

# The role of values, beliefs and norms in female consumers' clothing disposal behaviour

Meyer, J (27017215)

Dissertation

M Consumer Science (Clothing Retail Management)

Supervisor: Dr. A Retief

Co-Supervisor: Ms. N Sonnenberg

2013

The role of values, beliefs and norms in female consumers' clothing  
disposal behaviour

by

Jonette Meyer

Dissertation submitted for fulfilment of the requirement for the degree

M Consumer Science (Clothing Retail Management)

in the

Department of Consumer Science

Faculty of Natural and Agricultural Science

University of Pretoria

Pretoria

2013

---

# Declaration

---

I, Jonette Meyer, declare that the contents of this dissertation represent my own work, and that this dissertation has not previously been submitted for academic examination towards any qualification or publication. I confirm that:

1. This dissertation was done exclusively for M Consumer Science: Clothing Retail Management research degree at the University of Pretoria.
2. Where I have referred to or quoted the published work of others, it was always clearly accredited.
3. The work of this dissertation is my own, while acknowledging the contribution of causative supervisors.



Jonette Meyer

2013

---

# Acknowledgements

---

I wish to thank:

- My supervisor Dr. Arda Retief for her knowledge, guidance, patience and support.
- My co-supervisor Ms. Nadine Sonnenberg for her knowledge, support, and belief in the study.
- Professor Helena de Klerk for her kindness and encouragement.
- Dr. Mike van der Linde for his time, insight and support during data processing.
- My fellow postgraduate students and colleagues at the University of Pretoria for their encouragement.
- My family and friends for enduring the postgraduate journey with love and support.
- G.C. Schoeman for always reminding me to have faith.
- My parents who, without their support, I would not have been able to complete the study.
- The Lord above for giving me strength, courage and wisdom during this journey.

Dedicated to my brother Niël abroad,  
for although you are far away,  
you are always close at heart

---

# Summary

---

The role of values, beliefs and norms in female consumers'  
clothing disposal behaviour

by

Jonette Meyer

Supervisor: Dr. A Retief

Co-Supervisor: Ms. N Sonnenberg

Department: Consumer Science

Degree: M Consumer Science (Clothing Retail Management)

In previous years, the importance of sustainable consumption has been neglected, and as a result, so has the disposal process. This has led to consumers being uneducated about environmental issues associated with waste problems. The textile industry greatly contributes to waste problems; however, very little information is available in South Africa concerning the waste management of the textile industry. Furthermore, very little research has been done in this country regarding consumer's clothing disposal behaviour. South Africa is a country with various cultures, and research conducted in this country necessitates consideration of consumers' values, beliefs and norms. This study acknowledges the lack of sustainable lifestyle literature in a country such as South Africa that has an emerging economy and diverse cultures, and therefore provides a framework that emphasises theories and models based on pro-environmental behaviour. The framework for this study focuses on the concepts of the Value-Belief-Norm Theory and the New Ecological Paradigm Scale as influencing factors for clothing disposal behaviour. For this study the clothing disposal methods included re-using, recycling, donation, reselling and discarding.

Furthermore, both the Value-Belief-Norm Theory and the New Ecological Paradigm Scale are new to the consumer behaviour research field in South Africa.

The study was conducted in the City of Tshwane and a sample of 306 female consumers was included. Female consumers were selected as it has been found that females tend to be more environmentally concerned than men. Respondents were reached through non-probability, purposive and snowball sampling methods. A quantitative research approach that included a cross-sectional survey design was used for descriptive and exploratory purposes. Respondents completed a questionnaire that was based on objectives compiled according to the research statement. Data was coded by the researcher herself, and was further descriptively and statistically analysed by statisticians of the University of Pretoria.

The results for the study indicated that the majority of the consumers included in the study mainly indicated compassionate value orientations; however, they showed only moderate concern towards the environment. Nevertheless, results showed that the majority of the sample predominantly disposes of their clothing by means of pro-environmental clothing disposal methods such as recycling, re-using and donation. It was however found that different value orientations, beliefs and norms had varied influences on the clothing disposal behaviour. Ultimately, the findings indicated that it is relevant to explore consumer behaviour in a country with a growing economy and with various cultures, since values, beliefs and norms had a noteworthy influence on consumers' clothing disposal behaviour.

**Keywords:** *biospheric; egoistic; altruistic; beliefs; norms; pro-environmental; disposal behavior; recycling*

---

# Table of Contents

---

<i>Declaration</i> .....	<i>i</i>
<i>Acknowledgements</i> .....	<i>ii</i>
<i>Summary</i> .....	<i>iv</i>
<i>List of Tables</i> .....	<i>ix</i>
<i>List of Figures</i> .....	<i>xi</i>
<i>List of Addenda</i> .....	<i>xii</i>
1. <i>Chapter 1: The Study in Perspective</i>	
1.1 INTRODUCTION .....	1
1.2 THEORETICAL BACKGROUND .....	3
1.3 RESEARCH PROBLEM .....	5
1.4 JUSTIFICATION OF THE RESEARCH.....	6
1.5 RESEARCH OBJECTIVES .....	7
1.6 PRESENTATION AND OUTLINE OF THE DISSERTATION.....	9
1.7 DEFINITIONS OF TERMS AND CONCEPTS .....	10
1.8 CONCLUSION .....	12
2. <i>Chapter 2: A Review of Literature</i>	
2.1 INTRODUCTION .....	13
2.2 CLOTHING AND TEXTILE WASTE .....	13
2.3 TEXTILE RECYCLING .....	15
2.4 WASTE MANAGEMENT IN THE SOUTH AFRICAN EMERGING MARKET CONTEXT .....	17
2.5 CLOTHING DISPOSAL BEHAVIOUR .....	18
2.5.1 Discarding.....	20
2.5.2 Reselling .....	20
2.5.3 Re-using.....	20
2.5.4 Donating.....	21
2.5.5 Recycling.....	21
2.6 SUPPORTING THEORIES.....	22
2.6.1 The Value-Belief-Norm (VBN) Theory.....	24
2.6.1.1 Values related to pro-environmental behaviour.....	25
a) Egoistic value orientation .....	26
b) Altruistic value orientation.....	27
c) Biospheric value orientation.....	27
2.6.2 The New Ecological Paradigm (NEP).....	28
2.6.3 Awareness of consequence and ascription of responsibility.....	29
2.6.4 Personal norms.....	30
2.7 PRO-ENVIRONMENTAL CLOTHING DISPOSAL BEHAVIOUR AS A RESULT OF VALUES, BELIEFS AND NORMS .....	31
2.8 THE CONCEPTUAL FRAMEWORK.....	32
2.9 RESEARCH OBJECTIVES .....	33
2.10 CONCLUSION .....	34



3.	<i>Chapter 3: Research Design and Methodology</i>	
3.1	INTRODUCTION .....	36
3.2	RESEARCH DESIGN .....	36
3.3	METHODOLOGY.....	37
3.3.1	Sample and sampling.....	37
3.3.2	Questionnaire development.....	38
3.3.3	Data collection.....	43
3.3.4	Data analysis.....	43
3.4	ENHANCING THE QUALITY OF THE DATA .....	46
3.5	ETHICAL CONSIDERATIONS.....	47
3.6	CONCLUSION .....	48
4.	<i>Chapter 4: Results and Interpretations</i>	
4.1	INTRODUCTION .....	49
4.2	CHARACTERISTICS OF THE SAMPLE .....	49
4.2.1	Gender.....	49
4.2.2	Age.....	50
4.2.3	Marital status and children .....	50
4.2.4	Population group/ethnicity .....	51
4.2.5	Household income.....	52
4.2.6	Level of education .....	52
4.2.7	Area of residence.....	53
4.3	RESULTS, DISCUSSIONS AND INTERPRETATIONS.....	54
4.3.1	Results based on value orientations of female consumers who engage in clothing disposal behaviour .....	54
4.3.2	Relationship between demographic variables and the three value orientations .....	57
4.3.2.1	Relationship between demographic characteristics of the sample and biospheric values (Factor 1) .....	59
4.3.2.2	Relationship between demographic characteristics of the sample and egoistic values (Factor 2) .....	60
4.3.2.3	Relationship between demographic characteristics of the sample and altruistic values (Factor 3) .....	61
4.3.3	Results based on the ecological worldview of female consumers who engage in clothing disposal behaviour .....	61
4.3.4	Relationship between demographic characteristics of the sample and the NEP Scale.....	64
4.3.5	Results based on awareness of consequences (AC), ascription of responsibility (AR), and personal norm (PN) .....	66
4.3.6	Relationship between demographic characteristics of the sample and beliefs and norms .....	68
4.3.6.1	Relationship between demographic characteristics of the sample and general beliefs (Factor 1) .....	69
4.3.6.2	Relationship between demographic characteristics of the sample and personal norms (Factor 2) .....	70
4.3.6.3	Relationship between demographic characteristics of the sample and awareness beliefs (Factor 3) .....	71
4.3.7	Results based on clothing disposal behaviour.....	71
4.3.8	Relationship between demographic characteristics of the sample and the disposal methods .....	74

4.3.8.1 Relationship between demographic characteristic of the sample and reselling (Factor 1) .....	75
4.3.8.2 Relationship between demographic characteristics of the sample and recycling (Factor 2) .....	75
4.3.8.3 Relationship between demographic characteristics of the sample and donation (Factor 3) .....	77
4.3.8.4 Relationship between demographic characteristics of the sample and discarding (Factor 4) .....	78
4.3.8.5 Relationship between demographic characteristics of the sample and re-using (Factor 5) .....	79
4.3.9 Correlation between value orientations and clothing disposal methods, the mean of the NEP Scale and clothing disposal methods, beliefs and norms and clothing disposal methods .....	80
4.4 CONCLUSION .....	83
5. <i>Chapter 5: Conclusions</i> .....	84
5.1 INTRODUCTION .....	84
5.2 CONCLUSIONS .....	85
5.2.1 Influence of values on consumers' clothing disposal behaviour .....	85
5.2.2 Consumers' ecological worldview in clothing disposal behaviour .....	87
5.2.3 Female consumers' beliefs regarding the consequences of clothing disposal behaviour and the personal norms that guide such behaviour.....	87
5.2.4 Specific methods female consumers use to dispose of their unwanted clothing items .....	88
5.3 CONTRIBUTION TO EXCISING THEORY .....	89
5.4 PRACTICAL IMPLICATIONS ASSOCIATED WITH THE STUDY .....	90
5.5 LIMITATIONS OF THE STUDY .....	91
5.6 SUGGESTION FOR FUTURE RESEARCH .....	92
5.7 CONCLUSION .....	93
6. <i>List of References</i> .....	94

---

# List of Tables

---

<b>TABLE</b>	<b>TITLE</b>	<b>PAGE</b>
TABLE 1.1	TERMS, CONCEPTS AND ACRONYMS .....	10
TABLE 3.1	OPERATIONALISATION TABLE .....	44
TABLE 4.1	AGE CATEGORIES OF RESPONDENTS .....	50
TABLE 4.2	MARITAL STATUS OF RESPONDENTS .....	51
TABLE 4.3	CHILDREN IN HOUSEHOLD .....	51
TABLE 4.4	REPRESENTATION OF POPULATION GROUP .....	52
TABLE 4.5	MONTHLY HOUSEHOLD INCOME .....	52
TABLE 4.6	REPRESENTATION OF LEVEL OF EDUCATION .....	53
TABLE 4.7	FACTOR ANALYSIS FOR THREE VALUE ORIENTATIONS .....	56
TABLE 4.8	MANOVA MODEL FOR DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND THE VALUE ORIENTATIONS.....	58
TABLE 4.9	RELATIONSHIP BETWEEN DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND THE VALUE ORIENTATIONS .....	58
TABLE 4.10	THE RELATIONSHIP BETWEEN BIOSPHERIC VALUES AND DEMOGRAPHICS (ETHNIC GROUP AND AGE GROUP) .....	59
TABLE 4.11	THE RELATIONSHIP BETWEEN EGOISTIC VALUES AND DEMOGRAPHICS (HOUSEHOLD INCOME AND MARITAL STATUS) .....	60
TABLE 4.12	THE RELATIONSHIP BETWEEN ALTRUISTIC VALUES AND DEMOGRAPHICS (NUMBER OF CHILDREN) .....	61
TABLE 4.13	NEP SCALE ITEM ANALYSIS .....	62
TABLE 4.14	MANOVA MODEL FOR DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND THE MEAN OF THE NEP SCALE.....	64
TABLE 4.15	THE RELATIONSHIP BETWEEN OVERALL MEAN SCORE FOR THE NEP SCALE AND DEMOGRAPHIC CHARACTERISTICS .....	65
TABLE 4.16	THE RELATIONSHIP BETWEEN OVERALL MEAN SCORE FOR THE NEP SCALE AND DEMOGRAPHICS (ETHNIC GROUP AND AGE GROUP) .....	65
TABLE 4.17	FACTOR ANALYSIS OF GENERAL BELIEFS, PERSONAL NORMS AND AWARENESS BELIEFS.....	67
TABLE 4.18	MANOVA MODEL FOR DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND BELIEFS AND NORMS .....	68
TABLE 4.19	RELATIONSHIP BETWEEN DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND BELIEFS AND NORMS .....	69
TABLE 4.20	THE RELATIONSHIP BETWEEN GENERAL BELIEFS AND DEMOGRAPHIC CHARACTERISTICS (NUMBER OF CHILDREN) .....	69
TABLE 4.21	THE RELATIONSHIP BETWEEN PERSONAL NORMS AND DEMOGRAPHIC CHARACTERISTICS (AGE GROUP) .....	70
TABLE 4.22	THE RELATIONSHIP BETWEEN AWARENESS BELIEFS AND DEMOGRAPHIC CHARACTERISTICS (ETHNIC GROUP).....	71
TABLE 4.23	FACTOR ANALYSIS OF CLOTHING DISPOSAL METHODS .....	73

TABLE 4.24	MANOVA MODEL FOR DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND CLOTHING DISPOSAL METHODS .....	74
TABLE 4.25	RELATIONSHIP BETWEEN DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND CLOTHING DISPOSAL METHODS .....	74
TABLE 4.26	THE RELATIONSHIP BETWEEN RECYCLING AS CLOTHING DISPOSAL METHOD AND DEMOGRAPHIC CHARACTERISTICS (AGE GROUP AND ETHNIC GROUP) .....	76
TABLE 4.27	THE RELATIONSHIP BETWEEN DONATION AS CLOTHING DISPOSAL METHOD AND DEMOGRAPHIC CHARACTERISTICS (NUMBER OF CHILDREN AND ETHNIC GROUP).....	77
TABLE 4.28	THE RELATIONSHIP BETWEEN DISCARDING A CLOTHING DISPOSAL METHOD AND DEMOGRAPHIC CHARACTERISTICS (ETHNIC GROUP, AGE GROUP AND LEVEL OF EDUCATION) .....	78
TABLE 4.29	THE RELATIONSHIP BETWEEN RE-USING AS CLOTHING DISPOSAL METHOD AND DEMOGRAPHIC CHARACTERISTICS (AGE GROUP) .....	79
TABLE 4.30	MEAN AND STANDARD ERROR OF VALUE ORIENTATIONS, THE NEP SCALE, BELIEFS AND NORMS AND CLOTHING DISPOSAL METHODS .....	81
TABLE 4.31	CORRELATION BETWEEN VALUE ORIENTATIONS AND CLOTHING DISPOSAL METHODS; MEAN OF THE NEP SCALE AND CLOTHING DISPOSAL METHODS; BELIEFS AND NORMS AND CLOTHING DISPOSAL METHODS.....	82

---

# List of Figures

---

<b>FIGURE</b>	<b>TITLE</b>	<b>PAGE</b>
FIGURE 2.1	ADAPTATION OF THREE BROAD DISPOSAL OPTIONS .....	19
FIGURE 2.2	ADAPTATION OF THE NORM-ACTIVATION THEORY .....	24
FIGURE 2.3	CONCEPTUAL FRAMEWORK .....	35
FIGURE 4.1	AREA OF RESIDENCE WITHIN GREATER TSHWANE METROPOLITAN AREA .....	53
FIGURE 4.2	SUMMED NEP SCORES .....	63
FIGURE 4.3	MEAN NEP SCORES .....	63

---

# List of Addenda

---

Addendum A: Questionnaire.....	106
Addendum B: Procrustes rotation.....	111
Addendum C: Model indicating the division of the three value orientations.....	112
Addendum D: Ethical compliance .....	115
Addendum E: Agreement to plagiarism-free research.....	117

## Chapter 1

---

# The Study in Perspective

---

*This chapter includes a general introduction to the study. The theoretical background for the study is explained and the research problem introduced. The aim of the study and the main objectives are briefly explained. The structure of the dissertation is also provided.*

### 1.1 INTRODUCTION

Since 2008, economic markets around the world have been struggling due to issues such as financial crises, recessions and economic decline (PricewaterhouseCoopers (PwC), 2012: vi). Although most of these problems occurred overseas, they undoubtedly had an effect on the South African market (PwC, 2012: vi), but the country has until now successfully avoided extreme downfalls (PwC, 2012: 4). In 2010 the image of South Africa changed drastically when the country hosted a triumphant FIFA World Cup, earning a place among the BRICS (Brazil, Russia, India, China and South Africa) emerging economies (National Statistics Offices of the BRICS Group, 2013; PwC, 2012: 4). These economies are characterised by immense economic growth and increased consumption patterns, especially among the middle- to higher income consumer segments (World Wide Fund for Nature (WWF), 2012: 50). Although increased consumption contributes to the economic growth of the country, it also has several other repercussions, not least of which is the problem of escalating consumer waste.

Waste and the disposal of end-products represent an important issue in the environmental domain (Ganiaris & Okun, 2001: 12). Excessive waste leads to several problems such as uncontrolled dumping on landfills, contamination of air, water and land, weak infrastructure and health risks (Muniafu & Otiato, 2010: 346). Abroad, the United States Environmental Protection Agency (EPA) (2011) reported that their total municipal solid waste for 2011 was 250.42 million tons, of which 86.90 million tons were recovered, and 163.52 million tons were discarded. Out of the total amount of waste, textiles constituted 13.09 million tons, of which only 2 million tons were recovered (EPA, 2011: 7). This EPA report suggests that the greater part of America's waste is discarded. Some empirical evidence seems to indicate that the situation in South Africa might be similar. A study among South African clothing

manufacturers revealed that more than half of their waste ended up on landfills (Larney & Van Aardt, 2010: 40), which has a significant impact on the environment (National Waste Information Baseline Report, 2012: 3). According to a recent study by the Council for Scientific and Industrial Research in South Africa in 2010, only 3.3% of the country's metropolitan population frequently recycled their household waste, and only 25% of the estimated 19 million metric tonnes of community waste were recyclable products (Council for Scientific and Industrial Research: 2012). Evidently more stringent effort is required to promote pro-environmental disposal methods, such as recycling.

In terms of clothing, most textile components are almost completely recyclable, but a major concern is that the process of recycling has not yet gained full momentum among the majority of consumers (Hawley, 2008: 208). Previous studies have shown that consumers usually consider other disposal methods rather than recycling (Joung & Park-Poaps, 2013: 110; Domina & Koch, 2002: 233). *Recycling* as a process can be explained as a practice through which formerly used materials are accumulated, processed, remanufactured and then re-used (Benefits-of-Recycling, 2013). Recycling, *per se*, is also used as a broader umbrella concept for the so-called 3 R's: reduce, re-use and recycle (Recycling Guide, 2003). These types of disposal methods are crucial to counter further environmental decline due to excessive waste and overflowing landfills that accompany much of the current economic advances in emerging economies (New Generation Textile Recycling – An Outlook 2010). Ultimately, waste management attempts are improved through recycling efforts, since fewer items are discarded, which makes recycling an indispensable solution for the current waste management problems (Leigh & Realff, 2003: 148). Such efforts may be of particular importance in the South African clothing and textiles industry.

In 2011, the total value of the South African clothing market was estimated at R29.57 billion, and this value is expected to expand by a further 14.7% for the 2012 to 2016 forecast period (PwC, 2012: 27). Growth in this sector substantiates the need for more pro-environmental consumption activities (Fransson & Gärling, 1999: 369), and an awareness of the environmental impact of consumer behaviour (Kollmuss & Agyeman, 2002: 253; Füle & Kenéz, 2005: 122). Consumers are the primary influence for creating sustainable standards in the marketplace, as well as society, as consumers' personal choice, utilisation and disposal of products are related to the environment, and may lead to the preservation or depletion of natural resources (PwC, 2012: 17; Kinnear, Taylor & Ahmed, 1974: 20). Individual behaviour, such as the disposal of clothing items, has a direct influence on the environment, and



although the impact of a single individual might be limited, the collective effect becomes substantial (Stern, 2000: 410).

In the clothing and textiles domain, empirical evidence seems to indicate that consumers do not wear clothing items for extended time-periods and tend to dispose of them fairly quickly (Morley, Slater, Russell, Tipper & Ward, 2006: 24; North, de Vos & Kotzé, 2003: 41). Furthermore, the clothing retail industry is characterised by ever-changing fashion trends, which has led to more frequent and increased clothing disposal behaviour (Bianchi & Birtwistle, 2012: 340). In this regard, it may be argued that consumers are not aware of the environmental problems caused by clothing disposal, since not much is published on the matter (Butler & Francis, 1997: 77). On the other hand, more research has been devoted to the topic in recent years and an increasing number of studies have shown that clothing disposal methods, such as recycling, re-using, donation, reselling and discarding have definite environmental implications (Koch & Domina, 1997; Shim 1995). In these studies, clothing disposal behaviour is also linked to certain motivations, concerns or reasons that inhibit or promote a more pro-environmental course of action (Koch & Domina, 1997: 7; Shim 1995: 42). Although these findings might be relevant in the South African emerging market context, it is important to recognise that the country is characterised by heterogeneous consumer populations (Steenkamp & Burgess, 2002: 132). For these reasons further empirical investigation is needed in the local context to explore the relevance of existing theories, concepts and scales that are associated with pro-environmental behaviour, and more specifically those that relate to environmentally responsible clothing disposal behaviour.

## **1.2 THEORETICAL BACKGROUND**

Both the impact of human beings on the environment and the concept of environmentalism are intricate with numerous studies published over the last few decades focused on explaining the relational perplexities of humankind and nature (Maloney & Ward, 1973: 585). In a study done among American consumers, it was found that people tend to think of themselves as superior to nature (Catton & Dunlap, 1980: 16). This belief may be based on the naïve trust that resources are abundant, and that when a problem occurs, science and technological solutions will come to the rescue. This mind-set of the human race leads to an increase in capitalism and technological abilities, which in turn reciprocate the belief that man is superior to earth (Catton, 1982: 21). Of course, much scientific evidence has been generated over the past few years to prove the contrary. Subsequently, consumer populations are starting to acknowledge that certain human actions, such as the depletion of

natural resources through constant and accelerating overuse, or the contribution of waste disposal, have a direct impact on the environment (Stern, 2000: 408). Simultaneously, consumers are not as committed to actually behaving in a pro-environmental manner, as they verbally profess (Peattie & Peattie, 2009: 262; Nordlund & Garvill, 2002: 741; Maloney & Ward, 1973: 585).

