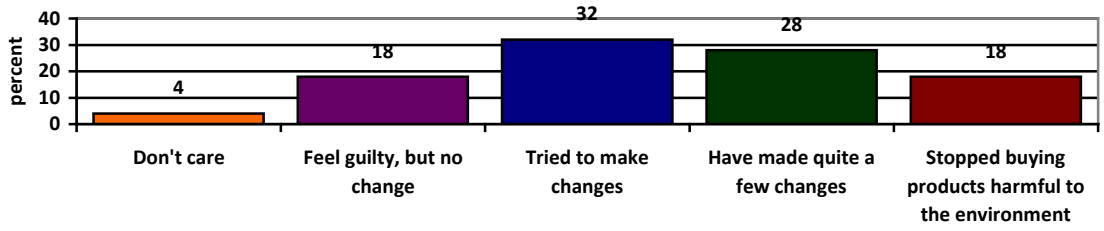

Figure 4.9 Respondents' response to climate change

Figure 4.9 indicates that 32 percent of the respondents have tried to make lifestyle changes to address climate change whilst 28 percent claim to have made quite a few lifestyle changes. A further 18 percent have stopped buying products that are harmful to the environment. Accordingly, 78% of the respondents indicated that they have made, or have attempted to make, lifestyle changes to help address climate change. Further, 18 percent of respondents indicated that they felt guilty about their contribution towards climate change but not enough to make any lifestyle changes, whilst 4 percent indicated that they do not care about climate change.

Table 4.1 cross tabulates the responses to climate change to Gender and Race to provide a more in depth analysis of the data:-

DEMOGRAPHIC	PERCENT				
	Do not care	Feel guilty but made no changes	Tried to make changes	Made a few changes	Stopped buying products that are harmful to the environment
Gender					
Female	3	17	34	29	17
Male	4	21	30	27	18
Race					
African	6	27	25	22	20
Coloured	3	25	38	28	6
Indian	2	12	37	31	18
White	-	4	33	50	13
Other	-	-	100	-	-

Table 4.1 Cross tabulation between the Gender and Race of the sample with the response to climate change

Table 4.1 indicates that the majority of both males (34 percent) and females (30 percent) have tried to make changes in response to climate change. Whilst 29 percent of females have made a few changes, 27 percent of males have made a few changes. Further, 17 percent of females and 21 percent males have felt guilty but not made any changes. More importantly, 17 percent of females have stopped buying products that are harmful to the environment, whilst 18 percent of males have also done so. The minority of females (3 percent) and males (4 percent) do not care about climate change and its impact.

The majority of Africans (27 percent) feel guilty but have made no changes, 25 percent have tried to make changes, 22 percent have made a few changes, 20 percent have stopped buying products that are harmful to the environment, and 6 percent do not care about climate change and its impact. The majority of

Coloureds (38 percent) have tried to make changes, 25 percent feel guilty but have made no changes, 28 percent have made a few changes, 6 percent have stopped buying products that are harmful to the environment, and 3 percent do not care about climate change and its impact. The majority of Indians (37 percent) have tried to make changes, 12 percent feel guilty but have made no changes, 31 percent have made a few changes, 18 percent have stopped buying products that are harmful to the environment, and 2 percent do not care about climate change and its impact. The majority of Whites (50 percent) have made a few changes, 33 percent have tried to make changes, 4 percent feel guilty but have made no changes, and 13 percent have stopped buying products that are harmful to the environment.

4.4.2 Primary means of transport

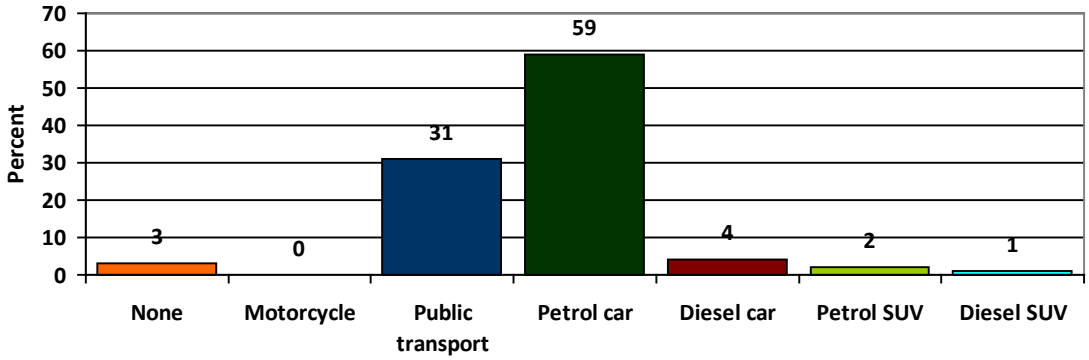

Figure 4.10 Respondents' primary means of transport

Figure 4.10 shows that the majority of respondents (59 percent) use a petrol car as their primary means of transport, whilst 31 percent use public transport. In addition, 4% use a diesel car, 2% a petrol SUV, and 1% a diesel SUV. None of the respondents used a motorcycle, whilst 3% indicated that they did not use any of the listed forms of transport.

4 4.3 Next vehicle purchase

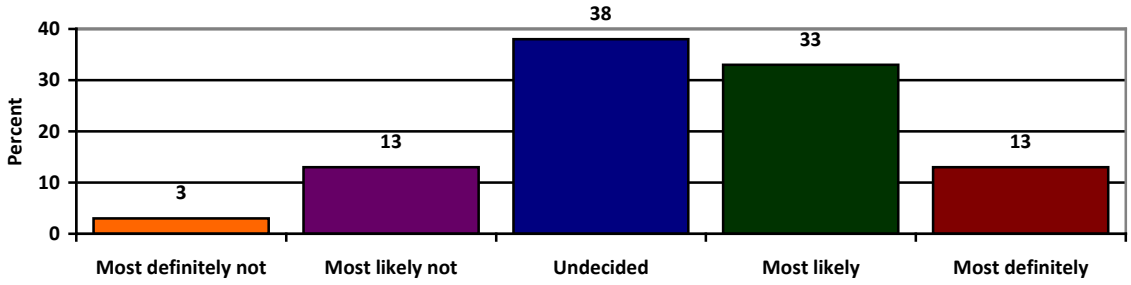

Figure 4.11 Chances of respondents purchasing an environmentally friendly vehicle

From Figure 4.11 it is evident that 38 percent of the respondents were undecided whether or not they would buy a green (hybrid/electrical) vehicle on their next purchase. Thirty three (33 percent) of the respondents indicated that they would most likely purchase a green vehicle and a further 13 percent indicated that they would most definitely do so. On the other hand, 13 percent of the respondents indicated that they would most likely not purchase an environmentally-friendly vehicle, and a further 3 percent indicated that they would most definitely not.

4.4.4. Environment protection measures practiced

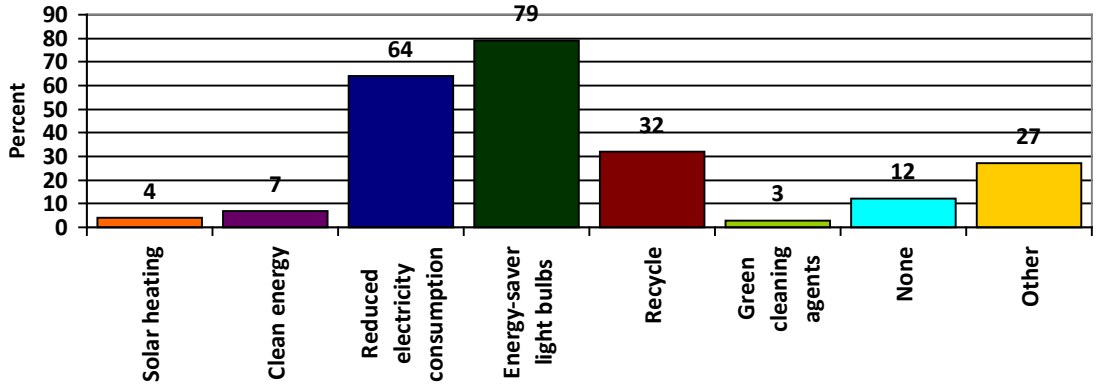

Figure 4.12 Environment protection measures practiced by respondents at home

Figure 4.12 indicates that 79 percent of all the respondents use energy-saver light bulbs, 64 percent have reduced their electricity consumption, 32 percent

recycle, 7 percent use clean energy sources, and 4 percent use solar heating. However, 12 percent of the respondents indicated that they did not practice any environment protection measures, whilst 27 percent claimed that they practiced measures that were not listed.

4.5 The buying behavior of respondents and the factors influencing same (Objective 4)

4.5.1 Green buying behavior of respondents

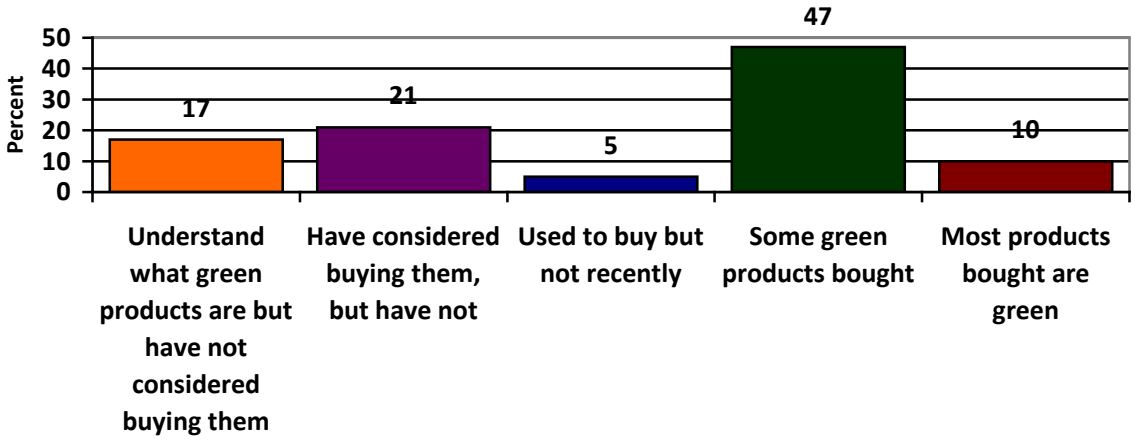

Figure 4.13 Green buying behaviour of respondents

Figure 4.13 illustrates that 17 percent of the respondents understood what green products are but have not considered purchasing them whilst 21 percent have considered buying green products but have not actually done so, and a further 5 percent used to buy green products but not recently. Accordingly, a total of 43% of the respondents were not purchasing green products. However, 47% of the respondents indicated that some of the products they purchased were green, whilst a further 10 percent indicated that most of the products they purchased were green. Accordingly, in total 57 percent of the respondents were buying at least some green products.

Table 4.2 cross tabulates the respondents' buying behaviour to the Gender and Race of the sample to provide a more in depth analysis of the data:-

DEMOGRAPHIC	PERCENT				
	Understand what green products are, but have never considered buying them	Considered buying green products, but have not bought actually them	Used to buy green products earlier, but have not bought them recently	Some of the products currently bought are green	Most of the products currently bought are green
Gender					
Female	17	22	4	48	9
Male	17	21	6	47	10
Race					
African	23	21	8	39	9
Coloured	13	34	3	41	9
Indian	14	19	4	54	10
White	4	29	-	54	13
Other	100	-	-	-	-

Table 4.2 Cross tabulation of Gender and Race with the respondents' green buying behavior

The majority of females (48 percent) and males (47 percent) buy some products that are green. Whilst 22 percent of females and 21 percent of males have considered buying green products but have not actually bought any, 17 percent of both females and males understand what green products are but have never considered buying them, and 9 percent of females and 10 percent males answered that most of the products they purchased were green. The minority of females (4 percent) and males (6 percent) used to buy green products but have not done so recently.

The majority of all race groups buy some green products, that is, 39 percent of Africans, 41 percent of Coloureds and Indians, and 54% of Whites. A further, 21

percent of Africans have considered buying green products but have not actually bought any, 23 percent understand what green products are but have never considered buying them, 9 percent answered that most of the products they purchased were green, and 8 percent used to buy green products but have not done so recently. Of the Coloureds, 34 percent considered buying green products but have not actually bought any, 13 percent understand what green products are but have never considered buying them, 9 percent answered that most of the products they purchased were green, and 3 percent used to buy green products but have not done so recently. Amongst the Indians, 19 percent have considered buying green products but have not actually bought any, 14 percent understand what green products are but have never considered buying them, 10 percent answered that most of the products they purchased were green, and 4 percent used to buy green products but have not done so recently. As regards Whites, 29 percent have considered buying green products but have not actually bought any, 4 percent understand what green products are but have never considered buying them, and 13 percent answered that most of the products they purchased were green.

4.5.2 Buying decision factors

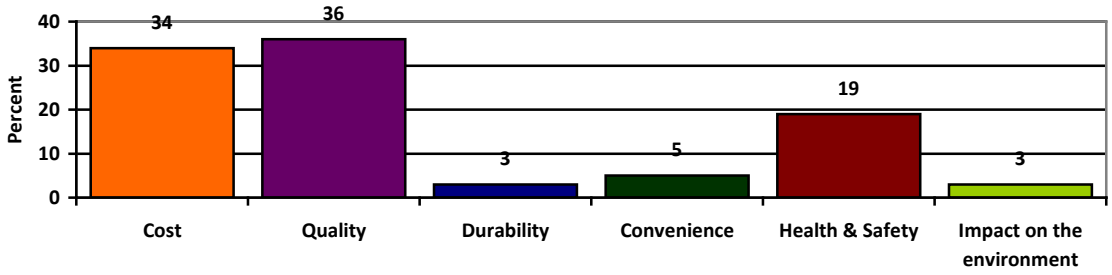

Figure 4.14 The most important factors influencing the buying decisions of the respondents

Figure 4.14 shows that quality is the most important factor in the buying decisions of 36 percent of the respondents, whilst cost was the most important factor for 34 percent of the respondents. Further, health and safety was the most

important factor with 19 percent of the respondents, whilst 5 percent indicated that it was convenience. The lowest number of respondents viewed durability and the impact on the environment as the most important factors influencing their buying decisions with 3 percent each.

4.5.3 Deterrents to purchasing more green products

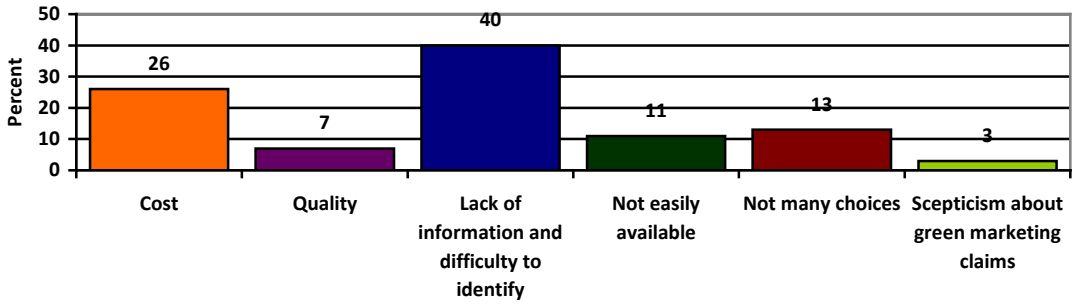

Figure 4.15 The greatest deterrent to the respondents purchasing more green products

It is evident from Figure 4.15 that the biggest deterrent to the respondents buying more green products was the lack of information about green products and the difficulty in identifying such products (40 percent of respondents). However, 26 percent of the respondents viewed cost as the biggest deterrent, whilst 13 percent responded that it was due to there not being sufficient choices or variants with regard to green products. A further, 7 percent suggested that the perceived lower quality of green products was the biggest deterrent, whilst 3 percent were sceptical about the green marketing claims regarding the benefits of such products.

Table 4.3 cross tabulates the respondents' buying behaviour to the Race of the sample:-

DEMOGRAPHIC	PERCENT					
	Cost	Lack of quality	Lack of information and difficult to identify	Not easily available	Not many choices or variants	Sceptical about green marketing claims
Race						
African	23	39	3	6	26	3
Coloured	59	22	3	-	16	-
Indian	35	37	3	5	16	4
White	67	21	4	-	4	4
Other	-	100	-	-	-	-

Table 4.3 Cross tabulation between Race and the deterrents to the respondents' purchasing more green products

Table 4.3 indicates that for the majority of Whites (67 percent), Coloureds (59 percent) and Indians (35 percent) consider the higher cost of green products to be the biggest deterrent to them purchasing more green products. However, for the majority of Africans (39 percent) it was the lack of quality that was the biggest deterrent whilst 23 percent indicated that it was cost. For Whites (21 percent), Coloureds (22 percent) and Indians (37 percent), the lack of quality was the second biggest deterrent. As regards the lack of choices and variants relative to green products, 26 percent Africans, 16 percent Coloureds, 16 percent Indians, and 4 percent Whites considered this to be the biggest deterrent to them purchasing more green products. Furthermore, 3 percent Africans, 3 percent Coloureds, 3 Indians, and 4 percent Whites considered the lack of information regarding green products and the consequent difficulty to identify them as the main deterrent, whilst 3 percent Africans, 4 Indians, and 4 percent Whites were sceptical about claims in green marketing campaigns and labeling.

4.5.4. Ethics: Buying shares in, or products from, a company that acts unethically towards the environment

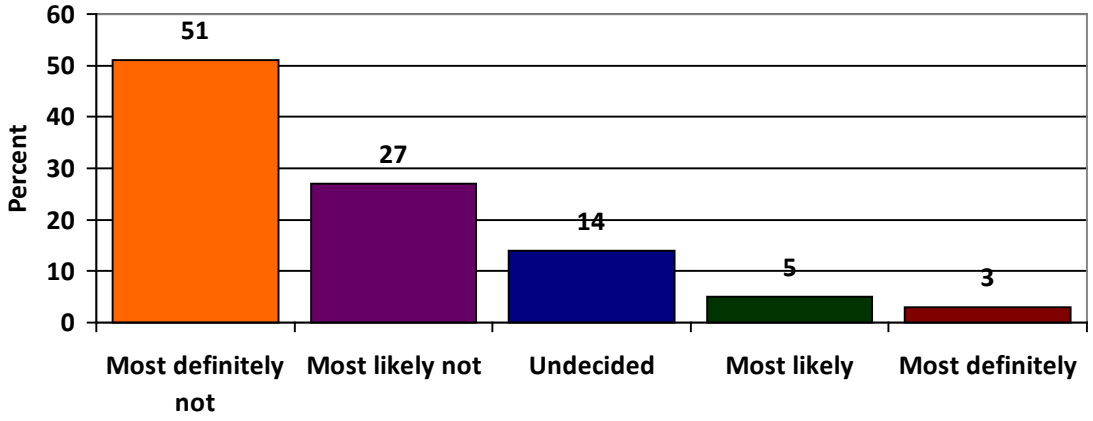

Figure 4.16 Respondents' views on buying shares or products from a company that acted unethically towards the environment

The majority of respondents (51 percent) indicated that they would "most definitely" not buy shares or products from a company that they knew had been acting unethically towards the environment, whilst the minority of respondents (3 percent) answered that they would most definitely buy shares or products from such a company. Whilst 14 percent of the respondents were undecided, 27 percent suggested that they would most likely not do business with such a company, and 5 percent suggested that they would most likely still deal with such a company.