The afore-mentioned controversies have led to the development of several theoretical approaches to interpret and predict factors that contribute to pro-environmental action. In his review of relevant theoretical models, Jackson (2005) highlights several theories that substantiate the underlying motivational factors that contribute to pro-environmental behaviour such as recycling. Among these approaches, the Value-Belief-Norm (VBN) Theory (Stern, 2000; Stern, Dietz, Abel, Guagnano & Kalof, 1999; Stern & Dietz, 1994) seemed a particularly appropriate theoretical foundation to explore consumers' clothing disposal behaviour in the South African context. South Africans are known to be culturally diverse, which may impact on the values, beliefs and norms that guide their behaviour. The VBN theory was specifically developed to explore the influence of values, beliefs and norms on pro-environmental behaviour (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994), and has over the years been extensively applied in environmental research (Honig, 2013; López & Cuervo-Arango, 2008). The VBN Theory's assumptions originated in various other theories and concepts that have over the years contributed to research regarding normative influences on environmental behaviour, of which the most important and influential is Schwartz's value theories (2006, 1977, 1973). Schwartz's (2006, 1977, 1973) work on values has been extensively recognised as conclusive evidence that pro-environmental behaviour is influenced by values (Schwartz, 1973: 354). Other relevant theories related to the VBN Theory include the Focus Theory of Normative Conduct (Kallgren, Reno & Cialdini, 2000; Cialdini, Kallgren & Reno, 1991; Cialdini, Reno & Kallgren, 1990), and the Norm-Activation Theory (Schwartz, 1977). Both these theories support the notion that human behaviour is influenced by an individual's norms. Another important theoretical contribution that is recognised in the VBN Theory is the New Ecological Paradigm (NEP) Scale (Dunlap, Van Liere, Mertig & Jones, 2000). The NEP Scale was developed in an attempt to understand the effect that humans have on the environment, and consequently provides an ecological worldview of beliefs about the relationship between humans and nature (Dunlap *et al.*, 2000; Dunlap & Van Liere, 1978).

In accordance with the VBN Theory, several studies have substantiated the influence of consumers' value orientations, belief structures and personal norms with regard to pro-environmental behaviour such as recycling and other environmentally responsible disposal practises (Sánchez & Lafuente, 2010: 736; López & Cuervo-Arango, 2008: 625, 628; De Groot & Steg, 2007: 319; Daneshvary, Daneshvary & Keithschwer, 1998: 148; Stern & Dietz, 1994: 78; Granzin & Olsen, 1991: 3). However, these studies have focused on consumer populations other than the South African populace. Apart from its cultural diversity, South Africa is known for high levels of income inequality and other demographic complexities (Statistics South Africa, 2012) that add to the intricacy of understanding pro-environmental behaviour in the local context. In terms of demographic variables, research findings in more developed countries remain largely inconclusive regarding the influence of factors such as age and income, although greater consensus has been reached regarding the fact that women are more environmentally concerned than men (Bianchi & Birtwistle, 2012: 337; Bianchi & Birtwistle, 2010: 355; Koch & Domina, 1997: 10; Shim, 1995: 45). To date, these aspects remain an understudied topic in the local context. In addition to the contextual gap regarding demographic variables, no evidence could be found of the application of the VBN Theory to the interpretation of clothing disposal methods such as reselling, re-using, donation, discarding and recycling in South Africa, which led to the formulation of the research problem for this study.

### **1.3 RESEARCH PROBLEM**

Globally, environmental degradation and the preservation of natural resources has become one of the most important topics that form the basis of research endeavours (Council for Textile Recycling, 2013; National Waste Information Baseline Report, 2012; Waste Online, 2004). This topic is also relevant in the clothing and textiles research domain, with several studies focusing on consumer's eco-friendly apparel behaviour (Bianchi & Birtwistle, 2010, Bianchi & Birtwistle, 2012; Koch & Domina, 1997; Shim, 1995). In particular, the trend of fast fashion retailing has led to an increase in clothing being discarded, as clothing is only worn a few times before disposal (Bianchi & Birtwistle, 2012: 340). It is generally acknowledged that citizens across the globe are gradually becoming part of a throw-away society and unfortunately, the environmental implications of waste disposal are often disregarded (Bianchi & Birtwistle, 2012: 340; Hanson, 1980: 49). Currently there is very limited information on how South African consumers dispose of their clothing. Moreover, clothing disposal is an aspect that is not directly associated with consumers' purchase decisions, and

as a result, the disposal stage of the decision-making process is often ignored in consumer behaviour research (Bianchi & Birtwistle, 2012: 340), especially in the South African context.

Abroad, several studies indicated that possible influencing factors for pro-environmental consumption behaviour, such as recycling and other environmentally responsible disposal practises, are consumers' value orientations, belief structures and personal norms (Sánchez & Lafuente, 2010: 736; López & Cuervo-Arango, 2008: 625, 628; De Groot & Steg, 2007: 319; Daneshvary *et al.*, 1998: 148; Stern & Dietz, 1994: 78; Granzin & Olsen, 1991: 3). These aspects form part of the VBN Theory developed by Stern and his colleagues (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994) and may be seen as a valuable theoretical basis for explaining pro-environmental clothing disposal behaviour (López & Cuervo-Arango, 2008: 628). To date the constructs included in this theory have not been extensively explored in the South African context and in particular, not with regard to female consumers' clothing disposal behaviour. Females constitute an important target segment in the future growth of the clothing and textiles retail sector as they have expanded their role in the labour market (Schiffman & Kanuk in Shim & Kotsiopulos, 1993), and have consequently gained more disposable income (North, de Vos & Kotzé, 2003: 41). They also tend to be more environmentally concerned than men (Bianchi & Birtwistle, 2012: 337; Bianchi & Birtwistle, 2010: 355; Koch & Domina, 1997: 10; Shim, 1995: 45). Although they constitute an important segment of the South African clothing and textiles industry, not much is known regarding the extent to which they are willing to participate in environmentally responsible clothing disposal practises, neither is there much known regarding the underlying values, beliefs and norms that guide their behaviour. To this end, the purpose of this study is to **explore and describe the role of female consumers' values orientations, ecological worldview of beliefs, and their norms in determining their clothing disposal behaviour.**

#### 1.4 JUSTIFICATION OF THE RESEARCH

Although a variety of websites and blogs concerning recycling and re-use of textile products exist, limited research has been done on the recycling of textile products and clothing disposal behaviour in the South African context. It is therefore not certain to what extent, South African female consumers engage in such behaviour and what their underlying beliefs are regarding different methods of clothing disposal. To date, much attention has been devoted to recycling of glass, paper, plastic and aluminium, but campaigns that highlight the benefits of recycling clothing and textiles remain few and far in between (Birtwistle & Moore, 2007: 210). It is apparent that more effort is required to educate and inform consumers

about environmentally responsible disposal of textile and clothing products. Such informative efforts might benefit from the findings of this study and thereby ultimately contribute to addressing some of the current waste management issues in the South African clothing and textiles industry.

The theoretical contribution of this study is based in its use of the VBN Theory (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994) and the NEP Scale (Dunlap *et al.*, 2000) as underlying approaches to understanding consumer clothing disposal behaviour in the local context. To date, empirical evidence could not be found of the application of these approaches in the investigation of personal values, beliefs and norms as influencing factors in South African consumers' pro-environmental behaviour and also more specifically, with regard to clothing disposal behaviour. This study therefore also addresses uncertainties in existing consumer behaviour literature about clothing disposal processes in an emerging market context and whether or not recycling, and other environmentally responsible approaches, can be linked to certain underlying pro-environmental principles. Such principles contribute to the quest for a sustainable future, in which the need of existing as well as future generations are met without destructing the environment in such a manner that it becomes irreparable and worthless (Jackson & Michaelis, 2003: 14).

## 1.5 RESEARCH OBJECTIVES

Although the objectives and sub-objectives of this study are presented in the chapter to follow in addition to the extended theoretical background and conceptual framework, the main objectives and sub-objectives are summarised as follows:

**Objective 1:** To explore and describe the value orientations of female consumers who engage in clothing disposal behaviour in the South African emerging market context.

**Sub-objective 1.1:** To explore the biospheric-, egoistic- and altruistic value orientations of female consumers who engage in clothing disposal behaviour.

**Sub-objective 1.2:** To describe the relationship between demographic variables (i.e. age, marital status, number of children, ethnic group, household income and level of education) and the value orientations of female consumers who engage in clothing disposal behaviour.

**Objective 2:** To describe the ecological worldview of female consumers who engage in clothing disposal behaviour in the South African emerging market context.

*Sub-objective 2.1:* To determine female consumers' level of agreement with aspects that relate to the relationship between human beings and their environment (i.e. NEP measurement).

*Sub-objective 2.2:* To describe the relationship between demographic variables (i.e. age, marital status, number of children, ethnic group, household income and level of education) and the ecological worldview of female consumers who engage in clothing disposal behaviour.

**Objective 3:** To explore and describe female consumers' beliefs regarding the consequences of clothing disposal behaviour and the personal norms that guide such behaviour.

*Sub-objective 3.1:* To explore female consumers' awareness of consequences (AC) related to the disposal of clothing, their ascription of responsibility (AR) for such consequences and the personal norms (PN) that guide their clothing disposal behaviour.

*Sub-objective 3.2:* To describe the relationship between demographic variables (i.e. age, marital status, number of children, ethnic group, household income and level of education) and AC, AR and PN that guides the clothing disposal behaviour of female consumers.

**Objective 4:** To explore and describe the specific methods female consumers use to dispose of their unwanted clothing items.

*Sub-objective 4.1:* To determine the specific methods (including reselling, recycling, donation, discarding and re-using) that are used by female consumers to dispose of their unwanted clothing items.

*Sub-objective 4.2:* To describe the relationship between demographic variables (i.e. age, marital status, number of children, ethnic group, household income and level of education) and the specific methods female consumers use to dispose of their unwanted clothing items.

**Objective 5:** To describe the relationship between specific types of clothing disposal methods (including reselling, recycling, donation, discarding and re-using) and:

- The value orientations of female consumers;
- The ecological worldview of female consumers; and
- Female consumers' beliefs about the consequences of clothing disposal behaviour, and the personal norms (PN) that guide such behaviour.

The first objective is based on value orientations as an influencing factor for clothing disposal behaviour. Empirical evidence suggests that an individual who has strong values and beliefs towards the environment is likely to participate in pro-environmental activities (López & Cuervo-Arango, 2008: 628; Stern 2000: 413), such as environmentally responsible clothing disposal behaviour. The second objective is based on an ecological worldview of beliefs. The NEP Scale focuses on the relationship between humans and nature (Dunlap *et al.*, 2000), which eventually culminates in pro-environmental behaviour (Bozionelos & Bennet, 1999: 518). Objectives three address consumers' awareness of the environmental consequences of their behaviour, and the personal norms that guides such behaviour. These constructs are specified in the VBN Theory as influential beliefs that contribute to pro-environmental behaviour (Schultz, Gouveia, Cameron, Tankha, Schmuck & Franěk, 2005; 458; Steg, Dreijerink & Abrahamse, 2005; 416; Stern 2000: 414). Objective four is based on the main purpose of this study, which includes exploring female consumers' different clothing disposal behaviours. Objective five encapsulates above-mentioned objectives and explores female consumers' clothing disposal behaviour in terms of their value orientations, ecological worldview of beliefs, and norms.

## 1.6 PRESENTATION AND OUTLINE OF THE DISSERTATION

This chapter introduced the context for the study by providing a comprehensive discussion about the nature and background of the research subject. Important components of the chapter included: the research problem and research statement, the justification for the research, main research objectives, and a summary of relevant terms and concepts used in this study. The succeeding chapters are outlined and summarised as follows:

### **Chapter 2: A Review of Literature**

Chapter 2 provides an overview of relevant literature directed towards the research problem of this study. It further introduces the relevant theories that are incorporated into the conceptual framework to address the study's research objectives.

### Chapter 3: Research Design and Methodology

Chapter 3 covers the research design, sample and sampling techniques, development of the questionnaire, data collection and data analysis. Measures that were taken to enhance the quality of the data and ethical considerations for this study are also discussed in this chapter.

### Chapter 4: Results and Interpretations

Chapter 4 presents results and interpretations of this study. The results are listed in sections according to the objectives of the study, which also follow the outline of the questionnaire and conceptual framework.

### Chapter 5: Conclusions

Chapter 5 offers conclusions that assist in clarifying the contribution of this study. Research limitations are indicated and suggestions for future research are made.

## 1.7 DEFINITIONS OF TERMS AND CONCEPTS

TABLE 1.1: TERMS, CONCEPTS AND ACRONYMS

TERMS AND CONCEPTS		
TERM OR CONCEPT	DEFINITION	REFERENCE
<i>Altruistic</i>	Showing selfless concern for the well-being of others	DE GROOT, J.I.M. & STEG, L. 2008. Value orientations to explain beliefs related to environmental significant behavior: how to measure egoistic, altruistic, and biospheric value orientations. <i>Environment and Behavior</i> , 40(3): 330-354.
<i>Biospheric</i>	Concern for all surrounding living entities	STERN, P. C., DIETZ, T. & KALOF, L. 1993. Value orientations, gender, and environmental concern. <i>Environment and Behavior</i> , 25: 322-348.
<i>Developed country</i>	Criteria: high per capita income or gross domestic product (GDP), high level of industrialisation, high general standard of living and satisfactory infrastructure	INVESTOPEDIA. 2013. Developed economy. Available from: <a href="http://www.investopedia.com/terms/d/developed-economy.asp">http://www.investopedia.com/terms/d/developed-economy.asp</a> [Accessed 9 October 2013]
<i>Discard</i>	To dispose of something because it is useless or unwanted	MERRIAM WEBSTER: AN ENCYCLOPEDIA BRITANNICA COMPANY. 2013a. Available from: <a href="http://www.merriam-webster.com/dictionary/discard">http://www.merriam-webster.com/dictionary/discard</a> [Accessed 11 October 2013]
<i>Disposal</i>	The action or process of getting rid of something	OXFORD DICTIONARIES. 2013. Definition of disposal in English. Available from: <a href="http://www.oxforddictionaries.com/definition/english/disposal">http://www.oxforddictionaries.com/definition/english/disposal</a> [Accessed 28 November 2013].



<b>Donation</b>	Something (such as money, food, clothes, etcetera.) that you give in order to help a person or organisation	MERRIAM WEBSTER: AN ENCYCLOPEDIA BRITANNICA COMPANY. 2013b. Available from: <a href="http://www.merriam-webster.com/dictionary/donation">http://www.merriam-webster.com/dictionary/donation</a> [Accessed 28 November 2013].
<b>Egoistic</b>	Self-interested concerns	STERN, P.C., DIETZ, T., ABEL, T., GUAGNANO, A.G. & KALOF, L. 1999. A Value-belief-norm theory of support for social movement: The case of environmentalism. <i>Human Ecology Review</i> , 6: 81-95.
<b>Emerging economy or emerging market</b>	Categorised according to income per capita, market capitalization and the volume of shares traded on the stock exchange	BURGESS, S.M. & STEENKAMP, J-M.E.M. 2006. Marketing Renaissance: how research in emerging markets advances marketing science and practice. <i>International Journal of Research in Marketing</i> , 23(4): 337-356.
<b>Environmental awareness</b>	An individual's understanding of the impact of his or her behaviour on the environment	KOLLMUSS, A. & AGYEMAN, J. 2002. Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior? <i>Environment Education Research</i> , 8(3): 239 – 260.
<b>Landfill</b>	Place where garbage is buried under the ground	YOUR DICTIONARY. 2013. Available from: <a href="http://www.yourdictionary.com/landfill">http://www.yourdictionary.com/landfill</a> [Accessed 9 October 2013]. MERRIAM WEBSTER: AN ENCYCLOPEDIA BRITANNICA COMPANY. 2013c. Available from: <a href="http://www.merriam-webster.com/dictionary/landfill">http://www.merriam-webster.com/dictionary/landfill</a> [Accessed 9 October 2013].
<b>Pro-environmentalism</b>	Continuous effort undertaken by an individual to minimise the harmful environmental impact of human activities , in order to preserve natural resources	KOLLMUSS, A. & AGYEMAN, J. 2002. Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior? <i>Environment Education Research</i> , 8(3): 239 – 260.
<b>Pro-environmental disposal methods</b>	Umbrella concept for donations, re-selling, re-using and the recycling process itself	RECYCLING GUIDE. 2003. Reduce, reuse, recycle. Available from: <a href="http://www.recycling-guide.org.uk/rrr.html">http://www.recycling-guide.org.uk/rrr.html</a> [Accessed 22 October 2013].
<b>Recycling</b>	The practice, by which formerly used materials are accumulated, processed, remanufactured and then re-used	BENEFITS-OF-RECYCLING, 2013. <i>What is Recycling?</i> Available from: <a href="http://www.benefits-of-recycling.com/whatisrecycling/">http://www.benefits-of-recycling.com/whatisrecycling/</a> [Accessed 15 October 2013].
<b>Resell</b>	The act of selling again, usually to a new party	MERRIAM WEBSTER: AN ENCYCLOPEDIA BRITANNICA COMPANY. 2013d. Available from: <a href="http://www.merriam-webster.com/dictionary/resale">http://www.merriam-webster.com/dictionary/resale</a> [Accessed 28 November 2013].
<b>Re-use</b>	To use again especially in a different way or after reclaiming or reprocessing	MERRIAM WEBSTER: AN ENCYCLOPEDIA BRITANNICA COMPANY. 2013e. Available from: <a href="http://www.merriam-webster.com/dictionary/reuse">http://www.merriam-webster.com/dictionary/reuse</a> [Accessed 28 November 2013].
<b>Sustainable consumption</b>	The utilisation of goods and services related to basic needs to bring about an improved quality of life, while minimalising the use of natural resources, toxic materials, emissions of waste and the contamination of ecosystems so that the needs of future generations can be met.	INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT. 1994. Symposium: Sustainable Consumption, 19-20 January Oslo, Norway. Available from: <a href="http://www.iisd.org/susprod/principles.htm">http://www.iisd.org/susprod/principles.htm</a> [Accessed 10 October 2013].
<b>Throw away</b>	To get rid of as useless	THE FREE DICTIONARY. 2013. Throw away. Available from: <a href="http://www.thefreedictionary.com/threw+away">http://www.thefreedictionary.com/threw+away</a> [Accessed 28 November 2013].

<b>Waste</b>	Any substance (whether or not that substance can be reduced, re-used, recycled and recovered) that is extra, unwanted, rejected, discarded, or disposed of	SOUTH AFRICA. Department Environmental Affairs. 2012. National Waste Information Baseline Report. Available from: <a href="http://sawic.environment.gov.za/?menu=302">http://sawic.environment.gov.za/?menu=302</a> [Accessed 1 July 2013].
<b>ACRONYMS AND ABBREVIATIONS</b>		
<b>AB</b>	Awareness associated with the beliefs about waste reduction	Defined accordingly for this study
<b>AC</b>	Awareness of consequences	STEG, L., DREIJERINK, L. & ABRAHAMSE, W. 2005. Factors influencing the acceptability of energy policies: a test of VBN Theory. <i>Journal of environmental Psychology</i> , 25: 415-425.
<b>AR</b>	Ascription of responsibility	STEG, L., DREIJERINK, L. & ABRAHAMSE, W. 2005. Factors influencing the acceptability of energy policies: a test of VBN Theory. <i>Journal of environmental Psychology</i> , 25: 415-425.
<b>GB</b>	General beliefs	Defined accordingly for this study
<b>NEP Scale</b>	New Ecological Paradigm Scale	DUNLAP, R.E., VAN LIERE, K.D., MERTIG, A.G. & JONES, R.E. 2000. Measuring endorsement of the New Ecological Paradigm: a revised NEP Scale. <i>Journal of Social Issues</i> , 56(3): 425-442.
<b>PN</b>	Personal norms	STEG, L., DREIJERINK, L. & ABRAHAMSE, W. 2005. Factors influencing the acceptability of energy policies: a test of VBN Theory. <i>Journal of environmental Psychology</i> , 25: 415-425. <i>Issues</i> , 56: 407-424.
<b>VBN Theory</b>	Value-Belief-Norm Theory	STERN, P.C., DIETZ, T., ABEL, T., GUAGNANO, A.G. & KALOF, L. 1999. A Value-belief-norm theory of support for social movement: The case of environmentalism. <i>Human Ecology Review</i> , 6: 81-95.

## 1.8 CONCLUSION

This chapter served as a general introduction to the research topic. Background information concerning the research problem was provided, and the necessary justifications regarding the research subject were offered. Relevant concepts and theories related to the research objectives were introduced and will be further clarified in the chapter to follow.

## Chapter 2

---

# A Review of Literature

---

*This chapter provides an overview of related literature and introduces relevant theories that are appropriate in addressing the research objectives. It also presents and explains the conceptual framework and research objectives.*

### **2.1 INTRODUCTION**

In an ideal world, consumers would consume in such a manner that current and future generations would benefit from their behaviour. For this to happen, consumption behaviour needs to consider concurrently the cost of social, environmental and economic factors (Phipps, Ozanne, Luchs, Subrahmanyam, Kapitan, Catlin, Gau, Walker Naylor, Rose, Simpson & Weaver, 2013: 1227). Continued economic growth, which are accompanied by increased levels of consumption in the South African emerging market context, demands the development of acceptable waste management systems (Karani & Jewasikiewitz, 2007: 168), such as waste storage, gathering, shipping, and pro-environmental disposal (Muzenda, Ntuli & Pilusa, 2012: 149). Considering these aspects and the research problem addressed in this study, the following sections in this chapter explore South African clothing and textile waste, and consumer clothing disposal behaviour in particular. This chapter emphasises that South Africa is a country with diverse cultures; therefore, relevant theories and scales are presented that include values, beliefs and norms, as influencing factors for pro-environmental behaviour. The relationship between pro-environmental behaviour and disposal behaviour is presented and explained, with reference to the relevant theories. Finally, a conceptual framework and objectives are presented to address the research problem of this study.

### **2.2 CLOTHING AND TEXTILE WASTE**

The textile industry greatly contributes to pollution and consequently threatens the wellness of humans, animals and the entire ecosystem, as an escalating amount of textile waste is

created through production and use every year (Bianchi & Birtwistle, 2012: 336). According to an online article on Organic Fabrics South Africa (2013), the United Kingdom disposes of approximately two million (UK) tons of clothing and textile waste every year. Although this is an indication of waste disposal abroad, statistics for waste disposal in South Africa are not indicated. In general, information concerning South African textile waste is limited.

Waste disposal is seen as one of the major harmful behaviours toward the environment since this process increases the utilisation of resources (Ganiaris & Okun, 2001: 12). Furthermore, the decomposing process of textiles on landfill sites contaminates water sources owing to the development of a toxic fluid called leachate. These decomposing textiles contribute to global warming in a significant manner by generating methane gas. (Waste Online, 2004). Furthermore, disposal of waste produces pollution in the air, water and on land, and this also has a harmful impact on humans (Muzenda *et al.*, 2012: 149). Therefore, waste disposal behaviour necessitates transformation into pro-environmental behaviour (Nordlund & Garvill, 2002: 741).

During recent years, waste has become a serious and pertinent research subject as growing accumulation of waste is reported every year. *Waste* may be defined as “any substance (whether or not that substance can be reduced, re-used, recycled or recovered) that is excess, unwanted, rejected, discarded, abandoned or disposed of” (National Waste Information Baseline Report, 2012: 3). Waste may also be divided into two main categories, namely, general waste and hazardous waste (National Waste Information Baseline Report, 2012: 7). Hazardous waste poses immediate, high priority threats to the environment. Textile waste (e.g. discarded clothing) forms part of domestic waste, and is therefore categorised under general waste, which is not classified as an immediate environmental threat, but nevertheless involves long-term environmental consequences and health risks. Moreover, it has been found that the most common method of discarding clothing is by throwing the items away; ultimately these items end up on landfills (Chen & Burns, 2006: 258).

South Africa is currently focused on economic growth and development that affect the environment and resources through on-going waste creation (Larney & Van Aardt, 2010: 36; Carlson, 2004: 6). This situation also increases the problem with overflowing landfills and costs involved. Waste creation can also not be blamed exclusively on consumer behaviour. In a study on the recycling efforts of South African manufacturers, the authors found that most of the companies’ waste ended up on landfills (62.1 %), while 42.4 % of the companies

interviewed used some manner of recycling, and the remaining percentage (7.6 %) sold their waste (Larney & Van Aardt, 2010: 39-40). These researchers concluded that textile companies in South Africa did not give the necessary thought to disposal behaviour, and were therefore not capable of handling their waste sustainably (Larney & Van Aardt, 2010: 40). This is problematic as manufacturers and businesses should utilise and promote pro-environmental behaviour (Dickson & Eckman, 2006: 185), yet these organisations seem to be uneducated or disinterested in waste problems. Moreover, statistics have shown that, in 2011, South African's general waste was reported to be 59 353 901 (metric) tonnes, of which only 5 852 484 metric tonnes were recycled (National Waste Information Baseline Report, 2012: 15). South Africa is therefore still greatly dependent on land filling as waste management option, seeing that it was reported for 2011 that 90.1% of all generated waste ended up on landfills (National Waste Information Baseline Report, 2012: 19).