4.5.5. Paying a premium for green products

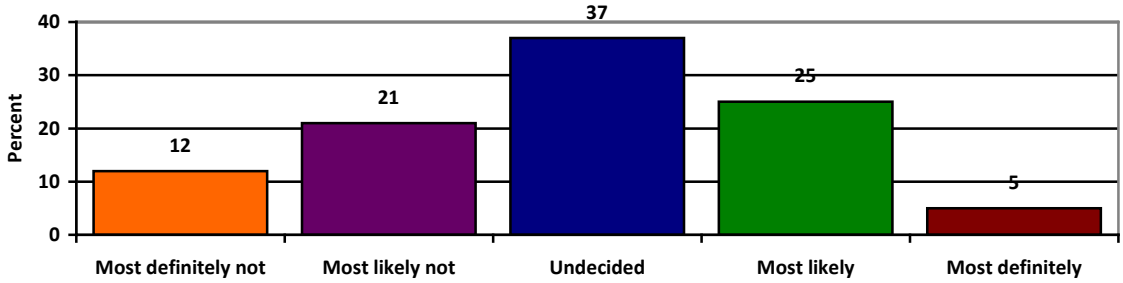

Figure 4.17 Respondent s' willingness to pay a premium for green products

The majority of respondents (37 percent) were undecided whether or not they were prepared to pay a premium for green products. Twelve (12) percent responded that they would most definitely not pay a premium whilst 21 percent indicated that they would most likely not pay a premium. On the other hand, 25 percent of the respondents indicated that they would most likely pay a premium whilst the least number of respondents (5 percent) would most definitely pay a premium.

4.6 The impact of improved labeling of green products on the buying decision (Objective 5)

4.6.1 Labeling of green products in South Africa

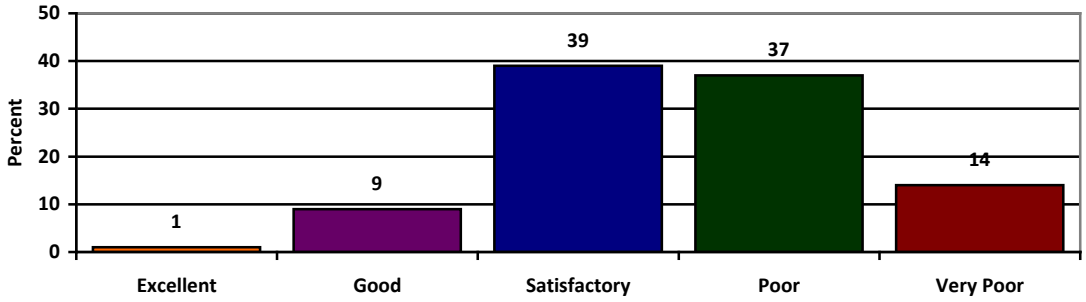

Figure 4.18 Respondents' views of the quality of labeling of green products in South Africa

Figure 4.18 shows that 39 percent of the respondents considered the current labeling of green products to be satisfactory. However, 37 percent consider it to be poor whilst 14 percent consider it to be very poor. On the other hand, 9 percent considered it to be good and the least number of respondents (1 percent) considered it to be excellent. Hence 51% of the respondents considered the labeling of green products to be poor to very poor, whilst just 10% considered it to be good to excellent.

4.6.2 Impact of improved labeling of green products

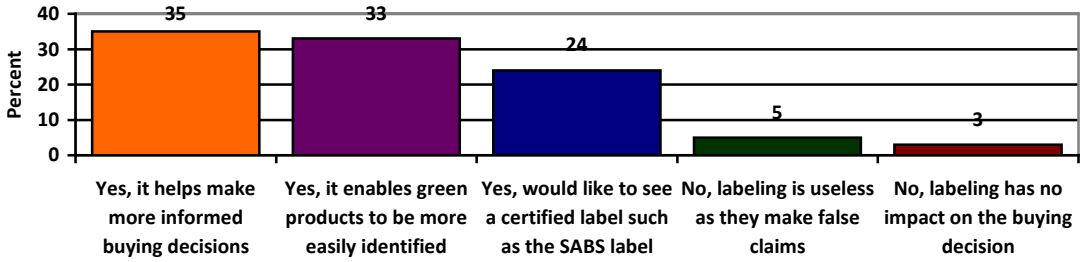

Figure 4.19 Impact of improved labeling of green products on respondents' green buying behaviour

Figure 4.19 details the responses of the respondents to the query of whether improved labeling of products would assist them. A total of 92% of the respondents responded in the affirmative but for different reasons. Thirty five (35) percent believed it would help them make more informed buying decisions, 33 percent believed that it would help them more easily identify green products which would result in them buying more such products, and 24 percent believed that a certified label, such as the SABS label, would assist them. However, 8 percent of the respondents answered in the negative with 5 percent indicating that labeling was useless as companies made false claims about the environmental impact of their products and the remaining 3 percent indicated that the labeling of products had no impact on their green buying behaviour at all.

4.7 Summary

This chapter presented the data that was obtained through the questionnaire administered to consumers in Durban. The results were presented by means of bar charts and tables. The data collected in respect of each question was presented according to the relevant objective of the study. The responses were analysed using the SPSS application and were presented using percentage values. The study found that 96% of respondents believed that climate change existed and 87% believed that it was having a major impact on the planet. Nevertheless, environmental issues did not weigh heavily in the buying decisions

of the respondents. Instead quality and cost were the main factors. Moreover, the study found that green marketers should target the white female segment of the market as they were most conscious of environmental issues. Chapter 5 will discuss in detail the findings presented in Chapter 4 with the view of satisfying the objectives of the study.

CHAPTER FIVE
Discussion

5.1 Introduction

This chapter discusses the results of the empirical investigation which were presented in Chapter 4. The results are interpreted and explained, and also discussed in relation to existing readings and studies already undertaken. The discussion of the results will be arranged in terms of the objectives of the study.

5.2 Objective 1: To determine the impact of demographics on consumer green buying behavior.

5.2.1 Response to Climate Change

With regard to their responses to climate change, the results of the study indicate that demographics do play a role.

Since more White respondents (83%) took action to address climate change than any other race group, whilst Africans (47%) were the least responsive race group.

With regard to gender, females (73%) were far more responsive in terms of making changes to address climate change than males (57%).

This indicates that green marketers should focus their marketing and advertising of green product and services at the White female segment of the market. However, other segments could also be profitable, with the African Male segment possibly being the least profitable one.

5.2.2 Green Buying Behaviour

The results indicate no differences between the green buying behaviour of males and females. This finding supports the work of Tognacci et al (1972), Stern et al (1993), and MacDonald & Hara (1994) which showed that gender had no relationship with green buying behaviour. However, it is opposed by the work of Memery, Megicks & Williams (2005), do Paco, Raposo & Filho (2009) and Banyte, Brazioniene & Gadeikiene (2010) which showed that women were more sensitive to environmental issues and perceived them better than men did, and hence bought more green products. It is also in contradiction of the findings of Mostafa (2007) and D'Souza, Taghian, Lamb & Peretaitko (2007) who found that men had a more in depth knowledge of environmental issues and hence bought more green products. In addition, the Eco Pulse report (2011) found a gender gap in terms of the way that men and women viewed green products and the environment. The report found that women were more likely than men to purchase green home cleaning, food and beverage, personal care, baby and paper products, whilst men were more likely to purchase green electronic products and vehicles.

However, the results did indicate a difference in terms of race in White (67%) and Indian (64%) respondents being the biggest buyers of green products and Africans (48%) the smallest. Hence, the results indicate that green marketers should mainly focus on the White and Indian segments of the market. No previous studies could be found using race as a demographic and hence no comparison of this finding could be made.

5.3 Objective 2: To determine the perceptions and attitudes of Durban consumers towards climate change and its impact on them.

The results clearly showed that an overwhelming majority (96%) of respondents believed that climate change existed. Furthermore, the majority of respondents (87%) believed that climate change was already having a major impact on the planet.

The results relative to the respondents' belief in the existence of climate change are higher than the results from surveys and studies in other countries. For example, a survey undertaken by Angus Reid Public Opinion on a quarterly basis in Britain, Canada and USA found in September 2010 that 47% of Britons regarded climate change as a fact. Overall 60% of Canadians believed that climate change was a fact and was caused by emissions from vehicles and industrial facilities. The survey also found that Americans remained sceptical of climate change with only 42% believing that climate change was a fact.

The findings of this study are in conflict with previous findings in South Africa. The Gallup Poll (2008) found that only 29% of South Africans believed that climate change was caused by human activity, and a mere 21% believed that climate change posed a personal threat to them. Furthermore, the worldwide climate consciousness survey by GlobeScan (2008) found that South Africa ranked with America and China at the bottom of the poll as only 45% of South Africans considered climate change to be a serious problem. Accordingly, the results of this study indicate an upward trend in the belief of consumers in climate change and its impact. It also indicates a change in the awareness and attitude towards climate change.

The finding of a rise in the belief in climate change contradicts the findings of the annual Gallup Social Series Environment poll (2010) which found that American's had become less worried about the threat of climate change, less convinced that its effects were already taking place, but believed more that scientists were uncertain about climate change occurrences. The number of American's that believed that climate change was going to affect them personally dropped to 32% from 40% in 2008. Furthermore, 67% of Americans believed that climate change would not affect them in their lifetime.

In support of the Gallup poll, the study undertaken by the Pew Research Center (2009) found that fewer Americans saw solid evidence of climate change. This decreased by 14% from 71% in April 2008 to 57% in October 2009. As regards the seriousness of climate change as a problem only 35% indicated that they considered it to be very serious, which was down 9% from 44% in April 2008. However, there are also studies in support of the findings of this study. Krosnick (2010) confirmed the trend of his previous studies that belief in man-made climate change, and action to address it, remained strong. The 2010 survey found that 81% of the residents of Florida, Maine and Massachusetts believed that the earth had been getting warmer slowly over the past 100 years. Furthermore, it found that 76% of the residents believed that the warming was mostly or partly due to human activity. In addition, a study undertaken by Havas Media (2008) across nine countries relating to consumer perception of climate change and its potential impact on business found that consumers clearly recognized that climate change and global warming were here to stay and represented a major, if not the major, challenge. The study found that 78% of the respondents had a well developed awareness of climate change. Furthermore, 77% of respondents accepted that climate change was going to have a direct and personal effect on them and their families.

As regards rating the importance of climate change, of the issues listed, climate change was regarded as the least important issue facing Durban, since only 6% of the respondents considered it the most important issue whilst 35% considered it the least important issue. Accordingly, whilst 96% of the respondents believed in climate change and that it was already having a huge impact (87%), they did not consider it to be important. This does not suggest a pro-environmental attitude, instead it suggests a lack of concern for the environment. The respondents considered issues such as crime, unemployment and poverty, financial or economic issues and HIV-Aids as more important issues than climate change and global warming.

This finding is supported by the Eurobarometer study (2009) which found that 69% of the respondents regarded “poverty, the lack of food and drinking water” was the most serious problem facing the world. Ranking second was “climate change” with 47%, and third was “a major global economic downturn” with 39%. This represented a drop of 15% from 62% in April 2008 to 47% in September 2009. It is also supported by the Mainstream Green study by Bennett & Williams (2011) which found that 70% of Americans claimed that they would prefer a cure being found for cancer rather than saving the environment. However, this finding is in contrast with the findings of the ImagePower Green Brands study by WPP (2010) that consumer concern for the environment was increasing and that consumers in India were more worried about the environment than the economy. The study also found that over 60% of the consumers in the United States of America, France, Demark, Australia, India, China and Brazil wanted to buy products from companies with environmentally friendly reputations.

This finding has significant implications for green marketers and manufacturers. This is especially so as consumers’ attitude towards climate change and environmental issues is regarded as a good indicator of consumers’ green buying behavior (Tanner & Kast, 2003). Attitudes indicate what consumers like and dislike (Blackwell et al, 2006), and their buying decisions are based on their environmental attitude. (Irland, 1993). However, the study by Chen & Chai (2010) was opposed to this as it found that consumers’ attitudes towards green products were not driven by their attitude to the environment and its protection. Instead it found that it was driven by the consumers’ feeling of moral obligation.

The finding that respondents did not view climate change and global warming as important could be explained in terms of the logic of collective action postulated by Olson (1965). In essence, Olson stated that people would not contribute to a collective good because their actions contribute towards the collective good but would do so for other reasons, such as incentives, which benefitted them personally. Making the change from non-green to green behavior comes at a

cost to the consumer concerned, such as stress, and time spent learning different behaviours (Petit & Sheppard, 1992). It also requires sacrifices, such as paying more for green alternatives, putting in more effort required by the green behavior concerned, accepting lower quality substitutes, and reducing consumption. Thus the consumer's utility is reduced. On the other hand, the benefits are intangible and shared with everyone else even those who did not make any effort towards green behavior. Furthermore, an individual may view his/her efforts as insignificant in terms of making a material difference. Accordingly, the costs clearly outweigh the benefits. This begs the question, why would a consumer be motivated to make the change to buying more green products. This is a key issue for green marketers. It suggests that incentives are required (which will be discussed in more detail in the next chapter). Collectivism also suggests that government should be driving the change towards enhanced green behaviour instead of independent organizations, such as Greenpeace, and business (Pettit & Sheppard, 1992).

5.4 Objective 3: To determine Durban consumers' response to climate change, and what they are willing to do to mitigate climate change.

5.4.1 Consumer Response to Climate Change

Forty six percent (46%) of respondents indicated that they had made changes to help reduce climate change, however, the majority had not made any changes, although some had tried unsuccessfully. Furthermore, the majority (57%) of the respondents indicated that some or most of the products they purchased were green.

Accordingly, whilst the respondents considered other issues, such as crime, unemployment and poverty, and even other environmental issues in Durban as more important than climate change and global warming, a significant number of respondents have made changes and are buying green products. This could be viewed as contradictory as the responses of the respondents to climate change

suggest that they actually consider it to be important. Accordingly, this finding cannot be accepted at face value.

These findings exceed the findings of a study by Bonini & Oppenheim (2008) which found that 33% of consumers were ready to buy green products or had already done so. Further, the Chain Store Age (2007) survey found only 25% of the respondents had bought a green product other than organic food or energy efficient lighting. However, these findings are lower than the findings of the Havas Media study (2007) wherein 89% of the respondents indicated that they were likely to purchase green products in the next 12 months.

5.4.2 Transport

Only 31% of the respondents used public transport whilst the majority (66%) used private petrol and diesel vehicles as their primary means of transport. The remaining 3% did not use any of the listed forms of transport. Urban activities are the leading cause of climate change, and transportation is by far the biggest energy user (International Transit Studies Program, 2009). Accordingly, there is a need to reduce the number of private vehicles used by people by getting them to use public transport. Suggestions on how Durban could achieve this will be discussed in the next chapter.

The majority of respondents were not committed to buying an environmentally friendly vehicle as their next vehicle. However, 13% of the respondents did indicate that they would most definitely purchase an environmentally friendly vehicle as their next vehicle. This constitutes a significant future market for electrical or hybrid cars. Accordingly, this suggests that there could be substantial rewards for the green vehicle manufacturer that offer the right green vehicle products at the right prices to meet this demand. Such companies would also benefit from the positive environmental and technological leadership image that would bolster their overall positioning in the marketplace.

This finding is consistent with the findings of the Green Car Institute (2004) that a consumer market of 12% to 18% existed for electric vehicles at that point in time. Further, the said market research study found that 29% of the respondents were likely or very likely to acquire an electric vehicle as their next car, provided that the vehicle was priced close to the equivalent petrol or diesel vehicle.

5.4.3 Environment Protection Measures

As regards the environmental protection measures undertaken by the respondents, the majority of respondents (64%) reduced their electricity consumption and used energy saver light bulbs (79%). However, only 32% were recycling, 7% used clean energy, 4% used solar heating, and 3% used green cleaning agents. Accordingly, this indicates that there is immense marketing potential with regard to energy-saver light bulbs, recycling, clean energy sources, solar heating, and green cleaning agents. Interestingly, the most popular actions cited by the respondents saved them money. In contrast, respondents were less inclined to undertake more inconvenient or more costly measures. This implies that for green marketers and manufacturers the most successful green products that they should focus on should be those that save consumers money. Moreover, the products or measures should have the attributes of convenience and cost effectiveness.

This is supported by the findings of the AccountAbility (2007) study that the consumers have already made some easy, close-to-home changes such as reducing energy consumption at home (58%) and buying energy efficient light saver light bulbs (48%). However, the study found that few had translated this to more difficult green behaviourial changes or purchasing choices. Consumers should be cautioned that electricity is a “zero benefit” item from a financial perspective. Whilst it will help the environment, the less electricity used by consumers will result in higher tariffs by Eskom and the municipality concerned. Accordingly, the “savings” gained through lower consumption will be lost due to the consequent higher tariff charged.

5.5 Objective 4: To determine the green buying behavior of Durban's consumers and the major factors influencing the same.

5.5.1 Green Buying Behaviour

The findings suggest that green is mainstream (47% of respondents purchased some green products), but erratic (5% of the respondents who bought green products at one point in time have stopped buying them) but not yet very deep (only 10% of the respondents bought green products for the majority of their purchases). The finding that only 10% of the respondents bought green products for most of their purchases is consistent with the finding that only 6% of the respondents regarded climate change and global warming as the most important issue facing Durban. This is consistent with the work of Ishaswini & Datta (2011) that found that environmental concern and consumer's buying behaviour were positively related. They also suggested that consumers' pro-environmental concern was a likely predictor of their green buying behaviour. The findings of Lee (2008) also support the view that environmental concern is positively related to the green buying behaviour of Hong Kong adolescents. This could be explained in terms of the theory of reasoned action (TRA) developed by Fishbein & Ajzen (1975). TRA suggests that an individual's voluntary green behavior or behaviourial intention is determined by his/her attitude or concern towards the environment, as well as how other people would view his/her pro environmental actions (Miller, 2005). A study by Mostafa (2007) among Egyptian consumers found that consumers' attitude towards the environment could influence their green purchase intention and directly affect their green buying behaviour. Accordingly, this suggests that green marketers should ensure that their advertising campaigns include the message that refraining from green buying behavior is socially reprehensible.

This finding contradicts the work of Tang, Fryxell & Chow (2004) who argued that there was a worrying gap between what consumers say they will do, and how

they actually behave. In other words, they do not put their money where their mouths are, or walk the green talk. Therefore, environmental concerns are not the only reason for the customers to purchase environmentally friendly products. This contradicts the TRA as well. The work of Tang et al is supported by the Mainstream Green study by Bennett & Williams (2011) which found that whilst consumers believed more in the importance of green behaviours, practices and purchases, this had not been fully converted into action. They referred to this as the "Green Gap" and argued that businesses needed to close this gap if they were to take advantage of the financial and reputational opportunities offered by green consumerism and marketing.

5.5.2 Factors Influencing Green Buying Behaviour

This study found that the most important factors influencing the green buying decisions of the respondents were quality (36%) and cost (34%). Accordingly, manufacturers and retailers of green products need to focus on these two factors to market their green products. This is in line with the study undertaken by The Boston Consulting Group (2008) that found that with better products and lower costs, everyone stood to win, namely, consumers, retailers and manufacturers. This was particularly the case in an economic downturn. This finding is also consistent with the findings of the study by the Yale School off Forestry & Environmental Studies (2008) that most Americans were willing to purchase green products, but considerations of price (41% of respondents) and quality (42%) took priority.

Quality and price of an eco-friendly product have a significant impact on consumers when deciding on buying them (Banyte, Brazioniene & Gadeikiene, 2010). Accordingly, Ottman & Reilly (1998) suggest that green marketers have to make hard decisions around the price competitiveness and how they communicate the valuable qualities of their green products. According to Manaktola & Jauhari (2007), no matter how favourable consumers are to the green qualities of a product, they want to buy the products that do not conflict

with their established lifestyle. Thus, green consumers tend to buy so called "green versions of products", that is, when a product existing in the market is replaced with a green one. However, Wind (2004) importantly notes that it is very important that the price of "green version of a product" is the same or close to the established price of a conventional product in the market. Presentation of the "green version of a product" in the market capacitates the consumer to feel green without changing his/her lifestyle.