The fore mentioned statistics are disappointing, since South Africa essentially supports a waste management hierarchy model to encourage pro-environmental behaviour (Muzenda *et al.*, 2012: 150). This hierarchy first and foremost encourages waste prevention and reduction, then recovery, recycling and re-use, then efficient methods of storage, gathering and shipping, and lastly the treatment of waste on landfills (Muzenda *et al.*, 2012: 150). South Africa also adheres to certain Environmental Management Policies, such as avoiding or reducing pollution, waste minimisation goals, regulating waste production and confirming practical management of health problems (Karani & Jewasikiewitz, 2007: 169). Although the above-mentioned figures are an indication of the crises around general waste in South Africa and the support needed to reduce waste, the information on textile waste, and recycling in particular, is limited (Larney & Van Aardt, 2004: 60).

### **2.3 TEXTILE RECYCLING**

Recycling, per se, is still a fairly new concept in South Africa and the type of recycling facilities that exist in more developed countries do not necessarily feature in the local context. As technology and science improve, textiles become more multifaceted and difficult to recycle. Therefore, South Africa may still be behind with innovative disposal methods. This may be a result of lack of knowledge related to recycling aspects. Many studies have been done on recycling abroad (Bartl & Marini, 2008; Chen & Burns, 2006; Leigh & Realff, 2003; Derksen & Gartrell, 1993). These studies cover a broad assortment of recycling-related topics, and have consequently introduced industries and consumers abroad to the idea of

recycling. However, it is evident that South Africans need to be educated regarding the advantages of recycling and could benefit greatly from research applied to local conditions.

Countries abroad have also surpassed South Africa on recycling programmes available to consumers. Existing recycling programmes abroad include drop-off facilities, curbside programmes and co-collection (Howenstine, 1993: 87). *Drop-off recycling* requires consumers to approach the nearest facility to deposit their recyclables in provided bins. Commitment to this type of recycling is scarce since consumers consider it an effort to travel (Greulich & Akers, 2009: 5; Ruiz, 1993: 1.9). Nonetheless, efforts have been made in South Africa to develop this type of programme. However, more consumers would participate in recycling activities if *curbside methods* were more frequently used. This type of recycling program includes a pick-up truck collecting recyclable disposables from home. It is convenient for a consumer to dispose all recyclables at home, in one bin and without having to travel (Oskamp, Zelenzy, Schultz, Hurin & Burkhardt, 1996: 85). Curbside recycling has increased the convenience of recycling and therefore consumers may be more willing to participate (Vining & Ebreo, 1990: 72). *Co-collection* could also be a successful recycling method to consider, as ordinary garbage and recyclables are removed simultaneously (Howenstine, 1993: 88). These recycling programmes explain how various factors can contribute to consumers' willingness to engage in recycling behaviour. However, due to the complexities and cultural diversities of emerging economies, such evidence may not reflect the prevailing conditions that apply to countries such as South Africa.

An argument put forward is that recycling participation may increase in any country if the government provided clear recycling goals and authorisation, accessible recycling programmes and community-based education (Leeming, Dwyer, Porter & Cobern, 1993: 20). As an example, the Council for Textile Recycling, an American based organisation, was established to address waste problems (Chen & Burns, 2006: 256). This organisation emphasises the importance of recycling clothing and using recycled textile fibres (Council for Textile Recycling, 2013). However, South African recycling practices have not yet included textiles in their assortment of recyclables (Treevolution, 2013; WWF, 2013), even though most natural cellulosic fibres (cotton), natural protein fibres (wool), manufactured regenerated fibres (rayon), synthetic fibres (nylon and polyester), as well as leather, are recyclable (Chen & Burns, 2006: 253).

Textile recycling may be grouped into pre-consumer or post-consumer waste (Chen & Burns, 2006: 256). Fibres, yarns and fabric form part of the pre-consumer textiles, and can be

recycled into paper, home furnishings, and other industries. This study focuses purely on post-consumer waste, which may be explained as discarded textiles, and formerly used items that the owner no longer needs or desires (Hawley, 2008: 212). The problem is that post-consumer waste will ultimately end up on landfills if recycling facilities are not commonly available and easily accessible (Domina & Koch, 2002: 225, 234; Nordlund & Garvill, 2002: 741). Therefore, waste control is improved by recycling actions, since a reduction in the amount being disposed lowers the utilisation of textile resources such as water, fibres and chemical dyes (Ganiaris & Okun, 2001: 6). Recycling also reduces land filling, which results in decreasing levels of toxic waste and Global Greenhouse Gas emissions (Birtwistle & Moore, 2007: 212; Bogner, Ahmed, Diaz, Faaij, Gao, Hashimoto, Mareckova, Pipatti & Zhang, 2007: 602; Leigh & Realff, 2003: 148). Far less energy and resources are used in recycling processes; therefore recycling has a positive effect on climate change (Friends of the Earth, 2008: 3; Leigh & Realff, 2003: 149). Consequently, it is clear that recycling can partially help to resolve landfill problems (Friends of the Earth, 2008: 2), and may ultimately benefit society and the environment in the long term (Nordlund & Garvill, 2002: 741; Shim, 1995: 38).

## **2.4 WASTE MANAGEMENT IN THE SOUTH AFRICAN EMERGING MARKET CONTEXT**

A developing country differs from a developed country regarding culture, socio-economic status and demographics (Burgess & Steenkamp, 2006: 338, 341). As every developing country has its privileged population segment, the values and norms of the population are often diverse, considering that privileged consumers adopt the lifestyle of developed countries (Alden, Steenkamp & Batra, 2006: 235). This behaviour may lead to excessive consumption, which may ultimately produce more waste. The problem with waste management in many developing countries is that these countries are often incapable of implementing environmental regulations (Muniafu & Otiato, 2010: 343). As the population growth of South Africa is mainly focused in urban areas, it is important to develop sound waste management systems in these areas. If these systems are not well managed, the country will experience severe waste problems that will ultimately influence the quality of life in the country (Muzenda *et al.*, 2012: 149). Waste management is directly related to population growth (Muniafu & Otiato, 2010: 342) and environmental infrastructure (Karani & Jewasikiewitz, 2007: 164), which makes sustainable waste management a much-needed practice in this country.

South Africa recently joined the BRICS group of countries (Brazil, Russia, India, China and South Africa), which emphasises the fact that the country is an emerging economy with an advanced financial market and growing infrastructure (BRICS, 2013). It has also been recognised that this country has outstanding technology and science expertise. Unfortunately, compared to developed markets, limited empirical evidence exists about emerging consumer markets, despite the fact that more than 80% of consumers worldwide live in consumer markets, such as South Africa, that are still developing (Steenkamp & Burgess, 2002: 131). In recent years, some research has been done on sustainable behaviour in South Africa: Malepa and Mastamet-Mason (2013) focused on determining consumer knowledge of and concern for the environment when purchasing clothing, and further explored consumption and disposal practices with clothing recycling in particular. Larney and Van Aardt (2010, 2004) focused mostly on the waste management of clothing industries; Muzenda *et al.* (2012) did a study on waste management strategies in South Africa, and Karani and Jewasikewitz (2007) investigated waste management and sustainable development in South Africa. These studies are valued and necessary, however, much more is needed, as pro-environmental disposal methods seems to be the indispensable solution for various environmental problems (Birtwistle & Moore, 2007: 212; Leigh & Realff, 2003: 149; Nordlund & Garvill, 2002: 741). This study acknowledges that South Africa is a developing country with diverse cultures, as this country is home to four large cultural groups (Black, White, Asian/Indian and Coloured people), and numerous subgroups (Statistics South Africa, 2011). Furthermore, this study contributes to research on consumers' clothing disposal behaviour in a South African context.

## **2.5 CLOTHING DISPOSAL BEHAVIOUR**

Modern consumers consider the clothing lifecycle to be short-lived (Morley *et al.*, 2006: 24). A study conducted among young fashion-conscious consumers revealed that these consumers disposed of their cheaper clothing for various reasons: it was only bought for a specific occasion, new trends were available, or due to poor quality (Birtwistle & Moore, 2007: 213). A particular disposal method may be the result of certain intrinsic or extrinsic product features, such as boredom with a product, poor fit, the fact that it went out of style, or that it was damaged (Koch & Domina, 1997: 11). Furthermore, Birtwistle and Moore (2007) found that consumers felt some level of guilt when disposing of higher quality and more expensive clothing items. They concluded that, if the clothing was still wearable, consumers did not consider the item as waste, and therefore, they were more willing to pass



the item on to family and friends, or donate the item to charity (Birtwistle & Moore, 2007: 213).

Disposal of clothing often takes place at home, and requires a decision-making process (Shim, 1995: 46). Winakor (1969: 630) developed a model of the process of clothing consumption and, although timeworn, this model has been used in various studies since its development (Cluver, 2008; Shim, 1995; Mokhtari, 1992). The model explains how consumers may experience a situation where they do not wear certain clothing items; this stage is called the intermittent stage, or the inactive stage. During this stage, consumers undertake a decision-making process whereby they decide whether or not to dispose of their unwanted clothing, and how they will dispose of the clothing. Hanson (1980) presented a model that introduces three broad disposal options. This model has also been used and referred to by various researchers (Hibbert, Horne & Tagg, 2005; Harrell & McConocha, 1992). These disposal options are summarised in Figure 2.1 below:

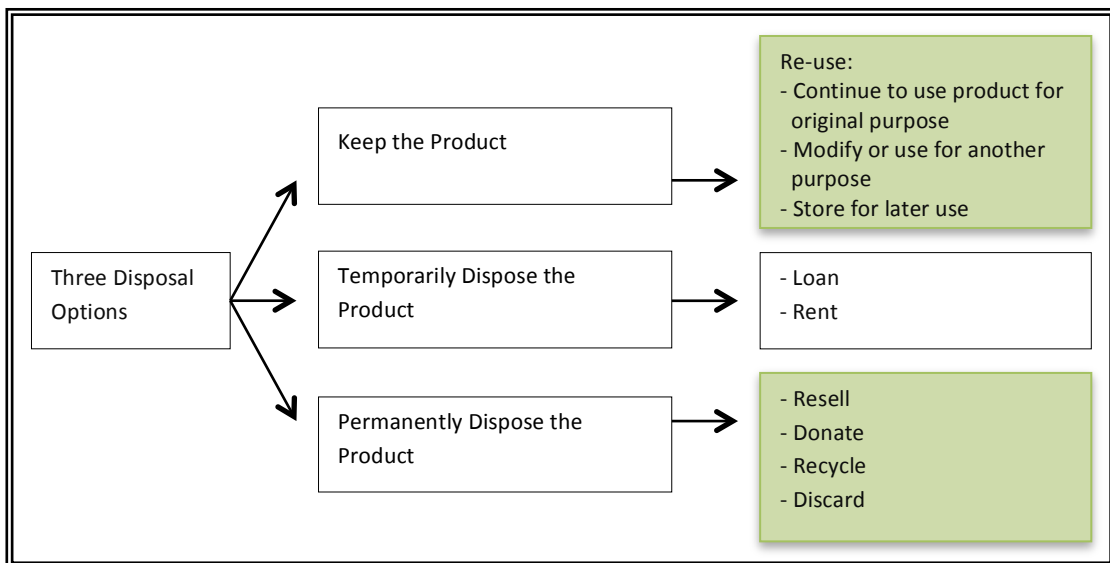


FIGURE 2.1: ADAPTATION OF THREE BROAD DISPOSAL OPTIONS (Hanson, 1980)

Shim (1995) and Koch and Domina (1997) expanded on these three disposal options and identified five prominent clothing disposal methods. Although the methods identified by Shim (1995) were more complex and included both economic and environmental motivations, the most prominent methods were identified as discarding, reselling, re-using, donating and recycling.

### **2.5.1 Discarding**

Discarding seems to be a preferred disposal method since it involves less effort, as opposed to considering other pro-environmental methods (Joung & Park-Poaps, 2013: 109). A consumer might be more concerned about the convenience of disposal than the welfare of the environment and others. Nevertheless, throwing away unwanted clothing leads to waste problems that threaten the welfare of the environment and human health, as waste leads to the pollution of air, water and land (Muniafu & Otiato, 2010: 346; Waste Online: 2004).

### **2.5.2 Reselling**

Economic aspects firmly influence individuals' choices, actions and ultimately their pro-environmentalism (Kollmuss & Agyeman, 2002: 249). It was found that consumers are optimistic towards the environment and care for it, but with disposal of clothing, their priority may be the monetary benefit they will receive from disposing (Hawley, 2006: 9). It may be argued that due to the struggle caused by high levels of unemployment in South Africa (PWC, 2012: vii), many consumers are left with a small amount of disposable income. Subsequently, the trend of second-hand clothing has over the last few years developed into a movement across South Africa, as multiple shops carrying vintage, affordable, second-hand clothing, which is available to consumers. These stores buy unwanted clothing from consumers and then resell them to consumers who may have limited income (Live Eco, 2013). This process does not only benefit the less privileged, but also those consumers who sell their clothing. Consumers are starting to realise the potential economic benefits of not throwing clothing away (Leigh & Realff, 2003: 148), and, as a result, consumers might rather resell their unwanted clothing than considering other disposal options (Hawley, 2009: 194).

### **2.5.3 Re-using**

Consumers who re-use are seen as eco-active, as they desire to get the most out of a clothing item to purposefully benefit the environment (Koch & Domina, 1997: 7-8). According to Koch and Domina (1997: 7), clothing items may be re-used in arts and crafts. It should be mentioned that when clothing is made into new products, it not only generates money when the products are sold, but also creates work opportunities (Friends of the Earth, 2008: 3). Consumers should consider employing a local seamstress to modify or adjust their clothing, as this is an opportunity for work creation and will benefit the unemployed (Live Eco, 2013). Another initiative growing in popularity among South African consumers is

the concept of swapping unwanted clothing. This is a pro-environmental activity that does not require the transfer of money (DestinyConnect, 2012).

#### **2.5.4 Donating**

Consumers who donate are likely to be concerned with disadvantaged people and show altruistic characteristics (De Groot & Steg, 2008: 333; Schultz *et al.*, 2005: 459, 460; Stern *et al.*, 1999: 83). At the same time, these consumers might also be concerned with the environment since they participate in donation to contribute to lessening environmental problems (Koch & Domina, 1997: 7). Therefore, donation not only contributes to reducing the amount of waste that ends up on landfills, but also prolongs the lifespan of clothing, while contributing to solving problems related to poverty (CapeTownMagazine, 2013). South Africa has a selection of charities, which includes hospices, the Salvation Army, and Humana Second Hand that provides for the homeless, abused and ill (CapeTownMagazine, 2013; Humana People to People in South Africa: 2013).

#### **2.5.5 Recycling**

The fifth and final disposal method addressed in this study is recycling behaviour. Recycling as a process is explained as a procedure through which redundant materials are transformed in such a manner that it becomes re-usable (Benefits-of-Recycling, 2013). As a result, recycling as a disposal method contributes to waste management (Leigh & Realff, 2003: 148). For the average consumer to even consider recycling instead of discarding, the accessibility of recycling facilities should be trouble-free, as the level of convenience influences participation in recycling activities (Domina & Koch, 2002: 220; Bratt, 1999: 30; Daneshvary *et al.*, 1998: 144; Derksen & Gartrell, 1993: 439). When recycling activities necessitate a small amount of effort, consumers do not need pro-environmental motivation for them to participate in recycling activities (Schultz & Oskamp, 1996: 381). Some South African establishments have introduced guidelines for recycling in South Africa (Treevolution, 2013; WWF, 2013); however, these initiatives do not include recycling of textiles.

From the preceding paragraphs it is apparent that pro-environmental disposal methods, such as reselling, re-using, donation and recycling, may be seen as significant attributes for this study, since these disposal methods contribute to the solution of environmental problems. Since clothing disposal behaviour is influenced by numerous factors (Birtwistle & Moore, 2007; Domina & Koch, 2002), it is likely that the above-mentioned disposal methods

are influenced as well. As this study focuses on the effect that values, beliefs and norms have on clothing disposal behaviour, it is pertinent to explore the theories in which these concepts originated.

## 2.6 SUPPORTING THEORIES

It is important to keep in mind that pro-environmental behaviour is a concept closely associated with environmentally responsible disposal and recycling behaviour (Friends of the Earth, 2008: 2-3; Leigh & Realff, 2003: 149; Nordlund & Garvill, 2002: 741; Shim, 1995: 38). The models that will be acknowledged in the following paragraphs may therefore be associated with disposal behaviour, although many have been used to interpret various types of pro-environmental actions. Furthermore, these models are relevant to consider when addressing the objectives and conceptual framework of this study.

Over recent decades, research interests in the field of environmentalism have been greater than ever before. Many studies have been conducted attempting to comprehend the normative force behind pro-environmental behaviour (Poortinga, Steg & Vlek, 2004; Harland, Staats & Wilke, 1999; Arbuthnot, 1974). As an example, Jackson (2005) conducted an extensive review about models that suggest pro-environmental behaviour. One of the earliest, most prominent investigations that relates to this study is Schwartz's work on value orientation theories (Schwartz, 2006, 1977, 1973). Values are understood as persisting opinions and beliefs in an individual's mind. As a result, values have the ability to guide decision-making, ultimately influencing behaviour (López & Cuervo-Arango, 2008: 624; Füle & Kenéz, 2005: 124; Bardi & Schwartz, 2003: 1209; Schwartz, 1992: 21). Schwartz's value orientation research proposes that intentions to act pro-environmentally are first and foremost motivated by an individual's personal value orientation. His work also suggests that an individual's pro-environmental behaviour is more likely to be a result of values, which extend beyond self-interest (Schwartz, 1973: 354; Jackson, 2005: 52).

Schwartz's (1977, 1973) research showed that the difference in characteristics of some value orientations is sometimes vague, and therefore only distinguishes two main value orientations to explain pro-environmental behaviour, namely, self-enhancement and self-transcendence. Self-enhancement value orientations are related to egoistic behaviour where the individual only focuses on goals that are directly aimed at benefiting the self (De Groot & Steg, 2007: 319; Schultz *et al.*, 2005: 459; Nordlund & Garvill, 2002: 743; Stern & Dietz, 1994: 74). Alternatively, self-transcendent value orientations are associated with

both altruistic and biospheric value orientations, implying that the individual will seek to benefit the self and all surrounding environment equally (De Groot & Steg, 2007: 319; Schultz *et al.*, 2005: 459; Schwartz, 2006: 143; Nordlund & Garvill, 2002: 743; Stern & Dietz, 1994: 74, 78). Self-transcendent values may therefore have an influence on environmentally responsible disposal behaviour since these values show a relationship with the environment and concern for over-consumption (Jackson, 2005: 53).

The second influential theory is the Focus Theory of Normative Conduct (Kallgren *et al.*, 2000; Cialdini *et al.*, 1991; Cialdini *et al.*, 1990). This theory suggests that values are influenced by the social context of an individual. Even though it is the preference of the consumer to recycle, circumstances may prohibit the action. This theory emphasises that people are inclined to accept what is seen as the norm (Jackson, 2005: 58). For example, a consumer, who frequently or usually recycles, might not recycle during a holiday with friends or family, as these individuals might not share the same attitude towards recycling.

The third theory applicable to this study is the Norm-Activation Theory (Figure 2.2), also developed by Schwartz (1977). This theory explains that pro-environmental behaviour is most likely to be based on altruistic motives. The theory is based on the foundation that an individual will only show altruistic behaviour if his or her actions are supported by internalised personal norms. These personal norms are in turn motivated by an individual's awareness of the consequences of his or her actions, as well as the acceptance of responsibility (Steg *et al.*, 2005: 416).

Lastly, the VBN Theory, developed by Stern and his colleagues (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994), is strongly influenced by some of the fore mentioned theoretical models and provides evidence that pro-environmental behaviour is positively influenced by altruistic motives and moral norms. Furthermore, the VBN Theory is related to the acceptance of the NEP Scale (Dunlap *et al.*, 2000).

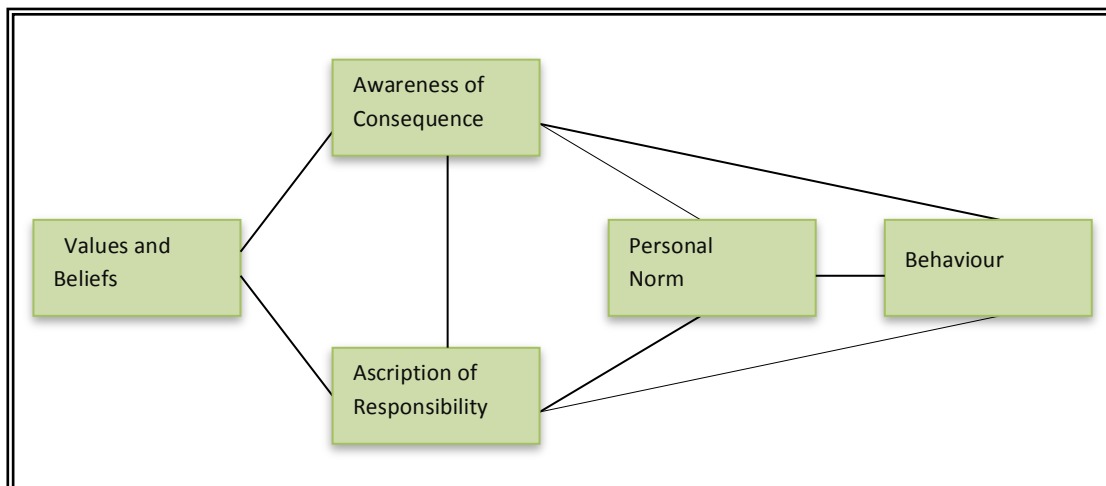


FIGURE 2.2: ADAPTATION OF THE NORM-ACTIVATION THEORY (Schwartz, 1977)

These theories support the notion that there is a connection between an individual's moral conduct and his or her pro-environmental behaviour. The VBN Theory is important to address because it incorporates values, beliefs and norms as influencers of pro-environmental behaviour (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994). Furthermore, the NEP Scale will be included, since this scale measures the relationship between humans and the environment (Dunlap *et al.*, 2000). The VBN Theory and the NEP Scale have not yet been used in research in the field of clothing disposal behaviour in South Africa, and may be seen as an important contribution of this study.

### 2.6.1 The Value-Belief-Norm (VBN) Theory

Environmental problems, such as irresponsible disposal of waste, are a result of people's behaviour (Nordlund & Garvill, 2002: 740). Moreover, consumers' behaviour toward the environment is influenced by their personal values, beliefs and norms, bearing in mind that these are considered guiding principles for behaviour (Sánchez & Lafuente, 2010: 736; López & Cuervo-Arango, 2008: 625, 628; De Groot & Steg, 2007: 319; Daneshvary *et al.*, 1998: 148; Stern & Dietz, 1994: 78; Granzin & Olsen, 1991: 3).

Stern and his colleagues (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994) developed the VBN Theory suggesting that humans have a personal value, belief and norm structure that influences their pro-environmental behaviour. To date, the VBN Theory has proved to be one of the best indicators of non-activist, pro-environmental behaviour (Stern, 2000: 412). As a result, the theory has been used in various studies to indicate that values, beliefs and

norms influence behaviour (Honig, 2013; Sahin 2013; Chen 2012; López & Cuervo-Arango, 2008; Slimak & Dietz, 2006; Steg *et al.*, 2005). These studies were all conducted in different settings and locations, yet the VBN Theory proved to confirm personal values, beliefs and norms as antecedents of environmental behaviour in each of the studies. It is apparent that the VBN Theory could serve as an important theoretical basis to explore consumers' clothing disposal behaviour, while considering factors such as personal values.