The finding in the study that cost was one of the major levers for the sale of more green products also supports the findings of Sriram and Forman (1993) and Young, Hwang, McDonald & Oates (2008) that price reduced the influence of interviewee's green values in their decision-making process. Further, according to Swarbrooke & Horner (1999) pricing is important, but more important is the consumer's perception of the price in relation to quality and value for money. Moreover, the GMA & Deloitte Green Shopper Study (2009) found that most shoppers would prefer green products to be price competitive.

This also indicates that the majority of respondents to this study perceived the quality of green products as inferior to non-green alternatives. It furthermore suggests that they will not compromise on the quality of green products. This is consistent with the findings of Luchs et al (2011) that consumers perceived green products as inferior. Biswas et al (2000) also found that consumers believed because recycled products were manufactured with used materials, they might be of lower quality. In addition, Ishaswini & Datta (2011) found respondents were not very confident about the quality of green products and hence did not trust them to perform as well as equivalent non-green products. Moreover, Wong, Turner & Stoneman (1996) recognized that the future of green products was bleak unless their manufacturers could balance their green qualities with the consumer's desire for quality products that performed well. Accordingly, manufacturers and marketers of green products must improve the quality of green products, focus on its green benefits, and share these benefits with the

green consumer to enable the products to be recognized in the marketplace (D'Souza, Taghian & Lamb, 2006). In this regard, Schlegelmilch, Bohlen & Diamantopoulous (1996) suggested that businesses aiming to improve the market penetration of their existing green products must undertake an advertising campaign with a view to increasing concern about the environment in the customer base.

5.5.3 Major Deterrents to Increased Green Buying

The major deterrents to the respondents purchasing more green products were the lack of information about the green products and the difficulty in identifying them (40%), cost (26%), insufficient choices (13%) and not being easily available (11%). This suggests that green products are not yet satisfying consumers green needs and wants. Accordingly, the marketers of green products need to ensure that more information about their products is disseminated, make the green products more easily identifiable, ensure that there are more choices of green products available and that they are available in more stores. The study indicates that these are the most powerful levers for increasing the sales of green products.

Getzner & Grabner-Kräuter (2004) emphasized the need for information and the green consumer's need to know. Knowing is a criterion that has an impact on all stages of the consumer's decision making process in buying a green product. There is an assumption that the better green consumers are informed, the more they will know about the qualities of the green product, and the more they will be motivated to buy the product. Green consumer's need for information especially relates to knowing how and where to find green products. When searching for green products in supermarkets, green consumers must know where they are located, and what the difference is between green and equivalent non-green products (Wind, 2004). In this regard, labeling of green products becomes very important. Knowledge of environmental issues tends to create awareness in brands and possible positive attitudes towards green brands. Environmental

labels may assist consumers in identifying green product attributes (D'Souza, Taghian & Lamb, 2006).

As regards difficulty in identifying green products, this is consistent with the findings of Hormuth (1999) that consumers are more likely to buy green products when the green aspect of the product was more visible. Further, McKenzie-Mohr (2000) found that difficulty in recognizing recycled products was a deterrent to consumers purchasing them.

With regard to cost, the finding of this study supports the finding of The Guardian Sustainable Index (2010) that 73% of consumers were very much or slightly deterred by the price of green products. In addition, the Eco Pulse report (2011) found that 71% of respondents found that green products usually or always cost more than non-green products. This is important for green manufacturers and marketers as this suggests that for more price-sensitive mainstream consumers, they will have to offer competitive pricing and consistent brand support to encourage sales.

The findings regarding the lack of information and the lack of green alternatives are consistent with the findings of Young, Hwang, McDonald, & Oates (2008), Wheale & Hinton (2007), Biel & Dahlstrand (2005, and De Pelsmacker, Driesen & Rayp (2005) which also found the lack of information and the lack of choices with regard to green products were deterrents to consumers purchasing more green products.

5.5.4 Environmental ethics of businesses

The majority of respondents (78%) indicated that they would not buy shares or products in companies that acted unethically towards the environment whilst only 8% indicated otherwise. This clearly suggests that it is vitally important that companies act ethically towards the environment as it could affect their share price, brand and market share. A case in point was the reaction to the BP

(British Petroleum) oil spill incidents in Alaska (2006), Texas (2006) and the Gulf of Mexico (2010), and the evidence that reports on the corroding pipes were allegedly ignored by its Chief Executive Officer. BP's share price fell drastically when this became public knowledge. Accordingly, companies must satisfy the needs and expectations of all their stakeholders, including their expectations with regard to companies' ethical behaviour and corporate social responsibility. Marketers need to ensure that consumers are aware of their companies' green initiatives and their environmental and social responsibility contributions. Marketers also need to ensure that consumers are aware that businesses are not solely responsible for the protection of the environment, but that each individual can also make a difference by adopting green buying behaviours.

This is supported by the findings of the Eco Pulse report (2011) which indicated that more Americans (31%) now considered corporate reputation and a company's environmental record as the most important factor in trusting the company and doing business with it. The study by WPP (2010) found that the consumers from all seven countries (USA, France, Denmark, Australia, India, China and Brazil) agreed that the most important step that a company could take to demonstrate its "greenness" was to reduce the amount of toxic, or similar, substances used in its products and manufacturing processes. In addition, the findings of a study by the Climate Group (2007) confirmed the existence of a receptive market interested in what companies were doing to address climate change, and further, they were eager for companies to do more. This is consistent with the finding of the Havas Media study (2007) where it was found that consumers believed that brands should lead the way in finding solutions to climate change.

Laruccia et al (2011) found that projecting a company's image as an innovator, being different, and adopting green behaviours, could be a competitive advantage. They stated that consumers preferred to do business with green companies, and thus companies should create massive advertising and web

campaigns, produce sustainability reports, be transparent externally regarding their green efforts, and communicate the same internally.

5.5.5 Paying a Premium for Green

Thirty percent (30%) of the respondents indicated that they would pay a premium for green, whilst 33% indicated that they would not, and 37% were undecided. This indicates that there is a significant market (30%) for price premiums that marketers could target. This is especially so as willingness to pay a premium can be regarded as a good predictor of green product demand (Ahmad & Judhi, 2008). Further, marketing and advertising should also target the 37% of the people that are undecided.

However, the results show that more respondents would not pay a premium for green products. This finding is consistent with the findings of Ishaswini & Datta (2011) that whilst consumers were willing to buy green products they were not willing to pay a premium. Further, this was supported by the findings of the Boston Consulting Group (2009) that being green was not found to be a license to charge more. In all countries they surveyed, except China, consumers indicated they would be willing to pay more for green products, but only if they provided added value, that is, they must taste better, be safer, be healthier, or save consumers money. In addition, a Yankelovich (2008) survey found that shoppers were less willing to pay more for green products and services in 2008 as compared to 2007.

This finding, that more respondents would not pay a premium for green products, is also consistent with the findings that the respondents considered cost to be one of the main factors influencing their green buying behavior, and that it was one of the main deterrents to them buying more green products.

This finding, that more respondents would not pay a premium for green products, contradicts the findings of Reitman (1992) whose survey indicated that

consumers were ready to pay from 7 to 20% more for green products. Further, Bhate and Lawler (1997) indicated that an increased number of people had considered the prices of the green products to be higher than other products, however, notwithstanding the same they were willing to buy such green products. Furthermore, the studies of Henson (1996), Gil, Gracia & Sanchez (2000), Laroche et al (2001), Tse (2001), Canavari, Nocella & Scarpa (2003), and Smed & Jensen (2003) also found that consumers were willing to pay more for green products. However, the premium consumers were willing to pay for green products was dependent on the relative cost of the comparable non-green product (Williams & Hamitt, 2000). While the study by the Yale School of Forestry & Environmental Studies (2008) found that Americans were willing to pay more for green products with 50% indicating that they would pay 15% more for green detergents or a green vehicle.

Based on the demographics, this study found White women to be most environmentally friendly and purchased the most green products. Accordingly, marketers may aim at this easily identifiable segment as their prime target. Further, there is a significant group (37%) of undecided consumers, and some may be convinced to move into the willing group. This appears to be an opportunity for marketers to successfully use a variety of strategies and appeals to move some of the undecided consumers to the willing segment.

5.6 Objective 5: To determine the impact of improved labeling of green products on the buying decisions of Durban's consumers.

The majority of the respondents (51%) indicated that the labeling of green products in South Africa was poor or very poor whilst 39% indicated that it was satisfactory. Accordingly, the results indicated that improved labeling offers good marketing potential. It also indicated that it would result in the purchase of more green products by consumers as the majority of the respondents (92%) indicated that improved labeling would help them buy more green products as it would enable them to make more informed buying decisions (35%), as well as to more

easily identify green products (33%). A label such as an SABS (South African Bureau of Standards) label would be beneficial. This suggests that the respondents would like to see green products certified by an independent standards authority that they can trust.

The finding that the labeling of green products would promote green buying behaviour in consumers is supported by the finding of Bjorner, Hansen & Russell (2002) that found that eco-labels could play a role in consumer behaviour. It found that consumers were willing to pay 10 to 17% more for toilet rolls and detergents with eco-labels. Further, Sammer & Wustenhagen (2006) found that the green labeling of products positively influenced the buying behaviour of consumers.

Marketing Green (2008) suggests that the green labeling of products affects consumer behaviour in two ways, namely, they introduce green as a quality of the product at the point of sale, and they enable consumers to make comparisons with other green products available. The resultant increased willingness to buy green products should provide manufacturers with sufficient incentive to produce products that comply with a standardized green label. In this regard, Teisl, Roe & Hicks (2002) found that in addition to changes in consumer behaviour, the presence of eco-labeling might also alter manufacturers' behaviour. This suggests that if a significant number of consumers demand green products, an eco-labeling programme may provide companies with the incentive to differentiate and market their products in terms of green attributes. Hence, an increase in supply of such green products could increase consumer purchases through enhanced availability rather than changes in environmental awareness.

The finding that the respondents preferred a standardized label by an independent agency is supported by the study of Kirchhoff (2000) who found that to ensure the credibility of eco-labels with consumers, eco-labels must be

developed and tested by independent third parties. Kirchhoff suggested that this would lead to enhanced consumer faith in labels and improved compliance with environmental standards by manufacturers. This finding is also supported by the study by AccountAbility (2007) which found that 70% of respondents wanted green claims to be proven by independent parties.

5.7 Summary

This study found that the segment of the market that bought the most green products was White, females as they were the most green conscious. Whilst respondents believed that climate change existed and that it was having a huge impact, respondents did not consider it important. There is a significant future market for electric or hybrid cars. There are marketing opportunities with regard to products and services that will save consumers money and which are convenient and cost effective. The study suggests that green is mainstream, but sticky and not yet very deep. Environmental concern did not weigh heavily in the buying decisions of consumers, instead quality and cost were the main factors. However, a significant portion of the respondents were willing to pay a premium for green products.

The next chapter discusses the recommendations based on the findings in this chapter. This relates to private individuals, government, educational institutions, business, and in particular green marketers. Moreover, the limitations of this study, as well as suggestions with regard to future studies will also be discussed.

CHAPTER SIX
Recommendations & Conclusions

6.1 Introduction

The purpose of this study was to solicit information from Durban consumers about their perceptions of climate change, their responses to climate change, their green buying behavior, and the impact of climate change on their green buying behavior. This chapter will consider to what extent these objectives have been met. It will also consider the implications of this study in respect of the relevant stakeholders. Moreover, it will discuss some practical recommendations based on the findings of this study. Finally, based on the insights of this study possible future studies will be suggested.

6.2 Has the problem been addressed?

The information obtained from the study addresses the research problem. The impact of demographics on the buying behavior of consumers in Durban has been determined (objective 1). The respondent's perceptions of climate change and their attitudes in terms of how important they considered climate change to be were also determined (objective 2). Objective 3 was also met in terms of the actions consumers have taken to mitigate the risks of climate change. However, some of the results in this regard were contradictory and further research is suggested. Objective 4 was also addressed as the green buying behavior of the respondents was identified. It was found that climate change does not weigh heavily on the buying decisions of the respondents, instead it was quality and cost. Finally, objective 5 was addressed as consumers clearly indicated that eco-labeling would help them make more informed buying decisions and purchase more green products.

From the results of the study, the following conclusions can be drawn in respect of each of the objectives:-

6.2.1 Objective 1: Demographics

The White, female segment of the market should be targeted by green marketers.

6.2.2 Objective 2: Perceptions

The vast majority of respondents believed that climate change existed, and that it was already having a major impact on the planet. The respondents indicated that they did not appreciate the importance of climate change.

6.2.3 Objective 3: Consumer Response & Behaviour

Respondents were more willing to undertake green practices that saved them money, but not those that cost them more, or that were inconvenient and impacted on their lifestyles. However, the study identified a significant market potential for green cars.

6.2.4 Objective 4: Green Buying Behaviour

The study found that:-

- Green is mainstream, but erratic, and not yet very deep.
- The major factors in the green buying decision were quality and cost. Consumers were not prepared to sacrifice performance for green products and neither were they prepared to pay more for green products.
- Furthermore, the respondents indicated that environmental concerns (including climate change) did not weigh heavily in their buying decisions. The most important factors influencing their buying decisions were quality and cost. Hence, climate change did not significantly impact on the buying behavior of the respondents.

- The major deterrents to consumers buying more green products were in order of priority: lack of information and difficulty in identifying green products, cost, insufficient choices, and availability of green products.
- There was a significant market that was willing to pay a premium for green products.

6.2.5 Objective 5: Impact of Eco-labeling

The current labeling of green products was considered poor to very poor by the respondents. Respondents also indicated that eco-labeling would result in them buying more green products.

The implications of these findings will be discussed hereunder in terms of the various stakeholders, in particular, business.

6.3 Implications of this Research

The results of this study adds to the body of knowledge regarding consumers' perceptions towards climate change, the actions they are willing to take to address it, their green buying behavior in terms of driving factors and deterrents, the impact that eco-labeling would have on their green buying behavior, as well as the segment of the market that acts the most green. This relates specifically to the city of Durban. In terms of the various stakeholders related to this study, the implications of the study are as follows:-

6.3.1 Business / Management

The study informs new strategies that could be developed by green manufacturers and marketers in terms of product design, development, promoting and selling. This is explained in more detail hereunder.

Findings of the study indicate that marketers should focus on the White female segment of the market to increase the sales of green products. Marketers could benefit from this information by developing pricing and promotional tactics to

appeal to this market. Retailers could also benefit from this study by appreciating what to consider when pricing and promoting green products to the White, female segment of the market.

It was also found that more people now believe that climate change exists than ever before and that it is having a major impact on the planet. This is an opportunity for marketers to take advantage of this change in attitude, and convert it to positive green buying behaviour.

However, despite the high degree of concern shown by respondents towards climate change, environmental concern was weighted less heavily in actual purchase decisions than cost and quality. This implies a need for greater effort by green manufacturers and marketers to convince consumers to give more weight to environmental factors in their purchasing decisions.

As regards the deterrents to respondents purchasing more green products this informs green marketers of the importance of information on green products and the need for such products to be easily identifiable. It also underscores the importance of choices and availability of green products. Accordingly, this is vital information for green marketers when developing green marketing strategies and plans.

This study also indicated that there was a significant market for green products, as well as a significant segment of the market was willing to pay a premium for green products. Green manufacturers and marketers need to satisfy this market by ensuring that they have the right products available, are geared to meet the potential increased demand, and have the correct marketing plans and strategies in place to optimize this opportunity.

In addition, there was a significant segment of the market that was undecided whether or not they would pay a premium for green products. This indicates a

need for marketers to develop different strategies and use alternative appeals to convert some of these undecided consumers into the “willing” segment.

More specifically, the study indicated that there was a significant market for green vehicles. Hence marketers of companies manufacturing green vehicles need to design their marketing strategies so that the benefits of green vehicles are continuously demonstrated in their product promotion to the consumer in a form that the consumer understands.

One of the most important implications of this study for green manufacturers and marketers is that eco-labeling could serve as an important marketing tool in terms of providing more information and encouraging the purchase of more green products. Consumers clearly indicated that eco-labeling would have a positive and significant influence on their green buying behavior.

6.3.2 Government

This study could help inform policy making discussions. Policy makers need to know what the public wants in order to develop policies that would be supported or at least be tolerated. This study provides guidelines in terms of government developing policies around public transport, urban planning and development, incentives and disincentives to promote green buying behavior and practices. The recommendations in this regard will be discussed later in this chapter.

The education of consumers regarding climate change and the role that consumers could play in addressing climate change, is vital. In this regard, government could ensure that their environmental messages and advertisements in the media include specific environmental knowledge and green product knowledge to help convince consumers to make the right choices to help address climate change.

6.3.3 Educational institutions and agencies

The study found that the Theory of Reasoned Action (TRA) could be used as the theoretical framework to explain the green buying behavior of consumers. However, academics need to undertake further research into the applicability of the model. They need to determine whether factors such as environmental protection and awareness, self-image, ecological effect, environmental label, environmental knowledge and environmental concern fit into the TRA model. There could be other factors that could be considered in refining this model.

Educators could also use this study as the basis for developing additional studies to examine the White, female segment of the market in more detail with the view of increasing the sales of green products and thus helping the environment.

6.4 Recommendations based on the objectives and findings

The key issue to be addressed is how the purchasing of green products can be increased by the various stakeholders.

6.4.1 Objective 1: Demographics

6.4.1.1 Segmentation of the Market: Demographics

It is recommended that marketers should focus on the White female segment of the market to increase sales of green products.

6.4.2 Objective 2: Perceptions

The findings of this study clearly indicated that the respondents did not appreciate the importance of climate change.

6.4.2.1 Education & Awareness

It is recommended that government should undertake a needs analysis to determine the specific educational and training needs of the population with regard to climate change. The initiatives referred to here should include, inter

alia, the development of centres of excellence for sustainability, including climate change, and could look at undertaking the following:-

- Integration of information on climate change.
- Enhancement of the understanding of the scientific evidence around climate change.
- Building awareness amongst all stakeholders, especially political and financial leaders.
- Development of learning resources for local communities.
- Provide training and technical guidance.
- Organise national and regional educational workshops, including demonstrations of new green products.
- Undertake green research and development

These centres could be included as part of the energy offices in municipalities.

Furthermore, it is recommended that climate change should be included into the curricula of all levels of education (primary, secondary and tertiary) in order to increase awareness and to encourage increased green buying behavior and practices. This should be driven by the Department of Education in partnership with the Department of Environmental Affairs and Tourism (DEAT).

6.4.2.2 Research and development

The findings of this study clearly indicated that further research needs to be undertaken in various areas relating to climate change. These are dealt with in more detail in 6.6. However, it is recommended that this should be well coordinated to avoid any duplication of effort. This could be driven at a national level through universities and business schools. Furthermore, development and demonstration projects could practically demonstrate the advantages and acceptability of new green technologies. This could help increase their sales. Moreover, a national research programme could provide for public participation to identify additional opportunities and priorities for government and business.

6.4.3 Objective 3: Consumer Response & Behaviour

6.4.3.1 Providing product information & Communication

This study found that consumers were not fully aware of green alternatives and were not using solar heating and green cleaning detergents as much as they should be. Accordingly, business first needs to educate consumers, before looking at sales. They need to provide information about their green products, but also about the larger issue of climate change, pollution, exploitation of resources, and other environmental problems. They need to ensure that environmental concern becomes more heavily weighted in the buying decisions of consumers. Accordingly, it is recommended that as part of their green marketing strategies and plans that businesses should include extensive education and awareness campaigns. Marketers need to be educators before they become salespeople. This must be undertaken in addition to the green education initiatives undertaken by government and educational institutions.

Green marketers should communicate to their target audience the fact that purchasing green products would have a meaningful and positive impact on the environment. Accordingly, a well-targeted advertising campaign is recommended that could be used by marketers to encourage positive attitudes and concern about the environment and hence positive green behaviours.