#### **2.6.1.1 Values related to pro-environmental behaviour**

Values are enduring perceptions and ideas that influence an individual's preferences and guide decision-making processes, ultimately influencing behaviour (López & Cuervo-Arango, 2008: 624; Füle & Kenéz, 2005: 124; Bardi & Schwartz, 2003: 1209; Schwartz, 1992: 21). It is generally assumed that actions will become more imperative if grounded in certain values (Schwartz, 2009: 1). Values are shaped during socialisation and are therefore reasonably established in adults (Stern & Dietz, 1994: 67). As a result it is understood that values communicate what every individual considers to be important, but may differ from person to person (Bardi & Schwartz, 2003: 1208). Values are accordingly considered a filtering instrument, sorting through information about the consequences of certain behaviour (López & Cuervo-Arango, 2008: 624).

Values consist of certain features and characteristics. The first feature embraces the idea that values are based on beliefs and that humans act according to these beliefs (De Groot & Steg, 2008: 331; Allport, 1961: 454). Secondly, values are non-figurative; therefore, values might not have a direct impact on behaviour (Schwartz, 1992: 47). Thirdly, values operate as guiding principles when evaluating situations, individuals and behaviour. Values not only influence individual's goals and aspirations, but also add to the approach taken to achieve these goals (De Groot & Steg, 2008: 331; Vinson, Scott & Lamont, 1977: 45). Therefore, values may be an encouragement to take certain actions, even if an individual does not intentionally think about the specific values involved (Bardi & Schwartz, 2003: 1208; Kollmuss & Agyeman, 2002: 251). The fourth feature describes values as being order specific, meaning that a certain value may be considered a higher priority than another (Bardi & Schwartz, 2003: 1208). Values are therefore considered an efficient explanatory instrument since people only regard a small number of values (De Groot & Steg, 2008: 331; Rokeach, 1970: 157). Consequently, values may be used to explain beliefs, attitudes and behaviour (Stern, 2000: 413; Stern & Dietz, 1994: 67). These characteristics of values explain why it is imperative to study values among consumers of diverse cultures.

As previously stated, values may channel actions (Bardi & Schwartz, 2003: 1208; Kollmuss & Agyeman, 2002: 251; Rokeach, 1970: 157), and for that reason values may possibly be seen as the foundation for pro-environmental behaviour (Jackson, 2005: 52; Stern, 2000: 411). Values may be driven by either conscious choice or by habit (Bardi & Schwartz, 2003: 1209); therefore, although values do not promise pro-environmental behaviour, an individual with strong values and beliefs towards the environment are likely to be actively involved in environmental activities (Pickett-Baker & Ozaki, 2008: 282; Nordlund & Garvill, 2002: 744; Daneshvary *et al.*, 1998: 148). However, values are nonfigurative and general; therefore, the influence of values on pro-environmental behaviour may be indirect (Nordlund & Garvill, 2002: 744; Schwartz, 1992: 47). Since recycling behaviour is associated with pro-environmental behaviour, it is necessary to determine whether values associated with environmental issues transform into concrete actions, such as pro-environmental disposal behaviour (Schultz *et al.*, 2005: 458-460).

According to the VBN Theory there are three main value orientations: egoistic, altruistic and biospheric, and each orientation, in its perfect structure, could generate pro-environmental behaviour (Stern, Dietz & Kalof, 1993: 326). Therefore, each one of these value orientations has the possibility to encourage pro-environmental clothing disposal behaviour. When a consumer protects the environment for the sake of his or her own wellbeing, he or she shows egoistic values (De Groot & Steg, 2008: 333). Altruistic values are social norms that develop into personal norms; therefore, the consumer becomes aware of the wellbeing of others and acts responsibly towards society (De Groot & Steg, 2008: 333). Biospheric values are comparable with social-altruistic values, as consumers believe that the wellness of the environment affects society (Stern, 2000: 414).

#### **a) Egoistic value orientation**

Egoistic values, also known as self-interest values, suggest that the individual's concern for the environment is in direct relationship with the benefits the individual receives for being environmentally orientated (De Groot & Steg, 2008: 333; Schultz *et al.*, 2005: 458-459; Harland *et al.*, 1999: 2505; Stern *et al.*, 1993: 326). In other words, the individual has self-interested concerns (Stern & Dietz, 1994: 70). Therefore, only when an individual's actions are in line with his or her individual priorities, the encouragement will be there to participate.



When considering egoistic values regarding clothing disposal behaviour, the economic benefit the individual receives when behaving in a pro-environmental manner (Stern *et al.*, 1993: 324), as well as the convenience aspect involved with disposal, may have an influence on the actual participation in pro-environmental disposal behaviour. Consumers may consider reselling their unwanted clothing, as their priority is the monetary benefit they will receive from this disposal method (Hawley, 2009: 194). Furthermore, disposal of clothing may necessitate sorting items into specific textile groups (Hawley, 2008: 210), which may be inconvenient and discourage consumers from pro-environmental methods of disposal, because throwing away involves less effort (Joung & Park-Poaps, 2013: 109). Therefore, the consumer may consider his or her own convenience over the welfare of the environment and others, when he or she has a strong egoistic value orientation.

#### **b) Altruistic value orientation**

Altruistic values are also known as humanistic values and occurs when an individual considers other humans as equals, is concerned about other humans in relation to the environment, and feels obligated to conduct him or herself in such a way that it benefits other humans (De Groot & Steg, 2008: 333; Schultz *et al.*, 2005: 459, 460). Consumers with altruistic values are concerned with society's wellbeing and they rather focus on doing something valuable and meaningful for their fellow humans, instead of focusing on their own gain (Stern *et al.*, 1993: 325; De Young, 1986: 446). Individuals with altruistic values would therefore seek to protect innocent people against possible harm (such as pollution) in the environment, in the end striving to behave in a pro-environmental manner to ultimately protect society (López & Cuervo-Arango, 2008: 628; Stern, 2000: 413; Stern *et al.*, 1993: 327). These consumers carry out actions of conservation, aiming to contribute to the wellbeing of their surrounding community (Ebreo, Hershey & Vining, 1999: 111); therefore, it may be assumed that these consumers are more willing to donate their unwanted clothing to organisations that care for the welfare of people (De Groot & Steg, 2007: 329; Shim 1995: 39).

#### **c) Biospheric value orientation**

An individual shows biospheric values when he or she shows concern for all surrounding and living things (Stern *et al.*, 1993: 327). Individuals with biospheric values believe that the world can be made a better place by doing something positive towards the environment (Webster, 1975: 189). Therefore, consumers who show greater compassion towards their

surrounding environment and society are likely to show greater biospheric value orientations, and be less egoistic (Swami, Chamorro-Premuzic, Snelgar & Furnham, 2010: 140). These consumers make more pro-environmental and less damaging decisions as their concerns are related to nature in its entirety (De Groot & Steg, 2008: 333; De Groot & Steg, 2007: 319; Schultz *et al.*, 2005: 459), which may ultimately encourage pro-environmental clothing disposal behaviour.

Although values do not guarantee pro-environmental behaviour, the choice of disposal methods may subconsciously be guided by values (Pickett-Baker & Ozaki, 2008: 282; Nordlund & Garvill, 2002: 744; Daneshvary *et al.*, 1998: 148). Additionally, beliefs and values are interrelated, as beliefs are always connected to values (Stern & Dietz, 1994: 76; Vinson *et al.*, 1977: 46). The following paragraphs emphasise the ecological worldview of beliefs, introduced in the New Ecological Paradigm Scale.

### **2.6.2 The New Ecological Paradigm (NEP)**

Regardless of the large number of measures and scales used to test environmental concern, one scale dominates over all others and is often used to support the VBN Theory. The NEP Scale (Dunlap *et al.*, 2000) is a popular model since it is not only a measuring instrument of an environmental paradigm, but is also used to measure attitudes (Sánchez & Lafuente, 2010: 734). Dunlap and his colleagues proposed a paradigm to understand the effect and consequences that humans have on the environment (Dunlap *et al.*, 2000; Dunlap & Van Liere, 1978). The NEP Scale has been carefully constructed to place attention on the worldview or the belief that the balance of nature may be disturbed by humans, that nature may be ruled by humans and that limits exist for the development of human societies (Dunlap *et al.*, 2000; Dunlap & Van Liere, 1978). An individual has predetermined beliefs, which lead the individual to form anticipated opinions about life (Bond, 2009: 322). These beliefs may be seen as primal beliefs that are developed in the heart of a person's beliefs structure (Rokeach, 1970: 6), and as a result, social psychologists explain that these beliefs influence an extensive collection of other beliefs, specifically focusing on environmental concerns (Stern, Dietz & Guagnano, 1995: 728).

Over the last three decades, the NEP Scale has endured extensive exploitation, as numerous researchers in the field of environmental interest adapted, copied or mentioned the scale in their studies. The scale has been tested on various samples and cultures, suggesting respectable validity (Best & Mayerl, 2013; Chen, 2012; De Groot & Steg, 2008; López &

Cuervo-Arango, 2008; Slimak & Dietz, 2006; Steg *et al.*, 2005). The NEP Scale's popularity may be a result of the scale's precise item direction. Consequently, the scale avoids instability between items, and also presents complete coverage of important aspects of an ecological worldview (Dunlap *et al.*, 2000: 438). Over the years the NEP Scale has become one of the most enduring and popular survey-based measuring instruments for determining pro-environmental behaviour (Sánchez & Lafuente, 2010: 733-734), and is therefore also seen as a forerunner in determining recycling behaviour (Best & Mayerl, 2013: 693). Consequently, it is necessary to include the NEP Scale for this study, to support the VBN Theory in determining consumers' pro-environmental behaviour, particularly regarding clothing disposal behaviour.

In relationship with the values of the VBN Theory, it is understood that, if consumers have strong altruistic and biospheric values, they are expected to score high on the NEP Scale. On the other hand, if a consumer shows stronger egoistic values, they are more likely to have a low score (Phipps *et al.*, 2013: 1228; Schultz *et al.*, 2005: 459). This integration of values and beliefs activate specific behaviour associated with consumer awareness of harmful consequences to the surrounding environment, and the responsibility a person ascribes to him- or herself to address the situation (Schultz *et al.*, 2005: 458; Stern 2000: 414). Therefore, an individual is more likely to score high on the NEP Scale when these actions are stimulated (Jackson, 2005: 56).

### **2.6.3 Awareness of consequence and ascription of responsibility**

Consumers, who believe that their environmentally responsible attempts may solve a problem, are generally consumers with higher levels of environmental concern (Ellen, Wiener & Cobb-Walgren, 1991: 103). However, the majority of consumers tend to be only verbally committed to environmentally conscious activities; few are actually committed or have a real understanding of environmental issues (Schuhwerk & Lefkoff-Hagius, 1995: 46, 53; Maloney & Ward, 1973: 585). There are differences between consumer's intentions, and their actual behaviour (Stern, 2000: 408). Only when someone is aware of the harmful consequences associated with certain behaviour, will a sense of responsibility towards nature and society emerge (Jackson, 2005: 55; Stern, Dietz & Black, 1986: 210). Consumers may then be categorised as being responsible consumers (Fransson & Gärling, 1999: 375; Stern *et al.*, 1993: 324), and they act in response to their personal norms, as they understand that it is their moral obligation to protect the environment (López & Cuervo-Arango, 2008: 628).

The VBN theory, together with the NEP Scale, explains that when the beliefs and values of an individual are taken into account, his or her personal norms can be determined (Phipps *et al.*, 2013: 1228-1229). Personal norms are stimulated when consumers are aware of the consequences of their behaviour on the environment (AC), as well as the responsibility they ascribe to themselves to protect the environment from harmful behaviour (AR) (Sánchez & Lafuente, 2010: 736; Jackson, 2005: 55; Schultz *et al.*, 2005: 460; Steg *et al.*, 2005: 416; Stern 2000: 413; Harland *et al.*, 1999: 2507; Stern *et al.*, 1999: 83; Stern *et al.*, 1993: 324).

#### 2.6.4 Personal norms

Norms are activated through values and beliefs (Stern & Dietz, 1994: 72; Stern 2000: 413), and are described as mutual beliefs about how people are supposed to act; therefore, norms are associated with the moral importance a person ascribes to him- or herself (Schwartz & Howard, 1984: 245). Norms are encouraged by an outcome, which may either be rewarding or not (Thøgersen, 2006: 248). Consequently, norms may either assist (Thøgersen, 2005: 148, 168-169) or obstruct (Press & Arnould, 2009: 106) pro-environmental behaviour. According to the Focus Theory of Normative Conduct (Kallgren *et al.*, 2000; Cialdini *et al.*, 1991; Cialdini *et al.*, 1990), norms are somewhat ambiguous in the sense that they have two meanings. The first connotation with the word *norm* simply signifies what is *normally* done, while the second connotation suggests what *ought to be* done (Kallgren *et al.*, 2000; Cialdini *et al.*, 1991; Cialdini *et al.*, 1990). These two types of norms are recognised as *descriptive* and *injunctive* norms. Descriptive norms are motivated by an individual's concern of the opinion of others, therefore it is the perception of what is seen as *normal* or *usually done* (Thøgersen, 2006: 249; Kallgren *et al.*, 2000: 1002, 1003; Reno, Cialdini & Kallgren, 1993: 104). For instance, if an individual makes a decision to recycle, based on the fact that his or her neighbour recycles, it is seen as adaptive behaviour, thus a descriptive norm (Jackson, 2005: 59). The American moral and social philosopher, Eric Hoffer stated: "When people are free to do as they please, they tend to imitate each other" (The Quotations Page, 2013). Additionally, injunctive norms are linked to the perception of what *should be done* (Kallgren *et al.*, 2000: 1002, 1003; Reno *et al.*, 1993: 104). For example, injunctive norms are likely to be activated when an individual recycles because he or she knows that recycling is an attempt to help decrease waste problems. When descriptive norms and injunctive norms work together, norms become prominent (Göckeritz, Schultz, Rendón, Cialdini, Goldstein & Griskevicius, 2010: 521). Therefore, an individual is likely to behave in a certain manner

because of what is believed to be commonly done, or what should be done, while being approved by others (Göckeritz *et al.*, 2010: 516). Thøgersen (2006) expanded the classification of injunctive norms into *subjective social norms* and *personal norms*. Subjective norms are motivated by the anticipated rewards or penalties an individual will experience through his or her actions (Thøgersen, 2006: 249), while personal norms are motivated through personal feelings such as guilt, shame, pleasure, and so forth.

In summary, norms function as a channelling instrument that guide human behaviour to such an extent that minimal cognitive assessment is needed (Jackson, 2005: 59). Norms are the guiding principles for most human behaviour that happens on a daily basis. Therefore, norms may be seen as significant attributors for pro-environmental behaviour (Jackson, 2005: 61). Although prior research has focused on the influence of both social- and personal norms, empirical evidence seem to suggests that an individual's environmentally responsible behaviour may be more directly related to the individual's personal norms (Nordlund & Garvill, 2002: 752, 753; Stern, 2000: 413; Stern *et al.*, 1999: 85, 91; Thøgersen, 1999: 439). In particular, the environmentally responsible behaviour of an individual may be a result of the strength of the individual's personal norms (Thøgersen, 2006: 248; Harland *et al.*, 1999: 2507). It was found that an individual might behave in a certain manner because of norms, even if the specific behaviour counters the individual's values (Bardi & Schwartz, 2003: 1217). Therefore, pro-environmental clothing disposal behaviour may also have the strongest relationship with personal norms.

## **2.7 PRO-ENVIRONMENTAL CLOTHING DISPOSAL BEHAVIOUR AS A RESULT OF VALUES, BELIEFS AND NORMS**

For this study, it is important to emphasise the precise concept and perception behind pro-environmental behaviour, as it is directly associated with consumers' clothing disposal behaviour (Nordlund & Garvill, 2002: 741). Pro-environmental behaviour can be defined as decisions made by consumers to protect themselves as well as their surroundings (Ottman, 1992: 3); in other words, to have the intention to behave in such a manner that the environment benefits from their personal actions (Stern, 2000: 408, 411). Pro-environmental behaviour, such as the conservation, re-establishment or development of nature, may be seen as a result of an individual's concern for the environment (Swami *et al.*, 2010: 139). People who are not interested in changing their behaviour may be seen as negligent and, consequently, they may be held responsible for environmental problems, due to their lack of concern for nature (Harland *et al.*, 1999: 2505). Environmental concern can motivate

consumers to change their everyday behaviour by reducing their consumption activities (Füle & Kenéz, 2005: 122), while knowingly attempting to reduce their own harmful impact on the environment (Kollmuss & Agyeman, 2002: 240).

Although clothing as a product is not frequently included in environmental research (Butler & Francis, 1997: 77), Shim's (1995) research has confirmed that consumers' pro-environmental concern and behaviour influences their clothing disposal methods. The review of literature has presented empirical evidence of theories, concepts and scales that are strongly associated with pro-environmental behaviour. Consequently, it is relevant and necessary to implement appropriate theories and scales in this study, to explore their influence on the selected sample of South African consumers in terms of their pro-environmental behaviour, which may ultimately influence their clothing disposal behaviour. For this study, the VBN Theory (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994) will be used as a theoretical basis to explore values, beliefs and norms, and how these are related to clothing disposal methods. As mentioned, this theory is an established framework for non-activist pro-environmental behaviour (Stern, 2000: 412). Secondly, the NEP Scale (Dunlap *et al.*, 2000) will be used, as it will provide an ecological worldview of beliefs, which is an important construct in the VBN Theory. The following paragraphs explain and justify the conceptual framework and research objectives for this study.

## 2.8 THE CONCEPTUAL FRAMEWORK

In addressing the objectives of this study, the five prominent clothing disposal methods used by Shim (1995) and Koch and Domina (1997) were integrated into a conceptual framework. The framework is based on the VBN Theory that was developed by Stern and his co-workers (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994). The content of the conceptual framework progresses from values to beliefs to norms within the VBN Theory. At the same time, the framework focuses on a more fixed belief configuration with the NEP Scale (Dunlap *et al.*, 2000). While moving through the framework, each independent factor directly influences the subsequent factor, yet at the same time may influence factors further along the sequence as well. Values are generally connected to beliefs and are therefore seen as the foundation for pro-environmental behaviour (Stern, 2000: 411). As a result, values have the possibility to influence clothing disposal behaviour. Remaining with the sequences of the framework, the consequences of consumers' actions, as well as the responsibility they ascribe to themselves for their actions, form part of the beliefs configuration (Steg *et al.*, 2005: 416; Stern, 2000: 413). Consequently, these actions may influence their waste disposal

behaviour. Ultimately, values and beliefs influence an individual's norm structure through awareness of consequences and ascription of responsibility (Stern 2000: 413). Personal norms may then in turn influence the individual's behaviour in terms of behaving in an environmentally responsible manner or not (Stern, 2000: 413). Finally, each one of these concepts in the framework is individually related to clothing disposal behaviour. Therefore, not only does the sequence move from values, to beliefs, to norms, but also the role of each of these is explored in relation to the various clothing disposal methods. The conceptual framework is presented in Figure 2.3 (see page 34).

## 2.9 RESEARCH OBJECTIVES

**Objective 1:** To explore and describe the value orientations of female consumers who engage in clothing disposal behaviour in the South African emerging market context.

*Sub-objective 1.1:* To explore the biospheric-, egoistic- and altruistic value orientations of female consumers who engage in clothing disposal behaviour.

*Sub-objective 1.2:* To describe the relationship between demographic variables (i.e. age, marital status, number of children, ethnic group, household income and level of education) and the value orientations of female consumers who engage in clothing disposal behaviour.

**Objective 2:** To describe the ecological worldview of female consumers who engage in clothing disposal behaviour in the South African emerging market context.

*Sub-objective 2.1:* To determine female consumers' level of agreement with aspects that relate to the relationship between human beings and their environment (i.e. NEP measurement).

*Sub-objective 2.2:* To describe the relationship between demographic variables (i.e. age, marital status, number of children, ethnic group, household income and level of education) and the ecological worldview of female consumers who engage in clothing disposal behaviour.

**Objective 3:** To explore and describe female consumers' beliefs regarding the consequences of clothing disposal behaviour and the personal norms that guide such behaviour.

*Sub-objective 3.1:* To explore female consumers' awareness of consequences (AC) related to the disposal of clothing, their ascription of responsibility (AR) for such consequences and the personal norms (PN) that guide their clothing disposal behaviour.

*Sub-objective 3.2:* To describe the relationship between demographic variables (i.e. age, marital status, number of children, ethnic group, household income and level of education) and AC, AR and PN that guides the clothing disposal behaviour of female consumers.

**Objective 4:** To explore and describe the specific methods female consumers use to dispose of their unwanted clothing items.

*Sub-objective 4.1:* To determine the specific methods (including reselling, recycling, donation, discarding and re-using) that are used by female consumers to dispose of their unwanted clothing items.

*Sub-objective 4.2:* To describe the relationship between demographic variables (i.e. age, marital status, number of children, ethnic group, household income and level of education) and the specific methods female consumers use to dispose of their unwanted clothing items.

**Objective 5:** To describe the relationship between specific types of clothing disposal methods (including reselling, recycling, donation, discarding and re-using) and:

- The value orientations of female consumers;
- The ecological worldview of female consumers; and
- Female consumers' beliefs about the consequences of clothing disposal behaviour, and the personal norms (PN) that guide such behaviour.

## 2.10 CONCLUSION

From the review of literature, it is apparent that this study contributes to consumer behaviour research in South Africa. This study identifies South Africa as an emerging economy, which necessitates the incorporation of values, beliefs and norms when exploring environmental behaviour. Furthermore, this study introduces theories and scales that are new to the research field in South Africa, and particularly to consumer behaviour research. As a result, the research objectives were structured to indicate the relationship between values, beliefs and norms and consumers clothing disposal behaviour.



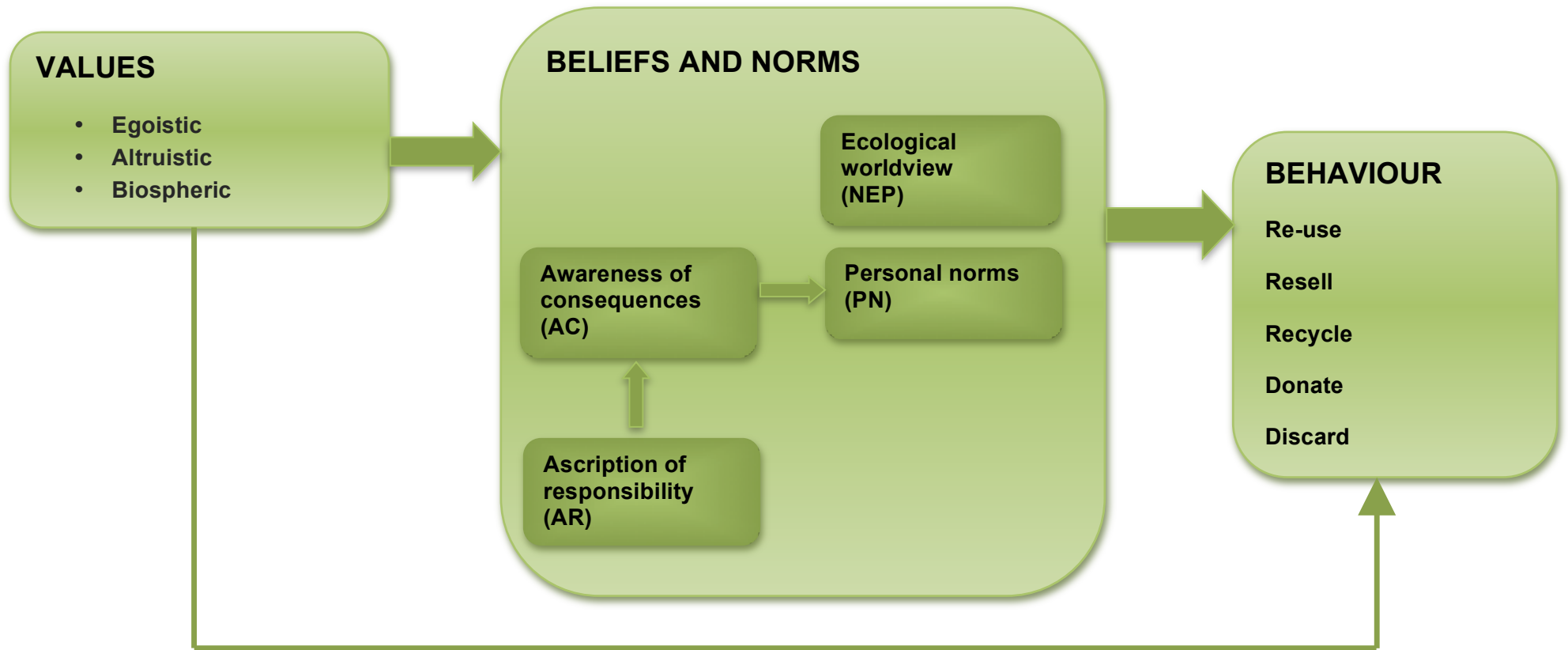


FIGURE 2.3: CONCEPTUAL FRAMEWORK

## Chapter 3

---

# Research Design and Methodology

---

*This chapter describes the research approach, research design and methodology used in this study. Attention is also paid to the quality of the research and ethical concerns.*

### **3.1 INTRODUCTION**

Research in the social sciences is generally aimed at studying people in terms of their beliefs, relations, and behaviours (Neuman, 2000: 6), so as to obtain information, explain situations or engage in human interactions (De Vos & Strydom, 2011: 42). The following paragraphs are aimed at introducing and explaining the research design and methodology of this study. Research design simply introduces the methods used to obtain information about the selected sample for this study. The methodology further introduces and explains the sample and the sampling techniques used to obtain an adequate and valid sample for the study; the development of the questionnaire and the original scales that were used as a basis for development; the data collection methods and the advantage and disadvantages involved; and the methods of data analysis summarised in an operationalisation table, according to the objectives formulated for this study. This chapter further introduces the steps that were taken to ensure quality of the data through validity and reliability of the research procedures, and emphasises the ethical procedures that were applicable for this study.

### **3.2 RESEARCH DESIGN**

A cross-sectional survey design was chosen for this study, as it evaluates multiple variables such as demographics, perceptions and opinions of selected samples at one point in time, using a series of questions (Fouché, Delport & De Vos, 2011: 156). The survey is used for descriptive and exploratory purposes in the field of consumer research. Exploratory research allows the researcher to gain knowledge about a specific topic (Babbie & Mouton, 2001: 79-80), such as South African consumers' clothing disposal behaviour. Descriptive research

explains particular influences or situations (Babbie & Mouton, 2001: 79-80). For this study, the influence of values, beliefs and norms in relation to consumers' clothing disposal behaviour was explored. A quantitative research approach was used, since this approach uses figures, calculations and statistics to explore and describe certain subjects, therefore, the researcher may achieve a precise understanding of the researched problem by means of a quantitative approach (Fouché & Delport, 2011: 66).

### **3.3 METHODOLOGY**

#### **3.3.1 Sample and sampling**

By using a large research sample, the researcher gathers a substantial amount of information, which amplifies the significance and validity of the study (Bless, Higson-Smith & Kagee, 2006: 107). Therefore, for this study the sample included just over three hundred female consumers in the Tshwane region. Tshwane is a major metropolitan area in South Africa, and as pointed out by Chatterjee (2008: 18), urban residents in emerging markets tend to experience higher levels of mass media exposure and education regarding pertinent issues such as global warming and other environmental concerns. In terms of time and financial resources, the City of Tshwane also represented the most viable geographical scope for this study, as the principle researcher was based at the University of Pretoria, which is situated in this region.

Female respondents were chosen, as females tend to be more environmentally concerned than men (Iyer & Kashyap, 2007: 43; Barr, 2003: 237; Zelezny, Chua & Aldrich, 2000: 445) and several studies have focused on the role of females in environmentally responsible clothing behaviour (Bianchi & Birtwistle, 2012: 337; Bianchi & Birtwistle, 2010: 355; Koch & Domina, 1997: 10; Shim, 1995: 45). A diverse age group ranging from 18 to 65 years was included in this study, since the Tshwane region is home to female consumers ranging from students to pensioners. According to the City of Tshwane Municipal Household Survey (2008: 45), 982 353 Tshwane residents, between the ages of 15 and 64, are economically active (i.e. able to perform work activities), of which 80.2% are employed. For the purposes of this study it was important to recruit females that formed part of an economically independent age group who are able to make their own autonomous decisions regarding the disposal of their clothing items. Furthermore, females within these age groups were chosen, as they were likely to be relatively literate and able to comprehensively understand the terminology and concepts of the questionnaire. The age spectrum of 18 to 65 was thus

considered appropriate, whilst allowing sufficient diversity to explore potential differences among women of various age groups' clothing disposal practices.

Apart from gender, age and area of residence, other demographic variables such as marital status, number of children, population group or ethnicity, household income, and level of education were not restricted to specific criteria, to allow for the inclusion of a broader scope of potential participants. For the purposes of this study, a non-probability purposive sampling technique was used. A non-probability sampling method suggests that the members, as well as the size of the population, are unknown to the researcher. As a result, respondents do not all have the same probability of being chosen to form part of the sample (Strydom & Delpont, 2011: 391). Yet, purposive sampling ensured that the characteristics of the participating respondents adhere to the specific requirements of the study (Strydom, 2011a: 232) in terms of age, gender and residential area. Sampling was initiated by a snowball sampling method whereby potential participants were reached through colleagues, friends, family, friends of family members and other individuals. The above-mentioned respondents were then asked to distribute questionnaires to other potential respondents (Grinnell & Unrau, 2008: 153), thereby expanding the research field, and allowing the researcher to reach more respondents in less time.

### **3.3.2 Questionnaire development**

A structured questionnaire was developed for this study (included in Addendum A), which consisted of five sections. Most of the sections comprised of existing scales that were used in previous studies and that were adapted to address the objectives of this study. Existing scales were thus used as guiding instruments and their accompanying instructions were applied to the scales used in this study. The following discussion provides a brief overview of each of the sections included in the questionnaire:

#### **Section 1: Demographics**

Age, marital status, number of children, population group or ethnicity, household income, level of education and residential area were included as demographic variables for this study. Questions were carefully formulated to address each of the variables, and to ensure that the demographic profile of the respondents could be adequately described.

## Section 2: Value Orientation Scale

For the purposes of this study the Value Orientation Scale of De Groot and Steg (2008) was used as a basis from which to develop an appropriate scale to measure respondents' values. De Groot and Steg's (2008) scale consists of measures that were originally specified in Schwartz's (1992) Value Scale and includes four egoistic value orientation items, four altruistic value orientation items and four biospheric value orientation items. In Schwartz's (1992) scale there were only three altruistic value orientation items, but De Groot and Steg (2008) added an additional item to obtain an equal number of value orientation items throughout the scale. The Cronbach alpha's reported for this scale were as follows:  $\alpha=0.65$  for the egoistic value items;  $\alpha=0.72$  for the altruistic value items and  $\alpha=0.83$  for the biospheric value items. The scale of De Groot and Steg (2008) uses a nine-point scale to measure the importance assigned to a specific value (e.g. protecting the environment) ranging from -1 (*opposed to my values*) to 7 (*extremely important*). Based on statisticians' recommendations the scale was adapted to a four-point Likert-type scale, whereby respondents were asked to indicate their level of agreement with statements that reflected each of the value items (e.g. "We must preserve nature", which is a statement representing biospheric values). It was argued that respondents would have a better understanding of a particular value if it was more specifically described in a statement, rather than to indicate the level of importance of a single concept (e.g. protecting the environment), which is open to broad interpretation. Four statements were developed for each of the egoistic values including *social power, wealth, authority and influence*. Similarly, statements that reflected altruistic values such as *equality, world at peace, social justice and helpfulness*, as well as biospheric values including *preventing pollution, respecting the earth, unity with nature and protecting the environment* were formulated to measure respondents' value orientations. Particular attention was devoted to phrasing the items in such a manner that they would not be misinterpreted. The resulting value orientation scale included 48 value items. Respondents were asked to indicate their level of agreement with each item ranging from 1 (strongly disagree) to 4 (strongly agree).

## Section 3: The New Ecological Paradigm Scale (NEP)

In the 1970s Dunlap and Van Liere (1978) reasoned that environmentalism is based on a change in people's beliefs about the relationship between humans and nature, which led to the development of the New Environmental Paradigm Scale. The New Environmental Paradigm scale was developed in an attempt to measure people's understanding of the

influence and consequences that humans have on nature, and whether their worldview is substantiated by the belief that humans might disturb the balance of nature (Dunlap *et al.*, 2000: 427). The New Environmental Paradigm Scale concentrated on three main beliefs concerning nature (Dunlap & Van Liere, 1978): the first is the belief that humans have the ability to disturb nature; the second belief is about the limits that exist for the growth of human societies, and the third belief is about the rights that humans have to control nature (Dunlap *et al.*, 2000: 427). The New Environmental Paradigm Scale consisted of 12 items measuring these three aspects, and had an internal consistency of  $\alpha=0.81$  (Dunlap *et al.*, 2000: 427). Although the scale was seen as an adequate measuring instrument for environmentalism, the idea of an environmental worldview is rather unstructured and ambiguous (Dunlap *et al.*, 2000: 429). Based on several studies that had subsequently employed the original scale, Dunlap and Van Liere eventually concluded that the three main aspects are not adequately reflected in the 12 items of the scale (Dunlap *et al.*, 2000: 430). The authors addressed the inconsistencies of the original scale, and in 2000 published the revised New Ecological Paradigm Scale (NEP) (Dunlap *et al.*, 2000).

The NEP Scale of Dunlap *et al.* (2000) was modelled after the New Environmental Paradigm Scale of Dunlap and Van Liere (1978), and measures an ecological worldview of beliefs about the relationship between human beings and the environment. In contrast to the original scale, the term “Ecological” includes a broader spectrum of ideas surrounding the concept of environmentalism (Dunlap *et al.*, 2000: 432). The revised NEP Scale consists on 15 items and due to the revisions, the scale is more comprehensive, has item direction balance, improved terminology, and consistency with a Cronbach alpha of  $\alpha=0.83$ . As a result, several researchers in the field of environmentalism have modified, copied and used the revised scale in their studies (Best & Mayerl, 2013; Chen, 2012; De Groot & Steg, 2008; López & Cuervo-Arango, 2008; Slimak & Dietz, 2006; Steg *et al.*, 2005), and was therefore also considered appropriate for the purposes of this study. The 15 items of the revised NEP Scale are measured on a five-point scale. In this study, respondents were asked to indicate the strength of their agreement or disagreement with each item on a four-point Likert-type scale from 1 (strongly disagree) to 4 (strongly agree). A four-point scale was used to ensure consistency with the Likert-type scales included in the other sections of the questionnaire.

With the NEP Scale, a sum formula is used to calculate a total scale score. Scores range from 15 to 75, with high scores indicating complete acceptance of the NEP Scale (Dunlap *et al.*, 2000). For this study, the highest total score that could be obtained was 60 due to the four-

point scale that was used. The higher the sum total, the higher the pro-environmental intent. Apart from the four-point scale, question wording and format was retained exactly as it is specified in the revised NEP Scale of Dunlap *et al.* (2000). Accordingly, eight scale items contained wording reflecting positive reactions towards the environment, while seven were negatively worded, reflecting negative reactions towards the environment (Hawcroft & Milfont, 2010: 144; Dunlap, 2008: 9). The negatively stated items were reverse-scored according to the guidelines of Dunlap *et al.* (2000).

#### **Section 4: Awareness of consequences (AC), ascription of responsibility (AR) and personal norm (PN) scale**

The concepts of AC, AR and PN have been included in various theories related to environmental behaviour (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994; Schwartz, 1977). The Norm-Activation Model of Schwartz (1977) included AC as an influencer of PN and ultimately behaviour (Steg *et al.*, 2005: 416). Similarly, the VBN Theory (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994) suggests that PN influences behaviour, and that PN is activated by AC and AR. The VBN Theory also suggests that AC and AR are related to the beliefs measured by the NEP Scale (Steg *et al.*, 2005: 416).

In this study, the measures used by Steg *et al.* (2005) for the AC, AR and PN scale was considered particularly appropriate since these authors also based their empirical evidence on the above mentioned models, with a similar conceptualisation of AC, AR and PN as presented in this study. In their study, Steg *et al.* (2005: 418) used 21 items to measure AC, AR and PN and reported Cronbach's alphas of  $\alpha=0.75$  for the AC items,  $\alpha=0.80$  for the AR items and  $\alpha=0.84$  for the PN items. These scale items were adapted for the purposes of this study and eventually included 17 items. The adapted scale had six AC items, six AR items and five PN items. For the sake of consistency the Likert-type scale used in this study ranged from 1 (strongly disagree) to 4 (strongly agree), as opposed to the original five-point scale used by Steg *et al.* (2005).

#### **Section 5: Clothing Disposal Scale**

Shim's (1995) "Constructs of Clothing Disposal Patterns and General Environmentalism" was used as a guideline for this section. The original scale has 20 items that are divided into eight disposal options: economically-motivated resale, environmentally-motivated resale, charity-motivated donation, environmentally-motivated donation, economically-motivated re-use, environmentally-motivated re-use, convenience-oriented discarding, and unawareness-

based discarding. The scale also includes an environmental attitude section, consisting of five questions, and a recycling behaviour section consisting of three questions. The scale's Cronbach's alphas range from  $\alpha=0.74$  to  $\alpha=0.89$ . For the purposes of this study the scale was adapted to include 23 items, which were divided into only five broad categories, namely, reselling (seven items), re-using (four items), donation (four items), recycling (four items) and discarding (four items).

The clothing disposal categories for this study were created by considering the items in Shim's (1995) scale for each disposal method, and incorporating or adapting the items in the scale to address clothing disposal methods as they apply to the local South African context. Three of the items that relate to economically-motivated resale and an environmentally-motivated resale item were adapted to address *reselling* as a disposal method in the local context. An additional four items were self-developed to further measure this disposal method in the current study. All of the items that were focused on charity-motivated donation and environmentally-motivated donation in Shim's (1995) study were considered appropriate for the purposes of this study to specifically explore *donation* as a disposal method. Similarly, all of the Shim's (1995) economically-motivated re-use and environmentally-motivated re-use items were incorporated into this study to explore *re-using* as a disposal method. It should however be noted that some of the original wording was modified to enhance readability and comprehension of the items. None of the items used by Shim (1995) to measure convenience-oriented discarding or unawareness-based discarding were applicable for the local context and were therefore omitted from the questionnaire used in this study. Instead, four items were self-developed to measure *discarding* as a clothing disposal method in this study. The final clothing disposal method explored in this study was *recycling*. Although Shim (1995) included items that relate to recycling behaviour, these items were of a more general nature and did not measure clothing recycling behaviour in particular. As such, four items were self-developed to explore clothing recycling as a disposal method in this study. To ensure consistency throughout the questionnaire a four-point Likert-type scale was used ranging from 1 (strongly disagree) to 4 (strongly agree).

A pilot-test was conducted to identify potential problems or errors in the questionnaire and to improve shortcomings before actual data collection commenced. The questionnaire was examined for readability, comprehension and clarity. From the pilot-test it was found that some of the phrases or words were misleading and misrepresentative of some of the main



concepts and were therefore not interpreted correctly by the respondents. These phrases or words were improved for better overall comprehension of the questionnaire.

### **3.3.3 Data collection**

Data collection was done from April to June 2013. Questionnaires were delivered by hand. Improved response rates are ensured through hand-delivered questionnaires as the respondent has personal contact with the researcher or fieldworker, and any uncertainties about the questionnaire are easily clarified in a face-to-face situation (Delpont & Roestenburg, 2011: 188). The hand-delivered questionnaires were collected one to two weeks after delivery. The disadvantages associated with hand-delivered questionnaires in this study were the limited geographical area, which could be reached by fieldworkers, costs of printing and distribution, and the extended time frame that was needed to drop-off and collect questionnaires. This study was conducted in a fairly restricted geographical area, which allowed for hand delivery with high response rates.

### **3.3.4 Data analysis**

Coding and capturing the data into electronic format concluded the quantitative data collection procedure. The following steps involved converting the data into constructive numeric expressions, which were then statistically analysed by statisticians of the University of Pretoria. At this point, it is important to emphasise that non-probability sampling was used, and therefore the results could not be generalised to the whole population (Strydom, 2011a: 231). The initial data analysis involved descriptive statistics, which then further progressed into inferential statistics as summarised in Table 3.1.

TABLE 3.1: OPERATIONALISATION TABLE

<b>Objective 1: To explore and describe the value orientations of female consumers who engage in clothing disposal behaviour in the South African emerging market context.</b>				
Sub-objectives	Dimensions	Indicators, aspect measured	Measuring instrument	Data analysis and type of statistics
<b>Objective 1.1:</b> To explore the biospheric-, egoistic- and altruistic value orientations of female consumers who engage in clothing disposal behaviour.	Biospheric values	Compassion towards surrounding environment and fellow humans	<b>QUESTIONNAIRE SECTION 2</b> • Adapted Value Orientation Scale  (De Groot & Steg, 2008). • Four-point Likert-type	<b>Descriptive statistics:</b> • Percentages • Frequencies • Means <b>Inferential statistics:</b> • Exploratory factor analysis with unrestricted rotation as well as Procrustes rotation • MANOVA Model • Pearson Correlation Coefficient
	Egoistic values	Self-interested concerns		
	Altruistic values	Concerns about the wellbeing of other people and society		
<b>Objective 1.2:</b> To describe the relationship between demographic variables (i.e. age, marital status, number of children, ethnic group, household income and level of education) and the value orientations of female consumers who engage in clothing disposal behaviour.	Age			
	Marital status			
	Number of children			
	Ethnic group			
	Household income			
	Level of education			
<b>Objective 2: To describe the ecological worldview of female consumers who engage in clothing disposal behaviour in the South African emerging market context.</b>				
Sub-objectives	Dimensions	Indicators, aspect measured	Measuring instrument	Data analysis and type of statistics
<b>Objective 2.1:</b> To determine female consumers' level of agreement with aspects that relate to the relationship between human beings and their environment (i.e. NEP measurement).	Ecological worldview of beliefs	Measuring primitive beliefs about the relationship between human beings and the environment.	<b>QUESTIONNAIRE SECTION 3</b> • Adapted New Ecological Paradigm (NEP) Scale (Dunlap et al., 2000). • Four-point Likert-type	<b>Descriptive statistics:</b> • Percentages • Frequencies • Means <b>Inferential statistics:</b> • MANOVA Model • Pearson Correlation Coefficient
Marital status				
Number of children				
Ethnic group				
Household income				
Level of education				

<b>Objective 3: To explore and describe female consumers' beliefs regarding the consequences of clothing disposal behaviour and the personal norms that guide such behaviour.</b>				
Sub-objectives	Dimensions	Indicators, aspect measured	Measuring instrument	Data analysis and type of statistics
<b>Objective 3.1:</b> To explore female consumers' awareness of consequences (AC) related to the disposal of clothing, their ascription of responsibility (AR) for such consequences and the personal norms (PN) that guide their clothing disposal behaviour.	Aware of the consequences	Awareness of the consequences of clothing disposal behaviour	<b>QUESTIONNAIRE SECTION 4</b> • Adapted Awareness of Consequences (AC), Ascription of Responsibility (AR) and Personal Norm (PN) (Steg et al., 2005). • Four-point Likert -type	<b>Descriptive statistics:</b> • Percentages • Frequencies • Means <b>Inferential statistics:</b> • Exploratory factor analysis with unrestricted and Forced rotation • MANOVA Model • Pearson Correlation Coefficient
	Ascription of responsibility	Responsibility ascribed for consequences		
	Personal norms	Influence of personal norms on clothing disposal behaviour		
<b>Objective 3.2:</b> To describe the relationship between demographic variables (i.e. age, marital status, number of children, ethnic group, household income and level of education) and AC, AR and PN that guides the clothing disposal behaviour of female consumers.	Age			
	Marital status			
	Number of children			
	Ethnic group			
	Household income			
	Level of education			
<b>Objective 4: To explore and describe the specific methods female consumers use to dispose of their unwanted clothing items.</b>				
Sub-objectives	Dimensions	Indicators, aspect measured	Measuring instrument	Data analysis and type of statistics
<b>Objective 4.1:</b> To determine the specific methods (including reselling, recycling, donation, discarding and re-using) that are used by female consumers to dispose of their unwanted clothing items.	Reselling	Reselling of unwanted clothing	<b>QUESTIONNAIRE SECTION</b> • Adapted Clothing Disposal Method scale (Shim, 1995) • Four-point Likert -type	<b>Descriptive statistics:</b> • Percentages • Frequencies • Means <b>Inferential statistics:</b> • Exploratory factor analysis with unrestricted and Forced rotation • MANOVA Model • Pearson Correlation Coefficient
	Re-using	Re-using of unwanted clothing		
	Donating	Donating of unwanted clothing		
	Recycling	Recycling of unwanted clothing		
	Discarding	Discarding of unwanted clothing		
<b>Objective 4.2:</b> To describe the relationship between demographic variables (i.e. age, marital status, number of children, ethnic group, household income and level of education) and the specific methods female consumers use to dispose of their unwanted clothing items.	Age			
	Marital status			
	Number of children			
	Ethnic group			
	Household income			
	Level of education			

**Objective 5:** To describe the relationship between specific types of clothing disposal methods (including reselling, recycling, donation, discarding and re-using) and:

- The value orientations of female consumers;
- The ecological worldview of female consumers; and
- Female consumers' beliefs about the consequences of clothing disposal behaviour, and the personal norms (PN) that guide such behaviour.

	Value orientations	Reselling		<b>Inferential statistics:</b> <ul style="list-style-type: none"> <li>• Pearson Correlation Coefficient</li> </ul>
		Re-using		
	Ecological worldview	Donating		
	AC, AR and PN	Recycling		
		Discarding		

### 3.4 ENHANCING THE QUALITY OF THE DATA

The quality of quantitative research depends on the measurability, validity and reliability of the data obtained (Delpont & Roestenburg, 2011: 172). Validity of a research project necessitates the use of a straightforward, truthful and dependable research design instrument. Therefore, the instrument used needs to fulfil its purpose and achieve the research objectives (Leedy & Ormrod, 2005: 28). The **validity** of this research project was increased through the use of valid and tested scales as well as methods, which include the following:

*Conceptualisation and theoretical validity:* The key concepts were identified in the conceptual framework, and were thoroughly explained in the literature review, by examining empirical evidence related to values, beliefs, norms, pro-environmental behaviour, clothing disposal methods and recycling.

*Content and measurement validity* of the questionnaire was ensured through a pilot study conducted to determine the level of understanding of the questionnaire by the respondents, and the time it would take to complete the questionnaire. Experts in the field of Consumer Science research and statisticians of the University of Pretoria's Department of Statistics also assisted in the development of the questionnaire and its final approval.

*Operationalisation and construct validity:* Construct validity verifies the level to which an instrument effectively measures a theoretical construct (Delpont & Roestenburg, 2011: 174).

Concepts were broken down into dimensions and indicators that help to explain the concepts for this study. Subsequent descriptive statistics were performed on the data and included percentages, frequencies and means. Further inferential statistics included exploratory factor analyses such as unrestricted rotation, forced rotation and Procrustes rotation. Multi-variate analysis of variance (MANOVA) and Pearson Correlation Coefficients were also used to analyse the data.

*Content validity and representativeness of the sample:* For a study to have content validity there has to be representativeness (Delpont & Roestenburg, 2011: 173). A sample of 306 female respondents was recruited for this study, which was considered appropriate for the exploratory and descriptive purposes of this study.