6.4.3.2 Green vehicles

Since the study indicated there was a significant market for green vehicles, it is recommended that companies selling such vehicles should start planning and investing in the infrastructure to support such a change in vehicle purchases. This includes maintenance facilities to service such vehicles. For example, battery charging centres as many people would not have the space in their homes to put in a battery charging facility. They also need to ensure that there are sufficient mechanics skilled to service such vehicles. Suppliers would also

need to ensure that sufficient spare parts were available. Such companies will benefit from the positive environmental and technological leadership image that would bolster their overall positioning in the marketplace.

6.4.3.3 Encouraging public transport (carrot) and discouraging the use of private vehicles (stick)

The study shows a need to increase the use of public transport and conversely reduce the number of private cars used. Some recommendations to achieve this in the Ethekwini Municipality in particular are as follows:-

(i). Road and vehicle operations improvement

- Traffic robot timings be adjusted to minimize long queues, especially at key intersections like the Gateway/N2/M4 intersection, and the Argyle Road/Ruth First Freeway intersection in Durban. This will help by facilitating smoother traffic flows and lower carbon emissions.
- Improved accident management methods to respond and remove accidents quickly. This would reduce traffic build up and the amount of fumes emitted.
- Educating drivers about the environmental benefits of driving in a steady and controlled manner thus burning less fuel should be made part of the learner driver license curriculum.

(ii). Demand management

- Modal substitution through encouraging cycling and walking instead of driving personal vehicles.
- Encourage the use of rail freight transport to reduce the number of trucks on the roads.
- Lead by example and encourage staff to work from home and use teleconferencing and videoconferencing for meetings thus eliminating the need for staff to travel by vehicle to work and use their personal vehicles or air transport for meetings.

- Encourage distance learning at secondary and tertiary level thus eliminating the need for pupils and students to travel to school or university. Lectures or lessons could be done through the internet, and/or social networks such as Facebook or Twitter. The infrastructure and software costs should be included in the fees. Cost could also be subsidised by marketing and advertising opportunities for businesses.

(iii). Land use

- Municipalities should encourage compact developments (densification) as denser development results in fewer or shorter vehicle trips. Improved safety and security would also encourage more cycling and walking instead of using vehicles.
- Encourage mixed use development which would encourage greater cycling and walking as all amenities would be in close enough proximity.

(iv) Other

- Park and ride facilities based at shopping malls (such as The Pavilion, and Gateway) could be set up for workers in the CBD to utilise. Further, in terms of new age benefits, and corporate social responsibility, the cost-benefit analysis of employers providing a free or subsidized bus service could be considered.
- Dedicated lanes could be reserved for vehicles with at least four occupants during peak traffic hours. This would encourage more car pooling, smoother traffic flow and lower carbon emissions.
- Low emission zones could be declared in the CBD wherein cars would not be allowed. One would have to walk, cycle or use public transport. However, this should not impact negatively on business.
- Introduce a tax on workplace car parking, as well as parking garages. This would increase the cost of parking and may force people to use alternate modes of transport.

6.4.4 Objective 4: Green Buying Behaviour

6.4.4.1 Creating green brand awareness

The lack of importance of environmental concerns as a factor in the buying decisions of consumers suggests that green marketers and consumers need to enhance their engagement with consumers. Marketers are responsible for engaging with consumers to enhance green brand awareness, change green perceptions and attitudes and motivate green purchases. Accordingly, it is recommended that improved communication, the education of consumers and eco-labeling of products could assist in this regard:-

6.4.4.2 Consumer Value Positioning

Respondents clearly indicated that quality and cost were the two most important factors influencing their green buying behavior. This means that green manufacturers and marketers must get the pricing and quality of their green products right. Accordingly, it is recommended that marketers need to clearly demonstrate to consumers the long-term value of their green products, or their return on investment. For example, green appliances, hybrid vehicles, low-flow showerheads, and fluorescent light bulbs are generally more expensive than the comparative non-green products. Accordingly, it is recommended that marketers need to demonstrate that although they have higher price tags, over the useful life of the green product, it would actually offer greater value-for-money as compared to the cheaper option. Examples include the operating cost savings on a green car, the water savings of a low-flow showerhead, and the lower electricity costs due to fluorescent light bulbs. In other words, marketers must make a clear business case for green products and practices. Hence, it is recommended that green marketers redefine the notion of value, and their advertising campaigns should pose to consumers questions like, “Are inexpensive appliances really good value if they use far more energy and drive up your electricity bill?” Moreover, the benefits must be tangible. For example, the Toyota Prius displays

realtime fuel economy information on the dashboard. Accordingly, to increase the sales of green products manufacturers and marketers must ensure that the consumers concerned fully appreciate the return on their investment, both financially and environmentally. When consumers are able to do this, they will be more willing to try new green products, in particular those that cost more. They will also feel better about their purchase choices when they appreciate how the products they purchased help the environment. In other words, marketers need to build a green brand that consumers can trust and rely on in terms of quality and performance. However, manufacturers also need to innovate in terms of producing cost effective green products. This means that the manufacturing processes for green products needs to be constantly reviewed and improved upon. To improve consumers' perceptions of green products it is recommended that manufacturers must create green products that are at least equal to, or better than, non-green alternatives. This means that they must keep innovating.

6.4.4.3 Act ethically

The findings of this study clearly indicated that the respondents were not willing to do business with companies that acted in an environmentally unfriendly manner. Accordingly, it is recommended that green marketers need to communicate to their market the green initiatives they have undertaken and the green benefits of their products. In addition, a green manufacturer could positively differentiate itself from it's competitors through the sponsorship of green related events to show its commitment towards the environmental, community and social wellness. This would help to expose and promote their green products and brands to consumers. Renowned brands could be at risk if they are seen to be less green than their competitors. Accordingly, companies need to keep a watchful eye on their competitors for any indication that their competitors are increasing their commitment towards a green agenda.

6.4.4.4 Make green the norm

The study found that climate change did not significantly impact on the buying behavior of the respondents. Accordingly, it is recommended that green should be made the default choice. Consumers need to choose to be non-green. An example is plastic bags in shops. They are not provided, and if you want them you have to pay for them. Green should be made to be the norm, and not seen as the behavior of hippies or green crusaders. Hence it is also recommended that marketers should make consumers feel like everyone's doing it. This will help increase green purchases by assisting in the change management process.

6.4.4.5 Incentives & Disincentives

It is recommended that green marketers should also offer incentives to encourage green behaviourial change, such as prizes, rewards, and public recognition. Such a cost per engagement model could be especially relevant for emerging green products with low awareness as it incentivizes consumers to engage. On the other hand, small doses of guilt and shame could also encourage such changes, for example, by reminding consumers of the green choices available to them and the horrific legacy they are choosing to leave behind to their children by making non-green choices.

It is also recommended that government should provide incentives to encourage green behaviours. For example, it could provide tax rebates for buying green vehicles. It could also zero-rate certified green products in respect of value added tax (VAT). Like solar heating, subsidies could also be provided for other green products and practices, such as water reservoirs, and recycling. Other more creative incentives could include a dedicated lane (which already exists for cyclists and buses in Durban) for use by green vehicles during peak hour traffic. Municipalities could also ensure that all future developments have preferential parking available for green vehicles. The simplest disincentive is to increase the price of petrol to make the use of normal petrol and diesel vehicles unaffordable to the majority of the people. This could be achieved by including a green tax or

levy in the petrol price. Regulators need to address the strategic and tactical challenges by balancing the goals of environmental protection, energy savings, and positioning the South African automobile industry as a centre for new technologies.

In terms of research into the impact of incentives and disincentives on behavioral change, the focus should be on incentives as consumers are loss averse.

6.4.4.6 Accessibility and availability of green products

The study found that people would buy more green products if such products were more easily identifiable and accessible. Furthermore, respondents indicated that a lot of the green products were not available in all retail stores. Needless to say, if consumers cannot find green products, companies would not be able to sell them. Accordingly, marketers need to ensure that green products are prominently displayed on shelves and are readily available in terms of having sufficient stock available to meet the demand. In this regard, the coveted eye-level shelves are recommended for green products. In other words, green manufacturers and marketers need to take green products to the people and drive the change in their green buying behaviour.

6.4.4.7 Driving green behaviour

It is recommended that government should lead by example and drive the move towards enhanced green buying by consumers. This could be achieved by setting up an energy and climate change office in every municipality. Funding of initiatives undertaken by such offices should be provided on a draw-down basis from a national fund. Alternatively funding from international agencies could be pursued at a national level. Moreover, government could lead by example in terms of green procurement and sustainable development.

Green procurement is a tender process whereby government strategically procures green goods and services from green suppliers. Green procurement by

government would certainly address the issue of corporate social responsibility, but also stimulate the demand for green products and drive the growth of the local green market. Thus, it is recommended that municipalities amend their procurement policies to accommodate green procurement to ensure that environmental requirements are a part of every tender and contract. This has the potential benefit of turning cities into environmentally-friendly zones and creating green jobs.

6.4.4.8 Encourage local procurement

In addition to green procurement, governments should lead by example and procure mainly locally produced goods. This is in line with the “Proudly South African” and “Local is lekker” campaigns. This would reduce the carbon miles of goods procured and it would stimulate the local economy thus creating more jobs. Buying locally should be included in the Municipality’s procurement policy whereby preferential points are awarded to companies located within the City or who have their head offices or branch offices in the City.

6.4.5 Objective 5: Impact of Eco-labeling

The respondents indicated that the current labeling of green products was considered to be poor to very poor, and that improved labeling would result in them buying more green products.

6.4.5.1 Eco-labeling

The labeling must be trusted and be devoid of greenwashing. It must be simple, clear, and honest. Independent certification and ISO accreditation would be useful to ensure that consumers do not view claims with suspicion or sceptism. The study also indicated that eco-labeling would increase the purchase of green products by consumers through providing the consumer with more information that they can trust and making the green product more recognisable. Accordingly, it is recommended that ISO accredited eco-labeling be undertaken by businesses looking to gain a competitive advantage through green products.