**Reliability** is the second method of ensuring a measurable research project. Reliability refers to internal consistency and soundness of a measuring instrument (Delpont & Roestenburg, 2011: 177). The reliability of this study was increased through a number of aspects: A pilot study was conducted to eliminate any confusion or errors concerning the questionnaire. A variety of indicators and dimensions were identified and used in different questions, to ensure each specified objective was met. Scales were used, which had been tested in previous studies and that obtained Cronbach's alphas ranging from  $\alpha = 0.65$  to  $\alpha = 0.89$ . Detailed instructions accompanied the questionnaire, and incomplete questionnaires or questionnaires with confusing or ambiguous responses were not included into the final results.

### **3.5 ETHICAL CONSIDERATIONS**

A research study's foundation should consist of approval, assurance, support, trust and identified expectations between the researcher and the participants involved (Strydom, 2011b: 113). Researchers must, above all, be concerned with the people participating in their research, and also with delivering accurate and truthful findings (Gravetter & Forzano, 2003: 60). For this study, the researcher's competency ensured adequate supervision, honesty, accuracy and a plagiarism-free research. As a result, misinterpretation or inaccuracy was avoided. Participation was controlled and voluntary at all times. Respondents were thoroughly informed about the purpose of the research, course of actions, and the extent of the respondents' participation, before they completed the questionnaire. Respondents were assured that no identification was required and that all personal information provided would be confidential and used for research purposes only

(Strydom, 2011b: 115). Respondents had the option to withdraw from participating at any stage. Before commencing data collection, approval was obtained from the Research Ethics Committee of the University of Pretoria (included in Addendum D).

### **3.6 CONCLUSION**

This chapter described the research design, sample and sampling techniques, development of the questionnaire and the data collection methods that were used to obtain the necessary results for this study. The data analysis techniques were summarised according to the specified objectives of the study in an operationalisation table, and measures, which were employed to enhance the quality of data, were also described. In conclusion, ethical considerations were explained as they apply to the purposes of this study. This chapter relates important aspects that form the basis of the results that are discussed in the chapter to follow.

## Chapter 4

---

# Discussion and Interpretation of Results

---

*This chapter provides an overview of the results of the study, including demographic characteristics of the sample, descriptive statistics as well as inferential statistics. Results are organised and presented according to the study objectives. Objectives of the study are answered and explained with reference to existing literature.*

### 4.1 INTRODUCTION

The following paragraphs introduce the findings of this study, with relation to the problem statement. Findings are analysed and interpretations are presented. Firstly, the demographic characteristics of the sample are presented by means of descriptive statistics, and interpreted with relation to the characteristics of the broader City of Tshwane population. Further findings are presented according to the main research objectives that include findings based on values, beliefs, norms and clothing disposal behaviour. Findings are presented by means of descriptive- and inferential statistical analyses and interpretations are made with reference to existing literature.

### 4.2 CHARACTERISTICS OF THE SAMPLE

Vining and Ebreo (1990: 59) found that consumers who recycle may have different demographic characteristics to non-recyclers. Consequently, the following section provides a comprehensive overview of the demographic characteristics of the sample, to serve as an appropriate background for the results presented in the rest of the chapter.

#### 4.2.1 Gender

As pointed out in the sampling and sample discussion, females tend to be more environmentally concerned than men (Iyer & Kashyap, 2007: 43; Barr, 2003: 237; Zelezny *et al.*, 2000: 445) and the role of females in environmentally responsible clothing behaviour has been emphasized (Bianchi & Birtwistle, 2012: 337; Bianchi & Birtwistle, 2010: 355; Koch & Domina, 1997: 10; Shim, 1995: 45). Previous studies have also indicated that

females tend to show more altruistic and biospheric value orientations (Stern & Dietz, 1994: 77, 79; Stern *et al.*, 1993: 329-330). For these reasons only females were included in the sample (N=306), as they are more likely to engage in pro-environmental behaviour such as recycling.

#### 4.2.2 Age

The female consumers were within the age range of 18 to 65 years, and include an age group who are able to make their own autonomous decisions regarding the disposal of their clothing items. This wide age-spectrum allowed sufficient diversity to explore potential differences among women of various age groups' clothing disposal behaviour. Respondents indicated their precise age in an open question, and were then grouped into age-categories as summarised in Table 4.1 for the purpose of statistical analysis.

TABLE 4.1: AGE CATEGORIES OF RESPONDENTS (n=304; missing: n=2)

Categories of Analysis	N	%
18 - 24	104	34.21
25 - 30	62	20.39
31 - 40	50	16.45
41 - 50	46	15.13
51 - 65	42	13.82

Most of the respondents were in the age category 18 - 24 years (34%/n=104), which may be attributed to the fact that this study was conducted in the vicinity of a university. South Africa is a predominantly young nation as 26 million residents, out of a total population of fifty million people, are 24 years and younger (National Statistics Offices of the BRICS Group, 2013: 23). This younger segment of the population, known as Generation Y, is described as socially and environmentally conscious (Cant, Brink & Brijball, 2006: 106). The rest of the age categories were relatively evenly spread (Table 4.1).

#### 4.2.3 Marital status and children

Respondents were asked to indicate their marital status and number of children. The six marital status categories that were provided in the questionnaire were later regrouped into only two categories for the purpose of statistical analysis (Table 4.2). Respondents indicated their number of children in an open question, which was eventually grouped into two categories (Table 4.3).



TABLE 4.2: MARITAL STATUS OF RESPONDENTS (N=306)

Categories in Questionnaire	n	%	Categories of Analysis	n	%
Single	150	49.02	Single	166	54.25
Married	127	41.50			
Separated, but still legally married	2	0.65			
Divorced	9	2.94	Married	140	45.75
Couple living together	13	4.25			
Widow	5	1.63			

The majority of the respondents were single (54%/n=166), which included all of the marital status categories except “married” and “couple living together”. Those with spouses constituted 46% (n=140) of the sample. The difference between the number of respondents who had children and those who did not, was also minor, with a fraction more than half (53%/n=156) indicating that they had children (Table 4.3).

TABLE 4.3: CHILDREN IN HOUSEHOLD (n=296; missing: n=10)

Number of Children	n	%	Categories of Analysis	n	%
0	140	47.30	No-children	140	47.30
1	54	18.24			
2	61	20.61			
3	21	7.09	Have-children	156	52.70
4	14	4.73			
5	3	1.01			
6	3	1.01			

#### 4.2.4 Population group/ethnicity

As South Africa is a country with diverse cultures, it is necessary to include different population groups. Since this study’s main focus revolved around values, beliefs and norms that are likely to be influenced by culture, it was essential to include population-group categories in the demographic section of the study. The categories used are those distinguished by the South African Employment Equity Act. As most respondents were white, all the other population groups (Black, Coloured, Asian and ‘other’) were regrouped under ‘other’ for the purpose of statistical analysis (Table 4.4).

TABLE 4.4: REPRESENTATION OF POPULATION GROUP (n=305; missing: n=1)

Categories in Questionnaire	n	%	Categories of Analysis	n	%
Asian	9	2.95	Other	99	32.46
Black	80	26.23			
Coloured	9	2.95			
White	206	67.54	White	206	67.54
Other	1	0.33			

Most respondents were white (68%/n=206) (Table 4.4), which may be attributed to the snowball sampling method used. The initial respondents recruited for the study were white. Through their referral other respondents were recruited who were also predominantly white. This scenario emphasises some of the limitations of a snowball sampling technique and reiterates the fact that the results cannot be generalised to the whole population (Strydom, 2011a: 233).

#### 4.2.5 Household income

Previous studies have indicated that consumers' level of income affects the frequency of participation in pro-environmental activities (Domina & Koch, 2002: 221). Household income was originally divided into five categories in the questionnaire and was regrouped into four categories for statistical purposes as indicated in Table 4.5.

TABLE 4.5: MONTHLY HOUSEHOLD INCOME (n=305; missing: n=1)

Categories in Questionnaire	n	%	Categories of Analysis	n	%
<R5000	80	26.23	<R5000 (low)	80	26.23
≥R5000 - R9 999	42	13.77	≥R5000 - R19 999 (medium-low)	90	29.51
≥R10 000 - R19 999	48	15.74			
≥R20 000 - R29 999	30	9.84	≥R20 000 - R39 999 (medium-high)	66	21.64
≥R30 000 - R39 999	36	11.80			
≥R40 000	69	22.62	≥R 40 000 (high)	69	22.62

Household income levels were relatively evenly spread, although a slight majority were categorised in the medium-low (30%/n=90) and low income brackets (26%/n=80) (Table 4.5).

#### 4.2.6 Level of education

In addition to gender, age, marital status, number of children, population group and household income, education might also have an influence on an individual's pro-environmental behaviour. Therefore, respondents were asked to indicate their level of

education. Three categories were originally specified in the questionnaire and were regrouped into two categories (Table 4.6).

TABLE 4.6: REPRESENTATION OF LEVEL OF EDUCATION (n=305; missing: n=1)

Categories in Questionnaire	n	%	Categories of Analysis	n	%
Lower than Grade 12	14	4.59	Grade 12 and lower	111	36.39
Grade 12	97	31.80	Post matriculation diploma/degree	194	63.61
Grade 12 and Degree/Diploma	194	63.61			

As indicated in Table 4.6, most of the respondents (64%/n=194) had a higher level of education (i.e. post matriculation diploma/ degree), which may be attributed to the fact that most respondents were recruited in the surrounding areas of the University of Pretoria. In a recent review of The City of Tshwane Integrated Development Plan (IDP) (2013: 13) it was indicated that only 4% of the population of Tshwane had no schooling. However, in 2008, only 16.5% of the Tshwane residents, who were 20 years and older, had a higher level of education (The City of Tshwane Municipal Household Survey, 2008: 32). It is therefore important to note that the level of education among the respondents included in this sample may not be entirely reflective of the level of education among the greater Tshwane population.

#### 4.2.7 Area of residence

As indicated in the sampling approach, respondents were recruited in the greater Tshwane Metropolitan area. Respondents indicated their area of residence in an open question. These areas were grouped into five major regions (Figure 4.1).

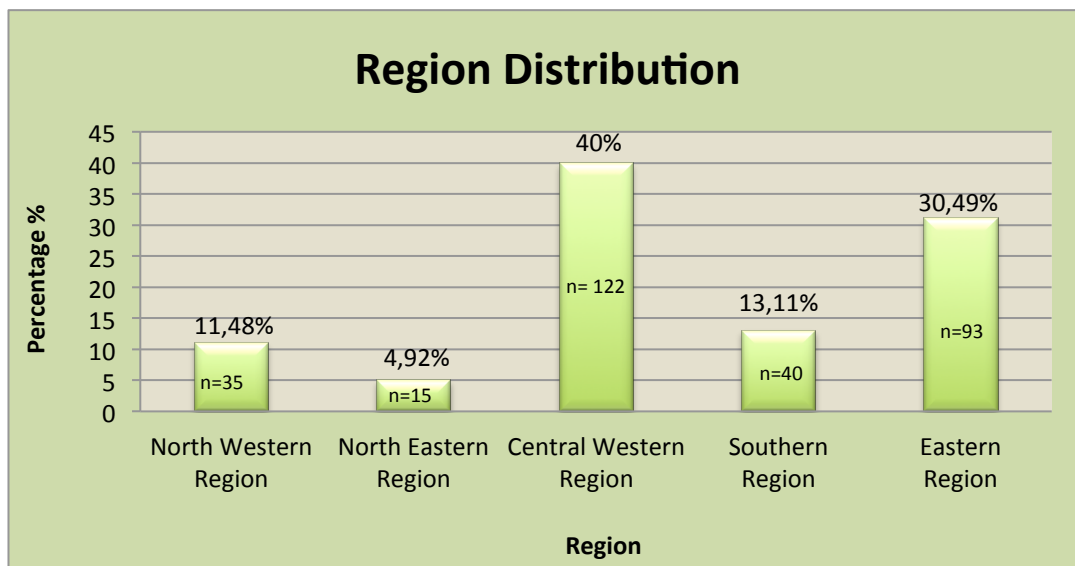


FIGURE 4.1: AREA OF RESIDENCE WITHIN GREATER TSHWANE METROPOLITAN AREA (n=305; missing: n=1)

The City of Tshwane IDP review (2013:12) showed that in 2011, the majority of Tshwane residents lived in region 1, which is the North West region of the City of Tshwane. The second highest populations were found in region 6 (i.e. South East region of the City of Tshwane), and region 3 (i.e. Western part of Tshwane). Most respondents for this study indicated that they reside in the Central Western region, which forms part of region 3 (40%/n=122). This may be attributed to the fact that most of the respondents were recruited in the surrounding areas of the University of Pretoria, which is situated in this region. Furthermore, respondents who indicated that they reside in Pretoria, without further specification of their area of residence, were also grouped into the Central Western region. The Eastern region, which forms part of region 6, had the second highest number of respondents (30%/n=93).

In summary, the respondents for this study were females, within the age range of between 18 and 65 years. Within this age spectrum, a large group was younger than 25 (34%/n=104). Just over half of the respondents were single (54%/n=166), with the rest married or living together as a couple (46%/n=140). Those who did have children (53%/n=156) were almost equal in number to those who did not have children (47%/n=140). The majority of the respondents were white (68%/n=206), and a large segment of the respondents earned either less than R5000 (26%/n=80), or more than R5000, but less than R20 000 (30%/n=90) per month. Most respondent's level of education was higher than Grade 12 (64%/n=194), and the majority lived in Central Western Tshwane (40%/n=122). Since non-probability sampling and snowball sampling was used, the results could not be generalised to the whole population (Strydom, 2011a: 231); however, for the exploratory and descriptive purposes of this study the respondents represented an acceptable profile of females in the Tshwane region.

### **4.3 RESULTS, DISCUSSIONS AND INTERPRETATIONS**

In the following section results are presented and discussed according to the objectives for the study.

#### **4.3.1 Results based on value orientations of female consumers who engage in clothing disposal behaviour.**

The Value Orientation Scale presented by De Groot and Steg (2008) introduced three main value orientations known as biospheric-, altruistic-, and egoistic value orientations. These

three value orientations were included in this study and used as a guide to categorise values presented in this research. The Value Orientation Scale of De Groot and Steg (2008) introduced 4 items for each value orientation, but for this study, the items were increased to 16 items per value orientation category. The items were rephrased to make them more applicable to South African conditions and to ensure that all the statements were easy to understand. One of the main objectives for this study was to explore and describe the value orientations of female consumers who engage in clothing disposal behaviour within the South African context. As a first step toward achieving this objective, a factor analysis was performed to determine the components for each of the three value orientations. Initial factor extractions indicated ten factors. For the investigation of the above-mentioned relationship, a three-factor extraction was performed on the data obtained for section two of the questionnaire. As the original Value Orientation Scale of De Groot and Steg (2008) was adapted for this study, the factor extractions described were pursued. The ten-factor analysis was rejected in preference to the three-factor analysis that was considered more favourable.

As explained, the components of each value orientation (biospheric, egoistic and altruistic) were extracted by factor analysis and the factor components for each value orientation category, used for this study, were adjusted and placed according to their factor loading. By considering the means for each factor's components, the Cronbach's alpha coefficient of these components for all three factors used in this study (biospheric  $\alpha = 0.929$ , egoistic  $\alpha = 0.869$ , altruistic  $\alpha = 0.804$ ), endorse the consistency between them as well as the validity of the adapted scale. The Cronbach's alpha coefficients of the value orientations of the original scale by De Groot and Steg (2008) were  $\alpha = 0.83$  (biospheric values),  $\alpha = 0.65$  (egoistic values),  $\alpha = 0.72$  (altruistic values).

TABLE 4.7: FACTOR ANALYSIS FOR THREE VALUE ORIENTATIONS

Value Items	Biospheric (Factor 1)	Egoistic (Factor 2)	Altruistic (Factor 3)
Protecting the environment is important	0.895	0.026	-0.129
It is necessary for every human being to care for the environment	0.816	0.013	0.070
We must preserve nature	0.799	-0.026	-0.076
Individuals should be encouraged to protect natural resources	0.791	-0.081	-0.026
Human beings must respect the natural environment	0.760	-0.019	0.042
We should value nature	0.746	0.037	0.014
Pollution of our natural resources must be prevented	0.703	-0.029	-0.006
Humans should live in harmony with nature	0.696	-0.016	0.038
Humans should consider the earth valuable	0.678	0.034	0.067
People should safeguard the environment to minimize further damage	0.602	0.021	0.231
Human beings should live in harmony with other species	0.573	-0.046	0.148
People should do their utmost to prevent pollution	0.563	-0.101	-0.060
Human beings should view themselves as part of nature	0.555	0.134	0.141
It is necessary for people to live in unity with nature	0.536	0.051	0.195
We must adapt to fit in with nature	0.450	0.199	0.168
The earths' natural resources are limited	0.441	0.051	-0.039
People should value a world at peace	0.402	-0.029	0.355
Everybody should strive to achieve a world free from war	0.385	-0.038	0.329
Conflict prevents us from living in peace	0.296	0.097	0.291
To have a position of authority is important	0.058	0.763	-0.081
To be in command of others is admirable	-0.162	0.754	0.121
The ability to control others is important	-0.187	0.734	0.013
Being in control of others is of great importance	-0.133	0.720	-0.004
To have dominance in a social situation is admirable	-0.048	0.711	0.094
To be a leader is an important goal in life	0.129	0.658	0.120
To be wealthy is an important goal to strive for	0.010	0.646	-0.133
Material possessions are important	0.043	0.639	-0.050
Social power is an important life accomplishment	0.234	0.544	-0.131
It is necessary for a person to be able to influence situations	-0.009	0.522	0.198
Having money is of great value	0.134	0.492	-0.277
It is important to be able to influence others	-0.018	0.467	0.114
Money is an important part of life	0.201	0.449	-0.163
People with authority have the right to lead others	-0.082	0.415	0.273
The impact a person has on other people is important	0.201	0.219	0.163
People should value social justice	0.182	0.216	0.239
Each person should consider other people as equals	-0.075	-0.056	0.784
All people should be seen as equals	0.012	-0.042	0.699
Fairness among people is important	0.131	-0.092	0.598
We should care for the weak	0.156	0.035	0.572
Our actions should benefit others	-0.030	0.093	0.546
Correcting injustice is essential	0.148	-0.061	0.467
The welfare of others is important	0.257	-0.013	0.467
One person is not more important than another	0.026	-0.040	0.446
We need to be helpful towards others	0.303	-0.116	0.444
Helping others is praiseworthy	0.044	0.099	0.439
Everybody should have equal opportunities	0.192	-0.127	0.337
The impact you have on your daily events is of great consequence	0.296	0.109	0.314
Conflict is pointless	-0.016	0.182	0.262
<b>N</b>	<b>306</b>	<b>306</b>	<b>306</b>
<b>Mean</b>	<b>3.726</b>	<b>2.716</b>	<b>3.504</b>
<b>Standard error of mean</b>	<b>0.021</b>	<b>0.028</b>	<b>0.022</b>
<b>Variance explained</b>	<b>0.139</b>	<b>0.246</b>	<b>0.145</b>
<b>Cronbach Alpha</b>	<b>0.929</b>	<b>0.869</b>	<b>0.804</b>

It is evident from the results in Table 4.7 that the components of each of the three factors extracted were distributed well between the three value orientations compiled for the questionnaire. For the most part, the items within the factors were coherent in terms of literature and the three factors were labelled: Biospheric (Factor 1), Egoistic (Factor 2) and Altruistic (Factor 3). As indicated in Table 4.7, certain items loaded high on two factors. Three items included in the questionnaire as representative of altruistic values, loaded higher on Factor 1 (biospheric values) and one item included to measure biospheric values loaded higher on factor 3 (altruistic values). This confirms De Groot & Steg's (2008: 340) conclusion that altruistic and biospheric values are often difficult to separate. They found that although a theoretical distinction could be made, empirically there is very little support for a distinction between these two value orientations. For academic justification, a Procrustes Rotation employing a target matrix of factor components was performed on the data for the value orientations. The results of the Procrustes Rotation are indicated in Addendum 2.

Overall, means for the three factors indicated that respondents had stronger biospheric [mean (M)=3.726, standard error of the mean (SEM)= 0.021] and altruistic (M=3.504, SEM= 0.022) value orientations than egoistic values (M=2.716, SEM=0.028). Biospheric and altruistic values are closely related to the notion of sustainability as previous studies have indicated that when a consumer has strong biospheric values, he or she is likely to show consideration for nature and humans (Swami *et al.*, 2010: 140), and those with altruistic values are concerned for the wellbeing of others and society in general (De Young, 1986: 446; Stern *et al.*, 1993: 325). Self-interest forms the basis of egoistic values (Stern & Dietz, 1994: 70); however, the respondents for this study only showed moderate egoistic value orientations. For academic justification, a model that indicates the division of the three value orientations, and further confirms the dominance of biospheric and altruistic values of respondents for this study, is presented in Addendum 3.

#### **4.3.2 Relationship between demographic variables and the three value orientations**

To analyse the relationship between demographic characteristics and values, a multi-variate ANOVA (i.e. a MANOVA) was performed on the means obtained for the components of each factor.

TABLE 4.8: MANOVA MODEL FOR DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND THE VALUE ORIENTATIONS

Response variable: value orientations	Demographic groups	Levels
Biospheric	Age	5
	Marital Status	2
	Number of Children	2
Egoistic	Ethnicity	2
	Household Income	4
Altruistic	Level of Education	2

The grouping of the demographics is as follows; age group (18 - 24 years, 25 - 30 years, 31 - 40 years, 41 - 50 years, 51 - 65 years) (5 levels); marital status (single or married) (two levels); number of children (have-children or no-children) (two levels); ethnic group (white or other/non-white) (two levels); household income (<R5 000, ≥R5 000 but <R20 000, ≥R20 000 but <R40 000, ≥R40 000) (four levels); and level of education (≤Grade 12 or >Grade 12) (two levels). Each of these grouped demographic levels was investigated with respect to the response variables, Biospheric (Factor 1), Egoistic (Factor 2) and Altruistic (Factor 3) (Table 4.9).

TABLE 4.9: RELATIONSHIP BETWEEN DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND THE VALUE ORIENTATIONS

Demographic group	Number of levels per group	Biospheric (Factor 1)		Egoistic (Factor 2)		Altruistic (Factor 3)	
		F- Value	p-Value	F- Value	p-Value	F- Value	p-Value
Age	5	2.39	0.0514	1.68	0.1541	1.59	0.1760
Marital status	2	0.02	0.9022	4.08	0.0443*	0.12	0.7324
Number of children	2	2.88	0.0908	0.23	0.6340	4.78	0.0296*
Ethnicity	2	7.80	0.0056**	0.68	0.4095	0.05	0.8148
Household income	4	0.53	0.6652	2.76	0.0427*	0.98	0.4047
Level of education	2	3.36	0.0679	3.80	0.0522	1.43	0.2322
n		291		291		291	
Mean		3.730		2.733		3.507	
R-Square		0.099		0.093		0.050	
p-Value		0.0018**		0.0037**		0.2040	

\*p≤0.05 \*\*p≤0.01

It is important to mention that the statistical significance between categories of each demographic group is presented in Table 4.10, Table 4.11 and Table 4.12, and is indicated with superscripts. However, the statistical significance is only discussed when relevant.



#### 4.3.2.1 Relationship between demographic characteristics of the sample and biospheric values (Factor 1)

The overall p-Value for biospheric values was 0.0018, and indicates that the biospheric values are strongly related to the grouped demographics ( $p < 0.01$ ). It was found that that Factor 1 (biospheric values) is substantially affected by ethnicity (p-Value = 0.0056), and marginally affected by the age group (p-Value = 0.0514) (Table 4.10). The other demographic categories had no effect. Fisher's pair wise test was performed to see which LS-mean values for the various levels of the effect were significantly different.