It is also recommended that government should promulgate regulations to make eco-labeling compulsory. Moreover, such labeling should be ISO 14000 accredited. This would provide consumers with a trusted basis on which to make informed product and lifestyle choices to manage their overall carbon footprint. Eco-labeling was developed to curb green washing. The practice is standardized by ISO 14024 and is recognized worldwide. Moreover, government could undertake campaigns to promote public awareness of eco-labels, especially in view of the apparent trust the respondents to this study have in eco-labels. The increased awareness of eco-labels could help in promoting green consumption.

6.4.5.2 Independent assurance of green products

It is recommended that government should support the development of credible standards which would enable consumers to make informed choices. This could be achieved through the South African Bureau of Standards (SABS) which could certify green products and test the claims made by green marketers.

6.5 Recommendations for Future Studies

Some of the issues raised through this study suggest that the following research areas may provide greater insight for all green stakeholders:-

6.5.1 Determine the relationship between environmental concern and green buying behavior.

6.5.2 The applicability of the Theory of Reasoned Action to explain the green buying behavior of consumers, and the applicability of other elements, such as environmental protection and awareness, self-image, ecological effect, environmental label, environmental knowledge and environmental concern.

6.5.3 Determine the impact of collectivism on the green buying behavior of consumers.

6.5.4 Determine whether a green culture should be driven by consumer demand, government, or green manufacturers in the South African market.

6.5.5 Determine the impact of global green marketing and labeling standards in terms of assisting South African retailers and consumers.

6.5.6 Investigate whether a green tax or green tax rebates should be introduced in South Africa and the benefits thereof.

6.5.7 Determine which incentives would encourage consumers to buy green cars.

6.5.8 Identify the risks and rewards of manufacturers adopting a first-mover green marketing strategy.

6.5.9 Determine which additional aspects relative to companies and their green products would also influence consumers' willingness to pay a premium for green products. This includes variables such as brand image and advertising campaigns.

6.5.10 Due to ethics and privacy involved, data relating to the income of respondents was not collected. Accordingly, future studies could look at the relationship between people's income and their willingness to buy green products, especially green vehicles.

6.5.11 The study could be replicated, but focus on the entire country instead of just Durban.

6.6 Summary

The objectives of this study were met and the research question was answered. However, in some instances further research is required. Moreover, this study has important implications for several stakeholders. It could help green manufacturers and marketers to develop new strategies in respect of product design, development, promotion and selling. It could help government improve consumers' green buying behavior through educating consumers and through developing the appropriate policies and regulations. It could also help educational institutions to refine and expand the TRA model, and help educate consumers through additional research and development projects. Finally, based on the findings of the study, recommendations were made on how consumer green purchasing behavior and practices could be enhanced by business, government and educational institutions. Although the study has limitations, it most importantly found that environmental concerns did not weigh heavily in the buying decisions of the respondents. Hence the challenge is for business, government and educational institutions to work together and change this. Recommendations were made in this regard.

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APPENDIX – 1
QUESTIONNAIRE

UNIVERSITY OF KWAZULU-NATAL
GRADUATE SCHOOL OF BUSINESS

Masters in Business Administration (MBA) Research Project
Researcher: Vijay Anand Punchee (031 311 1131)
Supervisor: Prof Anesh Maniraj Singh (031 260 7564)
Research Office: Ms P Ximba 031-2603587

The Effect of Climate Change: Durban Consumers' Perceptions and Buying Behaviour

The purpose of this survey is to solicit information from Durban consumers regarding the impact of climate change on their green buying behaviour. The information and ratings you provide us will go a long way in helping us identify business opportunities and inform the future marketing and development of green products in the Durban and South African markets. The questionnaire should only take 10-15 minutes to complete. In this questionnaire, you are asked to indicate what is true for you, so there are no "right" or "wrong" answers to any question. Work as rapidly as you can. If you wish to make a comment please write it directly on the booklet itself. Make sure not to skip any questions. Thank you for participating.

Please tick the answer/s that is most applicable to you, unless otherwise requested in the question. There are no "right" or "wrong" answers.

1. Age?
   - o Under 20
   - o 21 to 30
   - o 31 to 40
   - o 41 to 50
   - o over 50

2. Gender?

- Female
- Male

3. Race?

- African
- Coloured
- Indian
- White
- Other

4. What is your highest level of education?

- No schooling
- Matric
- Diploma
- Undergraduate Degree
- Post Graduate Degree

5. Which of these statements best describes your view of climate change?

- It does not exist
- It exists and is created by human activity
- It exists, but is caused by natural causes, and thus nothing can be done about it
- It exists, but more scientific proof is required to make it an irrefutable fact
- I am unsure

6. Which statement best describes your view on the impact of climate change?

- o There is nothing to worry about
- o The impact of climate change has been exaggerated by climate scientists
- o Climate change will have no impact on me in my lifetime
- o Climate change is already having a huge impact

7. In Durban, which do you believe is the most important issue government should address? Rank the following options from 1 to 5 with 1 being the most import and 5 being the least important:-

ISSUE	RANKING
Crime	
Unemployment and poverty	
Climate change and global warming	
HIV-Aids	
Financial / economic issues	

8. In Durban, which do you believe is the most important environmental issue that needs to be addressed? Select one answer only.

- o Air pollution
- o Pollution of rivers and beaches
- o Energy problems
- o Climate change and global warming
- o Damage to the ozone layer
- o Natural disasters, such as tsunamis, earthquakes, etc.

9. Which statement best describes your response to climate change?

- o I do not care
- o I feel guilty, but not enough to make lifestyle changes
- o I have tried to make some lifestyle changes
- o I have made quite a few changes, and will continue to do so
- o I have stopped buying products that are harmful to the environment

10. What sort of vehicle do you use as your primary means of transport?

- o None
- o Motorcycle
- o Public transport: bus/taxi/train
- o Petrol car
- o Diesel car
- o Petrol SUV
- o Diesel SUV
- o Hybrid / electrical car

11. On your next purchase of a vehicle, what are the chances that you will purchase an environment friendly vehicle?

- o Most definitely not
- o Most likely not
- o Undecided
- o Most likely
- o Most definitely

12. Which of the following environment protection measures do you practice at home? Tick the applicable measures from the list below:-

- o I have solar heating
- o I have “clean” sources of energy
- o I have reduced my electricity consumption in my home in the past 12 months
- o I use energy-saver light bulbs
- o I recycle waste
- o I use environment friendly cleaning agents
- o I don’t perform any environment protection actions at home
- o I perform other environment protection actions at home

13. Which of the following statements best describes your green buying behaviour?

- o I understand what green products are, but have never considered buying them
- o I have considered buying green products, but have never actually bought them
- o I used to buy green products earlier, but have not bought them recently
- o Some of the products I currently buy are green
- o Most of the products I currently buy are green

14. Which is the most important factor in your buying decisions?

- o Cost
- o Quality
- o Durability
- o Convenience
- o Health and safety
- o Impact on the environment

15. Which do you consider the greatest deterrent to you purchasing more green products?

- o Cost of green products
- o The product quality is generally lower
- o Lack of information about the product and difficulty in identifying such products
- o They are not easily available
- o There are not many choices or variants
- o I am sceptical about green marketing claims

16. Would you buy a product or shares from a company if you knew it acted unethically towards the environment?

- o Most definitely not
- o Most likely not
- o Undecided
- o Most likely
- o Most definitely

17. Are you willing to pay a premium for green products?

- o Most definitely not
- o Most likely not
- o Undecided
- o Most likely
- o Most definitely

18. How would you describe the labeling of green products in South Africa?

- o Very Poor
- o Poor
- o Satisfactory
- o Good
- o Excellent

19. Will the improved labeling of green products help you?
    - o Yes, it will help me make more informed buying decisions
    - o Yes, it will help me more easily identify green products which will result in me buying more green products
    - o Yes, I would like to see a certified label, such as the SABS label, on all green products
    - o No, labeling is useless as companies make false claims about the environmental impact of their products
    - o No, labeling of products has no impact on my green buying decisions

End of the Questionnaire

Thank you for the time to complete the questionnaire.

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

APPENDIX – 2

ETHICAL CLEARANCE

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4 May 2011

Mr VA Punchee (9041717)
Graduate School of Business
Faculty of Management Studies

Dear Mr Punchee

PROTOCOL REFERENCE NUMBER: HSS/0185/011M
PROJECT TITLE: The Effect Of Climate Change on Durban Consumers' Buying Behaviour

In response to your application dated 3 May 2011, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL.**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the 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 school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....

Professor Steven Collings (Chair)
HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE

cc. Supervisor: Prof AM Singh
cc. Mrs Christel Haddon

APPENDIX 3
SAMPLE SIZE TABLE

Required Sample Size†

Population Size	Confidence = 95% Margin of Error				Confidence = 99% Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173
3,500	346	641	1068	2565	558	977	1510	2890
5,000	357	678	1176	3288	586	1066	1734	3842
7,500	365	710	1275	4211	610	1147	1960	5165
10,000	370	727	1332	4899	622	1193	2098	6239
25,000	378	760	1448	6939	646	1285	2399	9972
50,000	381	772	1491	8056	655	1318	2520	12455
75,000	382	776	1506	8514	658	1330	2563	13583
100,000	383	778	1513	8762	659	1336	2585	14227
250,000	384	782	1527	9248	662	1347	2626	15555
500,000	384	783	1532	9423	663	1350	2640	16055
1,000,000	384	783	1534	9512	663	1352	2647	16317
2,500,000	384	784	1536	9567	663	1353	2651	16478
10,000,000	384	784	1536	9594	663	1354	2653	16560
100,000,000	384	784	1537	9603	663	1354	2654	16584
300,000,000	384	784	1537	9603	663	1354	2654	16586

Professional researchers typically set a sample size level of about 500 to optimally estimate a single population parameter (e.g., the proportion of likely voters who will vote for a particular candidate). This will construct a 95% confidence interval with a Margin of Error of about ±4.4% (for large populations).

Since there is an inverse relationship between sample size and the Margin of Error, smaller sample sizes will yield larger Margins of Error. For example, a sample size of only 100 will construct a 95% confidence interval with a Margin of Error of almost ±13%, too large a range for estimating the true population proportion with any accuracy.