TABLE 4.10: THE RELATIONSHIP BETWEEN BIOSPHERIC VALUES AND DEMOGRAPHICS (ETHNIC GROUP AND AGE GROUP)

Demographic group		Biospheric LS-mean	Std Error	p-Value
Ethnic group	Other	3.597 <sup>b</sup>	0.044	0.0056**
	White	3.742 <sup>a</sup>	0.030	
Age group	18 - 24	3.773 <sup>a</sup>	0.047	0.0514
	25 - 30	3.700 <sup>a</sup>	0.052	
	31 - 40	3.547 <sup>b</sup>	0.055	
	41 - 50	3.661 <sup>ab</sup>	0.061	
	51 - 65	3.667 <sup>ab</sup>	0.065	

*Means with different super scripts in the ethnic group category differ statistically significantly ( $p \leq 0.01$ )*

*Means with different super scripts in the age group category differ, but not statistically significantly.*

Although there is a high statistical significance for the relationship between ethnicity and biospheric values, the difference in the means of the categories included in the demographic group is only slight ( $M_{\text{White}}=3.74$ ;  $M_{\text{Other}}=3.60$ ). However, various studies explain that ethnicity does affect environmental behaviour (Taylor, 1989; Kellert, 1984; Mitchell, 1980). This was partially confirmed by the results of this study, but further studies are needed in the South African context, since less than a third of the sample consisted of Black, Coloured or Asian respondents, and is therefore not representative of the South African population. Furthermore, previous studies found that there is a relationship between age groups and pro-environmental behaviour (Birtwistle & Moore, 2007: 212; Domina & Koch, 2002: 219). However, in this study it was found that the relationship was only moderate.

#### 4.3.2.2 Relationship between demographic characteristics of the sample and egoistic values (Factor 2)

The general p-Value for egoistic values was 0.0037, and indicates that the egoistic values are strongly related to the grouped demographics ( $p < 0.01$ ) (Table 4.11). Household income (p-Value = 0.0427) and marital status (p-Value = 0.0443) had the most meaningful effect on the egoistic value orientation (Factor 2). The other demographic categories had no effect. Fisher's pair wise test was performed to see which LS-mean values for the various levels of the effect were meaningfully different.

TABLE 4.11: THE RELATIONSHIP BETWEEN EGOISTIC VALUES AND DEMOGRAPHICS (HOUSEHOLD INCOME AND MARITAL STATUS)

Demographic group		Egoistic LS-mean	Std Error	p-Value
Household income	< R5 000	2.920 <sup>a</sup>	0.066	0.0427*
	≥ R5 000 - <R20 000	2.704 <sup>b</sup>	0.056	
	≥ R20 000 – R40 000	2.761 <sup>ab</sup>	0.069	
	≥ R40 000	2.674 <sup>b</sup>	0.072	
Marital status	Married	2.841 <sup>a</sup>	0.053	0.0443*
	Single	2.688 <sup>b</sup>	0.051	

Means with different super scripts in a particular category differ statistically significantly ( $p \leq 0.05$ )

It has previously been found that egoistic values are based on consumers' self-interest (De Groot & Steg, 2008: 333). Furthermore, previous studies have shown that economic factors such as money or household income are related to consumers' egoistical behaviour (Stern *et al.*, 1993: 324). The same seems to be true for this study that when economic factors are considered, egoistic values increase. The lower income group seems have more egoistic values ( $M_{<R5000}=2.92$ ) when compared to the lower middle-income group ( $M_{\geq R5000- <R20000}=2.74$ ) and the high-income group ( $M_{\geq R40000}=2.67$ ). Furthermore, research on the relationship between marital status and egoistic values are limited. However, the statistical significance of the categories of marital status indicated that a possible explanation for this relationship might be that families consider their household priorities more than people living on their own ( $M_{\text{Married}}=2.84$ ;  $M_{\text{Single}}=2.69$ ). However, the difference in means for the two marital status categories was small. This study therefore confirms that egoistic values may be influenced by consumers' marital status, as the relationship was moderate.

### 4.3.2.3 Relationship between demographic characteristics of the sample and altruistic values (Factor 3)

The general p-Value for altruistic values was 0.2040, and indicates that the altruistic values are not strongly related to the grouped demographics (Table 4.12). In spite of the overall p-Value for altruistic values not being statistically significant, the number of children had a statistically significant effect ( $p < 0.05$ ) on the altruistic value orientation (p-Value = 0.0296) (Factor 3). The other demographic categories had no effect on altruistic values. Fisher's pair wise test was performed to see which LS-mean values for the various levels of the effect were significantly different.

TABLE 4.12: THE RELATIONSHIP BETWEEN ALTRUISTIC VALUES AND DEMOGRAPHICS (NUMBER OF CHILDREN)

Demographic group		Altruistic LS-mean	Std Error	p-Value
Number of children	Have children	3.535 <sup>a</sup>	0.033	0.0296*
	No children	3.415 <sup>b</sup>	0.046	

*Means with different super scripts differ statistically significantly ( $p < 0.05$ )*

Literature explains that altruistic values involve caring for fellow humans (Schultz *et al.*, 2005; 459). In particular, it may be argued that parents and care givers are specifically concerned regarding the future well-being of their children and therefore reveal stronger altruistic value orientations ( $M_{\text{Children}}=3.54$ ;  $M_{\text{No children}}=3.41$ ). Therefore it may appear that these respondents consider fellow humans because of their altruistic values.

### 4.3.3 Results based on the ecological worldview of female consumers who engage in clothing disposal behaviour

The second main objective of this study was to describe the ecological worldview of female consumers who engage in clothing disposal behaviour in the South African emerging market context. The NEP Scale was described as an instrument that measures environmental beliefs about the relationship between human beings and the environment (Dunlap *et al.*, 2000). When consumers tend to have high biospheric and altruistic value orientations, they are likely to score high on the NEP Scale. The NEP scale used in this study contained the same 15 items of the revised NEP scale (Table 4.13). Every second item had a negative connotation in terms of the environment and was therefore reverse coded. For this study, the Likert-type scale was however adapted to measure from 1 (strongly disagree) to 4 (strongly agree),

where the original scale measures five levels of agreement. The overall mean for the adapted NEP Scale (2.911) may be an indication that respondents for the most part mildly agreed or mildly disagreed with the items in the NEP Scale.

TABLE 4.13: NEP SCALE ITEM ANALYSIS

NEP Scale items	Mean
1. We are approaching the limit of the number of people the earth can support	3.176
2. Humans have the right to modify the natural environment to suit their needs*	2.719
3. When humans interfere with nature it has disastrous consequences	3.261
4. Human ingenuity will ensure that we do not make the earth uninhabitable*	2.144
5. Humans are severely abusing the earth	3.458
6. The earth has plenty of natural resources if we just learn how to develop them*	1.810
7. Plants and animals have as much right as humans to exist	3.592
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations	2.794
9. Despite our special abilities humans are still subject to the laws of nature	3.461
10. The so-called "ecological crisis" facing humankind has been greatly exaggerated*	2.892
11. The earth is like a spaceship with very limited room and resources	2.837
12. Humans were meant to rule over the rest of nature*	2.359
13. The balance of nature is very delicate and easily upset	3.248
14. Humans will eventually learn enough about how nature works to be able to control it.*	2.484
15. If things continue on their present course, we will soon experience a major ecological catastrophe	3.431
<b>N</b>	
<b>Mean</b>	<b>2.911</b>
<b>Standard error of the mean</b>	<b>0.021</b>
<b>Variance Explained</b>	<b>0.135</b>
<b>Cronbach Alpha</b>	<b>0.694</b>

In general, the respondents strongly or mildly agreed with all the positively stated items (uneven numbers). This is an initial indication that the respondents appear to have stronger environmental beliefs (Dunlap *et al.*, 2000). When considering the negative items (even numbers), respondents gave diverse responses as the level of agreement with the items ranged from 1 to 4. When considering the mean of the even numbered statements the average was around 2, which indicates mild disagreement. This is also an indication that respondents held certain environmental beliefs.

With the original NEP Scale, the sum of the level of agreement with the items in the scale is calculated. If the respondent strongly agreed with all the items, the summed total would be 75. The sum is calculated by considering the 15 items, and each having the possibility of measuring 5 on the Likert-type scale. A highest score indicates that the respondent held positive environmental beliefs (Dunlap *et al.*, 2000). For this study, the summed total would be calculated by considering the 15 items, each with the possibility of measuring 4 on the

Likert type scale. The maximum summed total (SNEP) would therefore be 60. Another method to calculate the environmental beliefs of the respondents is to consider the means (MNEP) for the level of agreement with the items included in the scale. In other words, the mean of the level of agreement with which most respondents agreed. The mean of the NEP Scale will be used for this study's NEP Scale analysis, as it represents a more accurate and simple data set.

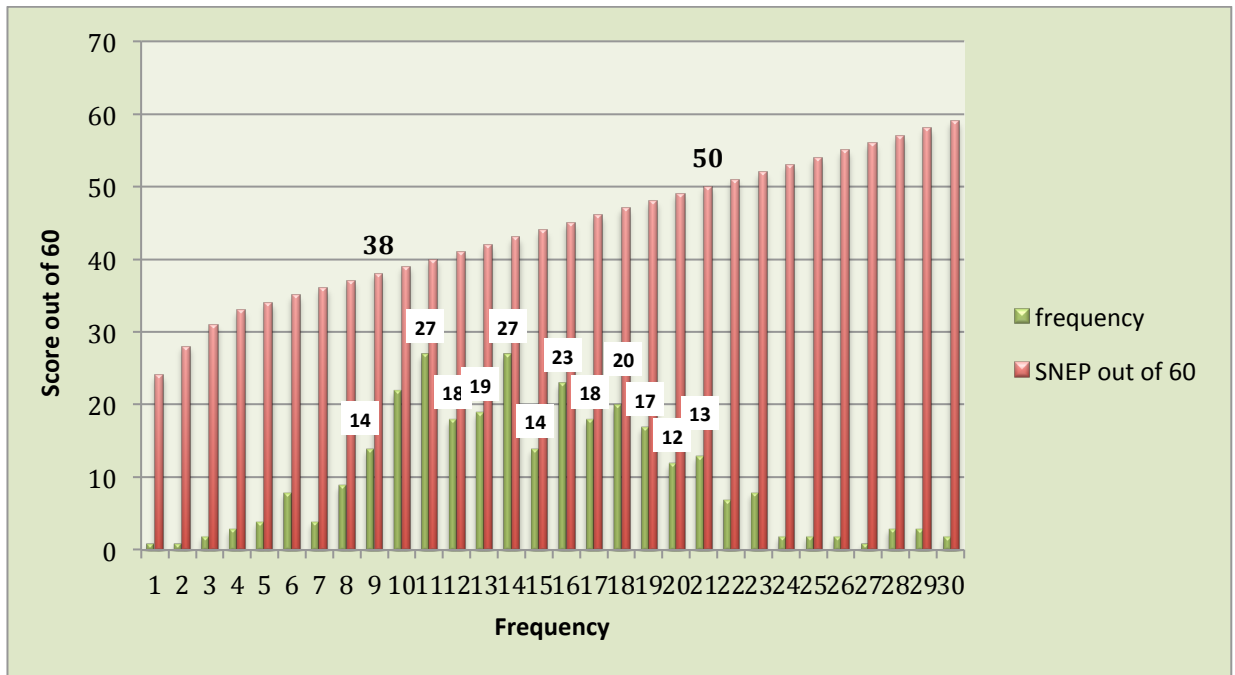


FIGURE 4.2: SUMMED NEP SCORES

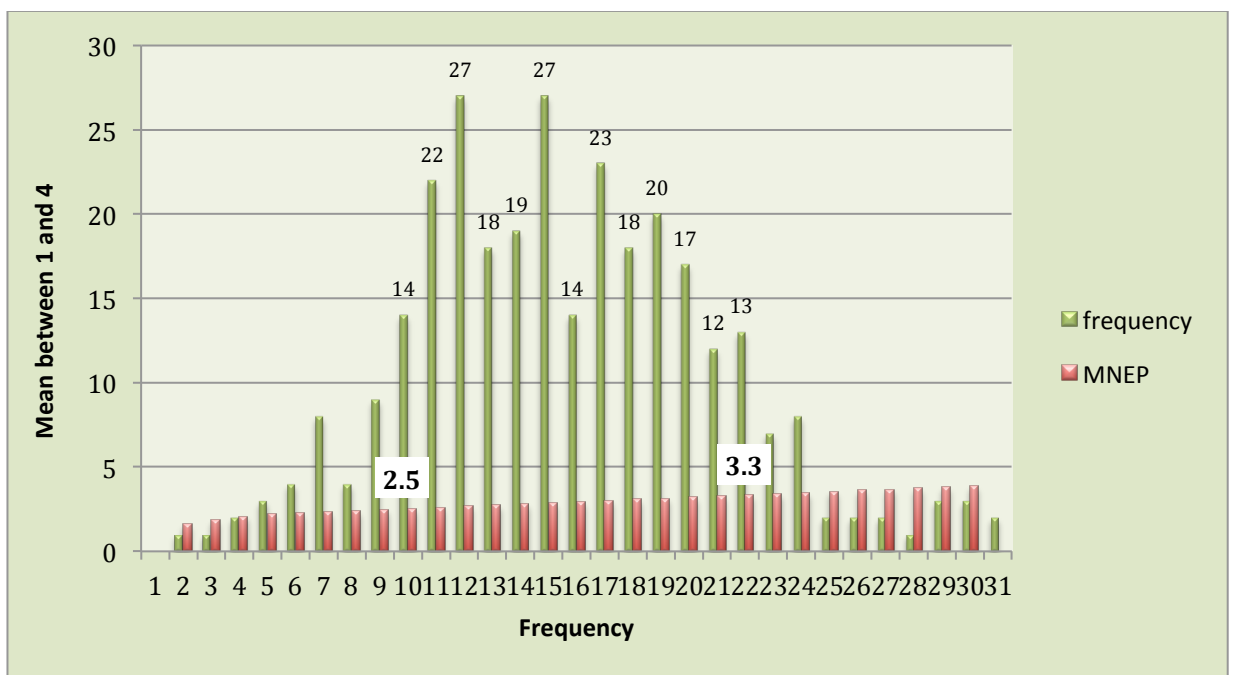


FIGURE 4.3: MEAN NEP SCORES

The majority (80%/n=244) of the respondents obtained a moderate to high summed score [between 38 (moderate) and 50 (relatively high) out of a possible 60], and a moderate mean score of between 2.5 (moderate) and 3.3 (relatively high) ( $M_{\max}=4$ ). This can be an indication that the majority of respondents have positive environmental beliefs and are relatively pro-environmentally motivated (Dunlap *et al.*, 2000). The Cronbach's alpha coefficient of the original NEP Scale by Dunlap *et al.* (2000) was 0.83. The lower Cronbach alpha score for the NEP Scale used in this study ( $\alpha=0.69$ ) could be because the scale was originally developed to measure environmental beliefs among respondents that reside in the United States and Europe. Studies done in other parts of the world (e.g. Latin America) do not indicate the same high internal consistency (Dunlap, 2008: 12).

#### 4.3.4 Relationship between demographic characteristics of the sample and the NEP Scale

To analyse the relationship between demographic characteristics and the NEP Scale, a multi-variate (e.g. a MANOVA) was performed on the mean score NEP Scale (Table 4.14).

TABLE 4.14: MANOVA MODEL FOR DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND THE MEAN OF THE NEP SCALE

Response variable	Demographic group	Levels
Mean of the NEP Scale	Age	5
	Marital Status	2
	Number of Children	2
	Ethnicity	2
	Household Income	4
	Level of Education	2

The demographic groupings used in the model are the same as previously mentioned in 4.2.2. Each of these grouped demographic levels was investigated with regard to the mean of the NEP Scale as response variable (Table 4.15).

TABLE: 4.15 THE RELATIONSHIP BETWEEN OVERALL MEAN SCORE FOR THE NEP SCALE AND DEMOGRAPHIC CHARACTERISTICS

Demographic group	Number of levels per group	F-Value	P-Value
Age	5	2.24	0.0650
Marital status	2	0.40	0.5274
Number of children	2	1.16	0.2834
Ethnicity	2	11.37	0.0009***
Household income	4	1.43	0.2333
Level of education	2	0.61	0.4337
		n	291
		Mean	2.901
		R-Square	0.140
		p-Value	<0.0001***

\*\*\*p<0.001

The overall p-Value of the model was <0.0001, and indicates that the overall mean score for the NEP Scale had a very strong relationship with the grouped demographics (p<0.001). Ethnicity had a statistically highly significant effect on the mean of the NEP Scale (p-Value = 0.0009; p<0.001). The mean of the NEP Scale is also marginally affected by the age group (p-Value = 0.0650). The other demographic categories had no effect. Fisher's pair wise test was implemented to see which LS-mean values for the various levels of the effect were notably different.

TABLE 4.16: THE RELATIONSHIP BETWEEN OVERALL MEAN SCORE FOR THE NEP SCALE AND DEMOGRAPHICS (ETHNIC GROUP AND AGE GROUP)

Demographic group		Mean of the NEP LS-mean	Std Error	p-Value
Ethnic group	Other	2.781 <sup>b</sup>	0.042	0.0009***
	White	2.948 <sup>a</sup>	0.029	
Age group	18 - 24	2.910 <sup>ab</sup>	0.045	0.0650
	25 - 30	2.820 <sup>b</sup>	0.049	
	31 - 40	2.794 <sup>b</sup>	0.052	
	41 - 50	2.816 <sup>b</sup>	0.059	
	51 - 65	2.982 <sup>a</sup>	0.062	

Means with different super scripts in the ethnic group category differ statistically significantly (p<0.001)

Means with different super scripts in the age group category differ, but not statistically significantly.

As seen in Table 4.16, there is a high statistical significance between ethnicity and the mean scores for the NEP Scale, however, although the mean score for white respondents was slightly higher than for black respondents, the difference in the means is small ( $M_{White}=2.95$ ;  $M_{Other}=2.78$ ) and as the sample for this study was not representative of the South African population, more research is needed to determine if there is a difference between different ethnic groups regarding their ecological worldview. Furthermore, ethnicity has previously

been associated with environmental behaviour, (Taylor, 1989; Kellert, 1984; Mitchell, 1980), has particular been related to agreement of the NEP Scale (Ellis & Korzenny, 2012: 11). Previous studies have also related age groups to the NEP Scale (Van Liere & Dunlap, 1980: 192); however, age groups were more directly related to concepts reflective the notion of the NEP Scale such as environmental values.

#### **4.3.5 Results based on awareness of consequence (AC), ascription of responsibility (AR) and personal norm (PN)**

The third main objective for this study was to explore and describe female consumers' beliefs regarding the consequences of clothing disposal behaviour, their ascription of responsibility for such consequences, and the personal norms that guide such behaviour. As a first step toward achieving this objective a factor analysis was performed to determine the components for AC, AR and PN. The initial unrestricted extraction that was performed on the data indicated four factors. However, the four-factor extraction proved problematic, since the fourth factor incorporated two factor loadings, one of which was related to an item that formed part of the original PN scale and the other to the AR scale. Based on existing theory and in particular the AC, AR and PN constructs specified by Steg *et al.* (2005) a three-factor extraction was pursued using an oblique promax rotation method.

Although the resulting three-factor extraction, did not include the exact same arrangement of items as originally formulated for AC, AR and PN in the questionnaire, Factor 1 and 3 proved particularly interesting. Apart from one item that was removed because it had the same loading on two factors, all of the other items included in the questionnaire to measure AC, AR and PN was retained. The items included in Factor 1 addressed an awareness of recycling and waste disposal issues/ consequences in general and were therefore re-labelled as General Beliefs (GB). The items included in Factor 2 were mainly items that related to personal norms as expected and the label Personal Norms (PN) was therefore retained. However, the items included in Factor 3 with factor loadings above 0.50 mainly emphasised a more specific awareness that is associated with the consequences of clothing recycling and waste reduction in particular, and was consequently labelled Awareness Beliefs (AB). It should be noted that items related to AC and AR beliefs have often been used interchangeably to measure the same construct in previous research (e.g. Wall *et al.*, 2007) and only few researchers such as Steg *et al.* (2005) draw a distinction between AC and AR. Many have argued that constructs such as AC, AR and PN are all closely related and because



they are grounded in the same belief and norm structures (Sánchez & Lafuente, 2010: 736; Jackson, 2005: 550), it becomes difficult to establish differentiation among them.

TABLE 4.17: FACTOR ANALYSIS OF GENERAL BELIEFS, PERSONAL NORMS AND AWARENESS BELIEFS

Items	GB	PN	AB
1. In principle, individuals in their own capacity can reduce the amount of waste they create	0.780	0.037	-0.020
2. Everyone should do everything they can to reduce waste problems	0.739	0.083	-0.105
3. Participation in recycling activities makes a contribution toward solving waste problems	0.639	0.087	0.089
4. We cannot only rely on the government to solve waste problems, each individual is equally responsible	0.564	0.033	-0.037
5. I would be a better person if I recycle more often	0.514	-0.199	0.366
6. Overflowing land-fill sites are a problem	0.442	-0.073	0.365
7. Even though my contribution is small, I can make a difference in solving waste problems	0.356	0.248	0.261
8. I feel obligated to consider the environment in my daily behaviour	0.195	0.829	-0.184
9. I feel morally obligated to recycle, regardless of what others say	0.077	0.806	-0.035
10. My involvement in environmentally friendly waste disposal activities is important	0.050	0.700	0.098
11. When I buy new clothing, I feel morally obligated to recycle some old clothes	-0.259	0.589	0.373
12. I feel morally obligated to dispose of old clothing items in an environmentally friendly manner	-0.058	0.504	0.391
13. The reduction of clothing waste helps reduce land –filling	-0.029	-0.027	0.740
14. Clothing waste has a negative impact on the environment	0.017	0.016	0.740
15. Environmental quality will improve if everyone recycles old clothes	0.107	0.190	0.575
16. My efforts at waste reduction are just as important as industries' waste reduction efforts	0.258	0.217	0.370
<b>N</b>	<b>306</b>	<b>306</b>	<b>306</b>
<b>Mean</b>	<b>3.628</b>	<b>3.286</b>	<b>3.297</b>
<b>Standard error of mean</b>	<b>0.023</b>	<b>0.033</b>	<b>0,031</b>
<b>Variance explained</b>	<b>0.168</b>	<b>0.335</b>	<b>0.280</b>
<b>Cronbach Alpha</b>	<b>0.776</b>	<b>0.790</b>	<b>0.711</b>

Although the distribution of components of each of the three factors extracted, differed from the components as anticipated in the questionnaire, they distributed well between the three constructs now labelled GB (Factor 1), PN (Factor 2) and AB (Factor 3). The overall

mean of each factor, suggests that respondents mostly agreed with the items included in PN (M=3.286), GB (M=3.628) and AB (M=3.297) (Table 4.17). The Cronbach's alpha coefficients of the means of the components of each of the factors used in this study GB ( $\alpha = 0.776$ ), PN ( $\alpha = 0.790$ ), and AB ( $\alpha = 0.711$ ) endorse the consistency between them as well as the validity of the adapted scale. The Cronbach's alpha coefficients of the constructs (AC, AR & PN) of the original scale by Steg *et al.* (2005) is awareness of consequences (AC),  $\alpha = 0.75$ , ascription of responsibility (AR),  $\alpha = 0.80$ , and personal norms (PN),  $\alpha = 0.84$ .

For this research it was important to explore respondents' awareness of the consequences of their clothing disposal behaviour and the personal norms that influence their clothing disposal behaviour, as a consumer is likely to score high on the NEP Scale when an awareness of consequences are recognised (Jackson, 2005: 56). Furthermore, according to the VBN Theory, when a person shows awareness of consequences they are likely to engage in pro-environmental behaviour (Steg *et al.*, 2005: 416).

#### 4.3.6 Relationship between demographic characteristics of the sample and beliefs and norms

To analyse the relationship between demographic characteristics and values, a multi-variate ANOVA (e.g. a MANOVA) was performed on the means obtained for the components of each factor (Table 4.18).

TABLE 4.18: MANOVA MODEL FOR DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND BELIEFS AND NORMS

Response variable: value orientations	Demographic groups	Levels
General beliefs (GB)	Age	5
	Marital Status	2
Personal norms (PN)	Number of Children	2
	Ethnicity	2
Awareness beliefs (AB)	Household Income	4
	Level of Education	2

The demographic groupings used in the model are the same as previously mentioned in 4.2.2. Each of these grouped demographic levels was investigated with regard to each factor (GB, PN and AB) as response variable (Table 4.19).

TABLE 4.19: RELATIONSHIP BETWEEN DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND BELIEFS AND NORMS

Demographic group	Number of levels per group	General beliefs (Factor 1)		Personal norms (Factor 2)		Awareness beliefs (Factor 3)	
		F- Value	p-Value	F- Value	p-Value	F- Value	p-Value
Age	5	0.90	0.4637	3.57	0.0073**	1.37	0.2458
Marital status	2	0.00	0.9823	1.70	0.1929	0.05	0.8215
Number of children	2	4.07	0.0447*	1.85	0.1754	0.27	0.6042
Ethnicity	2	1.79	0.1818	2.01	0.1573	3.94	0.0482*
Household income	4	0.26	0.8532	0.35	0.7882	0.20	0.8977
Level of education	2	2.27	0.1000	1.03	0.3100	0.11	0.7394
n		290		290		290	
Mean		3.622		3.280		3.289	
R-Square		0.057		0.105		0.058	
p-Value		0.1212		0.0009***		0.1088	

\*p<0.05 \*\*p<0.01

It is important to mention that the statistical significance between categories of each demographic group is presented in Table 4.20, Table 4.21 and Table 4.22, and is indicated with superscripts. However, the statistical significance is only discussed when relevant.

#### 4.3.6.1 Relationship between demographic characteristics of the sample and general beliefs (Factor 1)

The overall p-Value for general beliefs was 0.1212 (Table 4.19) and indicates that the general beliefs are not strongly related to the grouped demographics. However, the number of children in a household had the most significant relationship with general beliefs (Factor 1) (p-Value = 0.0447; p<0.05). The other demographic categories did not have significant relationships with general beliefs. Fisher's pair wise test was performed to see which LS-mean values for the various levels of the effect were significantly different.

TABLE 4.20: THE RELATIONSHIP BETWEEN GENERAL BELIEFS AND DEMOGRAPHIC CHARACTERISTICS (NUMBER OF CHILDREN)

Demographic group		General beliefs LS-mean	Std Error	p-Value
Number of children	Have children	3.642 <sup>a</sup>	0.035	0.0447*
	No children	3.521 <sup>b</sup>	0.050	

Means with different super scripts differ statistically significantly (p<0.05)

There is a statistically significant difference ( $p < 0.05$ ) between households with children and households with no children ( $M_{\text{Children}}=3.64$ ;  $M_{\text{No children}}=3.52$ ). Previous studies in the field on conservation behaviour have found that there is a significant relationship between household size and beliefs (Nolan, Schultz, Cialdini, Goldstein & Griskevicius, 2008: 916). This study provides confirmation that demographics may be included in environmental behaviour and beliefs research, as respondent's number of children and general beliefs had a statistically significant relationship ( $p < 0.05$ ).

#### 4.3.6.2 Relationship between demographic characteristics of the sample and personal norms (Factor 2)

The overall p-Value for personal norms was 0.0009 and indicates that the personal norms are strongly related to the grouped demographics (Table 4.19). When looking at the demographic categories, the age group category had a significant relationship with personal norms (Factor 2) (p-Value = 0.0073;  $p < 0.01$ ). The other demographic categories had no significant relationship with personal norms. Fisher's pair wise test was performed to see which LS-mean values for the various levels of the effect were significantly different.

TABLE 4.21: THE RELATIONSHIP BETWEEN PERSONAL NORMS AND DEMOGRAPHIC CHARACTERISTICS (AGE GROUP)

Demographic group		Personal norms LS-mean	Std Error	p-Value
Age group	18 - 24	3.142 <sup>a</sup>	0.072	0.0073**
	25 - 30	3.184 <sup>b</sup>	0.079	
	31 - 40	3.149 <sup>b</sup>	0.084	
	41 - 50	3.435 <sup>b</sup>	0.095	
	51 - 65	3.513 <sup>a</sup>	0.100	

*Means with different super scripts differ statistically significantly ( $p \leq 0.01$ )*

There is a statistically significant difference between the youngest age group (18 - 24 years) and the age groups 25 - 30, 31 - 40 and 41 - 50 years. In the same way the oldest age group (51 - 65 years) also differed statistically significantly from these age groups. Although the means differ ( $M_{18-24}=3.14$ ;  $M_{51-65}=3.51$ ), the youngest and oldest age groups do not differ statistically. Personal norms have previously been related to demographic characteristics in a study related to the environment, and with age as demographic characteristic in particular (Nolan *et al.*, 2008: 916). This study confirms a relationship between respondents' age groups and personal norms.

#### 4.3.6.3 Relationship between demographic characteristics of the sample and awareness beliefs (Factor 3)

The overall p-Value for awareness beliefs was 0.1088 (Table 4.19), and indicates that the awareness beliefs are not strongly related to the grouped demographics. However, when looking at the demographic categories ethnic group category had a significant relationship with awareness beliefs (Factor 3) (p-Value = 0.0482;  $p < 0.05$ ). The other demographic categories had no significant relationship with awareness beliefs. Fisher's pair wise test was performed to see which LS-mean values for the various levels of the effect were significantly different.

TABLE 4.22: THE RELATIONSHIP BETWEEN AWARENESS BELIEFS AND DEMOGRAPHIC CHARACTERISTICS (ETHNIC GROUP)

Demographic group		Recycling LS-mean	Std Error	p-Value
Ethnic group	Other	3.208 <sup>b</sup>	0.066	0.0482*
	White	3.362 <sup>a</sup>	0.045	

*Means with different super scripts differ statistically significantly ( $p \leq 0.05$ )*

Although the means of the two ethnic categories are statistically different, they differ only slightly ( $M_{\text{White}}=3.36$ ;  $M_{\text{Other}}=3.21$ ). Previous studies focusing on environmental behaviour have indicated a relationship between ethnicity and beliefs (Nolan *et al.*, 2008: 916). This study provides evidence that respondents' ethnic group is statistically significantly related to environmental beliefs.

#### 4.3.7 Results based on clothing disposal behaviour

Shim (1995) developed a scale to test the "Constructs of Clothing Disposal Patterns and General Environmentalism". The scale presented by Shim (1995) contains four main disposal methods: reselling, donation, re-using and discarding, each subdivided into "environmentally motivated" or "economically motivated" behaviour, containing 20 items in total. Additionally, the scale also included a "recycling behaviour" section. The items of the scale presented by Shim (1995) were used as a guide to categorise items for disposal methods, and 23 items were included in the scale developed for this study. These items were categorised into five broad categories namely reselling (7 items), re-using (4 items), donation (4 items), recycling (4 items) and discarding (4 items).

As one of the main objectives of this study was to determine consumers' clothing disposal methods, it was important to perform a factor analysis on the components for each of the five disposal methods. Factor extractions indicated five factors. The components of each disposal method (reselling, re-using, donation, recycling and discarding) were obtained by factor analysis and the factor components, for this study, were placed according to their factor loadings. The Cronbach's alpha coefficients of the means of the components for the five factors used in this study (reselling  $\alpha = 0.863$ , re-using  $\alpha = 0.742$ , donate  $\alpha = 0.747$ , recycling  $\alpha = 0.693$  and discarding  $\alpha = 0.696$ ) support the consistency between them as well as the validity of the scale developed for this study. Shim's (1995) scale has internal consistencies of  $\alpha = 0.74$  to  $\alpha = 0.89$ .

(See page 73 for the factor analysis, Table 4.23)

The overall means of each factor indicated that respondents are more likely to donate ( $M = 3.608$ ), re-use ( $M = 2.612$ ) or recycle ( $M = 2.922$ ) their unwanted clothing, as the means for these factors were higher than the means for reselling ( $M = 1.741$ ) and discarding ( $M = 1.520$ ). This is an indication that respondents are more likely to consider clothing disposal methods that benefits the environment. It has previously been found that consumers who donate show altruistic values (De Groot & Steg, 2008: 333), and consumers who re-use are seen as eco-active or pro-environmental (Koch & Domina, 1997: 7-8). It has also been found that recycling as a disposal method contributes to pro-environmental behaviour through the reduction of waste (Leigh & Realff, 2003: 148). As the respondents for this study showed stronger biospheric and altruistic values than egoistic values, it may be assumed that the respondents favour pro-environmental clothing disposal methods such as donation, re-using and recycling as their value orientations are focussed on benefiting the environment and humans through pro-environmental behaviour.

TABLE 4.23: FACTOR ANALYSIS OF CLOTHING DISPOSAL METHODS

Items	Reselling (Factor 1)	Recycling (Factor 2)	Donation (Factor 3)	Discarding (Factor 4)	Re-using (Factor 5)
I sell my clothing for money	0.828	-0.030	-0.092	-0.188	-0.083
I resell my unwanted clothing that is in good condition to benefit others	0.788	0.147	0.030	-0.008	-0.120
I sell most of my unwanted clothes at second-hand stores for economic reasons	0.779	-0.085	-0.112	0.057	-0.056
I trade my old clothing for other necessities	0.738	-0.119	0.123	0.050	0.074
I sell my old clothing for environmental reasons	0.685	0.089	0.064	0.173	0.053
I sell my unwanted clothes rather than throwing them away because I'm concerned about waste	0.678	0.285	-0.053	-0.049	-0.125
I trade clothing at second-hand stores to save money	0.578	-0.051	0.002	0.296	0.129
I support recycling efforts that re-use old clothing items to develop new eco-friendly products	0.098	0.815	-0.100	-0.028	-0.027
If clothing recycle bins are available, I make use of them to dispose of old garments in an eco-friendly	-0.165	0.648	0.074	0.270	0.023
I'm currently involved in recycling efforts (such as recycling of glass, paper, aluminium etc.) to do	0.032	0.610	0.146	-0.015	0.051
I recycle old clothing items to contribute to the conservation of the environment	0.196	0.493	-0.010	-0.133	0.303
It is very important to me to donate my clothes to charity for the needy	0.033	-0.121	0.809	-0.087	0.057
I give away my clothing to help others	0.023	-0.064	0.788	-0.178	0.004
Donating to charity is a good way of recycling old clothes	-0.027	0.228	0.664	0.064	-0.093
I donate my clothes to charity to do my part in solving the environmental problem	-0.074	0.399	0.580	0.074	-0.109
I throw old clothing items in the dustbin	-0.060	0.057	-0.082	0.776	-0.058
I throw away unwanted garments	-0.012	0.037	-0.122	0.764	-0.045
I throw old clothing in bags for waste collection because that is the only way I feel comfortable	0.087	0.138	0.023	0.679	-0.012
I burn unwanted clothing	0.350	-0.315	0.089	0.458	0.195
I re-use clothing for other purposes to get the most out of them	-0.059	0.071	-0.141	-0.094	0.851
I use worn out clothing for rags to save money	-0.140	-0.037	0.049	0.105	0.808
I re-use clothing because it can significantly benefit the environment	0.067	0.438	-0.021	-0.121	0.495
I try to use old clothing for craft purposes because throwing away significantly contributes to the	0.080	0.397	0.088	0.045	0.475
<b>N</b>	<b>306</b>	<b>306</b>	<b>306</b>	<b>306</b>	<b>306</b>
<b>Mean</b>	<b>1.741</b>	<b>2.922</b>	<b>3.608</b>	<b>1.520</b>	<b>2.612</b>
<b>Standard error of mean</b>	<b>0.041</b>	<b>0.043</b>	<b>0.030</b>	<b>0.035</b>	<b>0.046</b>
<b>Variance explained</b>	<b>0.503</b>	<b>0.574</b>	<b>0.270</b>	<b>0.377</b>	<b>0.643</b>
<b>Cronbach Alpha</b>	<b>0.863</b>	<b>0.693</b>	<b>0.747</b>	<b>0.696</b>	<b>0.742</b>

#### 4.3.8 Relationship between demographic characteristics of the sample and the disposal methods

Although this study focuses on the role of values, beliefs and norms in consumers' clothing disposal behaviour, it is appropriate to analyse the relationship between demographic characteristics of the sample and the disposal methods to ensure accurate and valid results. To analyse the relationship a MANOVA was performed on the means obtained for the components of each of the five factors.

TABLE 4.24: MANOVA MODEL FOR DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND CLOTHING DISPOSAL METHODS

Response variable: clothing disposal methods	Demographic groups	Number of levels per group
Reselling Recycling Donation Discarding Re-using	Age	5
	Marital Status	2
	Number of Children	2
	Ethnicity	2
	Household Income	4
	Level of Education	2

The demographic groupings used in the model are the same as previously mentioned in 4.2.2. Each of these grouped demographic levels was investigated with regard to the clothing disposal methods as response variables (Table 4.25).

TABLE 4.25: RELATIONSHIP BETWEEN DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE AND CLOTHING DISPOSAL METHODS

Demographic groups	Reselling (Factor 1)		Recycling (Factor 2)		Donation (Factor 3)		Discarding (Factor 4)		Re-using (Factor 5)	
	F-value	p-Value	F-Value	p-Value	F-Value	p-Value	F-Value	p-Value	F-Value	p-Value
Age	1.54	0.1902	3.77	** 0.0053	0.78	0.5382	4.04	** 0.0034	1.66	0.1583
Marital status	0.57	0.4523	1.79	0.1826	0.21	0.6468	1.58	0.2096	0.56	0.4566
Number of children	1.70	0.1932	2.58	0.1093	10.41	** 0.0014	0.03	0.8542	0.05	0.8216
Ethnic	1.58	0.2098	5.65	* 0.0181	8.48	** 0.0039	12.77	*** 0.0004	0.00	0.9688
Household income	1.03	0.3806	0.05	0.9872	0.57	0.6345	1.13	0.3382	0.78	0.5073
Level of education	3.35	0.0684	0.06	0.8046	0.32	0.5714	5.08	* 0.0250	0.04	0.8440
N	291		291		291		291		291	
Mean	1.735		2.904		3.612		1.521		2.598	
R-Square	0.081		0.101		0.089		0.169		0.038	
p-Value	0.0134*		0.0015**		0.0056**		<0.0001***		0.4378	

\*p<0.05. \*\*p<0.01 \*\*\*p<0.001



It is important to mention that the statistical significance between categories of each demographic group is presented in Table 4.26, Table 4.27, Table 4.28 and Table 4.29, and is indicated with superscripts. However, the statistical significance is only discussed when relevant.

#### **4.3.8.1 Relationship between demographic characteristics of the sample and reselling (Factor 1)**

The overall p-Value for reselling was 0.0134, and indicates that reselling as clothing disposal method is statistically significantly related to the grouped demographics ( $p < 0.05$ ). However, there was no particular demographic characteristic that had a significant relationship with reselling. The level of education had the strongest relationship with the disposal method (Factor 1) (p-Value = 0.0684); however, the relationship is not statistically significant. According to literature, reselling as disposal method is strongly related with monetary benefits associated with disposal (Hawley, 2009: 194; Shim 1995: 46). The results indicated that the respondents' level of education correlated much stronger with reselling than respondents' household income (see Table 4.25). Existing literature on reselling does not confirm a correlation with respondents' level of education, but previous studies do mention that recyclers and non-recyclers have different levels of knowledge about the environment, which may be influenced by their level of education (Vining & Ebreo, 1990: 56). As knowledge derives from education, respondents might not have awareness regarding other disposal methods such as recycling. Although reselling as disposal method is seen a pro-environmental disposal method, the means for the items included in this model were fairly low. This may be an indication that respondents do not relate with the items included for reselling as disposal method. As a result, the Fisher's pair wise test was not implemented on the relationship between demographic characteristic of the sample and reselling as clothing disposal method.

#### **4.3.8.2 Relationship between demographic characteristics of the sample and recycling (Factor 2)**

The general p-Value for recycling was 0.0015 (Table 4.25), and indicates that the recycling as disposal method is strongly related to the grouped demographics ( $p < 0.01$ ). The respondent's age group (p-Value = 0.0053;  $p < 0.01$ ) had a statistically significant effect on recycling as disposal method. Recycling (Factor 2) was also statistically significantly affected by ethnicity (p-Value = 0.0181). The other demographic categories had no effect. Fisher's pair wise test

was performed to see which LS-mean values for the various levels of the effect were significantly different.

TABLE 4.26: THE RELATIONSHIP BETWEEN RECYCLING AS CLOTHING DISPOSAL METHOD AND DEMOGRAPHIC CHARACTERISTICS (AGE GROUP AND ETHNIC GROUP)

Demographic group		Recycling LS-mean	Std Error	p-Value
Age group	18 - 24	2.665 <sup>c</sup>	0.095	0.0053**
	25 - 30	2.857 <sup>bc</sup>	0.104	
	31 - 40	2.718 <sup>c</sup>	0.111	
	41 - 50	3.040 <sup>ab</sup>	0.124	
	51 - 65	3.232 <sup>a</sup>	0.131	
Ethnic group	Other	2.778 <sup>b</sup>	0.089	0.0181*
	White	3.027 <sup>a</sup>	0.061	

*Means of the two ethnic groupings with different super scripts differ statistically significantly ( $p \leq 0.05$ )*

*Means of age groups with different super scripts differ statistically significantly ( $p \leq 0.01$ )*

There was a statistical highly significant difference between the youngest (18 - 24 years;  $M=2.67$ ) and the oldest (51 - 65 years;  $M=3.23$ ) age groups. The difference between the 51 - 65 age group and the 31 - 40 age group ( $M=2.72$ ) was also highly significant. There was also a highly significant difference between the 31 - 40 age group and the 41 - 50 age group ( $M=3.04$ ). The difference between the 18 - 24 age group and the 41 - 50 age group was also highly significant ( $p < 0.01$ ; Table 4.26). The mean for white respondents ( $M=3.03$ ) was statistically significantly higher than the mean for other ethnic groups ( $p < 0.05$ ;  $M=2.78$ ; Table 4.26). This could indicate that the white respondents are more inclined to recycle than the other ethnic groups.

As stated before, both age group and ethnicity may be associated with pro-environmental behaviour (Birtwistle & Moore, 2007: 212; Domina & Koch, 2002: 219; Taylor, 1989). Furthermore, recycling as disposal method contributes to waste management (Leigh & Realff, 2003: 148), and is therefore closely associated with pro-environmental behaviour (Friends of the Earth, 2008: 2-3; Leigh & Realff, 2003: 149; Nordlund & Garvill, 2002: 741; Shim, 1995: 38). Shim (1995: 45) found that although respondent's age group did influence clothing disposal behaviour, it did not directly influence recycling behaviour, however, for this study respondent's age group did have a fairly strong relationship with recycling behaviour in particular. Furthermore, Shim (1995: 47) found that ethnicity did not influence clothing disposal behaviour. On the other hand, this study found that there is a fairly strong relationship between respondent's ethnicity and recycling as clothing disposal behaviour.

However, this was partially confirmed by the results of this study, as further studies are needed in a South African context, since less than a third of the respondents were black, coloured or Asian.

#### 4.3.8.3 Relationship between demographic characteristics of the sample and donation (Factor 3)

The overall p-Value for donation was 0.0056 (Table 4.25), and indicates that this disposal method is strongly related to the grouped demographics ( $p < 0.01$ ). It was found that the number of children (p-Value = 0.0014;  $p < 0.01$ ) and ethnicity (p-Value = 0.0039;  $p < 0.01$ ) had the most meaningful effect on donation (Factor 3). The other demographic categories had no effect. Fisher's pair wise test was performed to see which LS-mean values for the various levels of the effect were meaningfully different.

TABLE 4.27: THE RELATIONSHIP BETWEEN DONATION AS CLOTHING DISPOSAL METHOD AND DEMOGRAPHIC CHARACTERISTICS (NUMBER OF CHILDREN AND ETHNIC GROUP)

Demographic group		Donation LS-mean	Std Error	p-Value
Number of children	Have children	3.670 <sup>a</sup>	0.043	0.0014**
	No Children	3.432 <sup>b</sup>	0.061	
Ethnic group	Other	3.446 <sup>b</sup>	0.061	0.0039**
	White	3.656 <sup>a</sup>	0.042	

*Means with different super scripts differ statistically significantly ( $p \leq 0.01$ )*

There was a statistically significant difference between the households with children and those with no children in terms of donation as clothing disposal method ( $M_{\text{Children}}=3.67$ ;  $M_{\text{No children}}=3.43$ ). The difference between white and other ethnic groups was also statistically significant ( $M_{\text{White}}=3.66$ ;  $M_{\text{Other}}=3.45$ )(Table 4.27).

As previously mentioned, respondents with children show strong altruistic values as they are likely to care for others (Schultz *et al.*, 2005: 459), and might therefore be more inclined to donate clothes to charity. Furthermore, respondents who show altruistic values are likely to be concerned with underprivileged people, and subsequently are willing to donate (De Groot & Steg, 2008: 333). Ethnicity has previously been associated with environmental behaviour (Taylor, 1989; Kellert, 1984; Mitchell, 1980); therefore, it is understandable that

ethnicity had a strong relationship with donation as this disposal method is seen as pro-environmental behaviour. However, the relationship between ethnicity and donation as clothing disposal behaviour could only be partially confirmed by the results of this study, since less than a third of the respondents were black, coloured or Asian. Further studies regarding this relationship are needed in a South African context. Finally, Shim (1995: 46) found that respondents' age group had a strong relationship with donation as clothing disposal method. This study did not find a relationship between age group and donation.

#### 4.3.8.4 Relationship between demographic characteristics of the sample and discarding (Factor 4)

The general p-Value for discarding was  $<0.0001$  (Table 4.25). This is an indication that discarding as disposal method has a very strong relationship with the grouped demographics ( $p < 0.001$ ). The relationship between ethnicity and discarding as clothing disposal method (Factor 4) was statistically highly significant ( $p$ -Value = 0.0004;  $p < 0.001$ ). The relationship between the respondents' age group ( $p$ -Value = 0.0034;  $p < 0.01$ ) and level of education were both statistically significant ( $p$ -Value = 0.0250;  $p < 0.05$ ). The other demographic categories had no effect. Fisher's pair wise test was implemented to see which LS-mean values for the various levels of the effect were significantly different.

TABLE 4.28: THE RELATIONSHIP BETWEEN DISCARDING AS CLOTHING DISPOSAL METHOD AND DEMOGRAPHIC CHARACTERISTICS (ETHNIC GROUP, AGE GROUP AND LEVEL OF EDUCATION)

Demographic group		Discarding LS-mean	Std Error	p-Value
Ethnic group	Other	1.771 <sup>a</sup>	0.070	0.0004***
	White	1.477 <sup>b</sup>	0.048	
Age group	18 - 24	1.438 <sup>b</sup>	0.075	0.0034**
	25 - 30	1.856 <sup>a</sup>	0.082	
	31 - 40	1.590 <sup>b</sup>	0.087	
	41 - 50	1.590 <sup>b</sup>	0.098	
	51 - 65	1.645 <sup>ab</sup>	0.103	
Level of education	> Grade 12	1.526 <sup>b</sup>	0.049	0.0250*
	≤ Grade 12	1.722 <sup>a</sup>	0.071	

*Means of the two ethnic groupings with different super scripts differ statistically significantly ( $p \leq 0.001$ )*

*Means of age groups with different super scripts differ statistically significantly ( $p \leq 0.01$ )*

*Means of age groups with different super scripts differ statistically significantly ( $p \leq 0.05$ )*

There was a highly significant difference between discarding behaviour of the different ethnic groups ( $M_{\text{White}}=1.48$ ;  $M_{\text{Other}}=1.77$ ). There was also a significant difference between the

18 - 24 age group (M=1.44) and the 25 - 30 age group (M=1.86), and a significant difference between the 25 – 30 age group, and the 31 - 40 (M=1.59) and the 41 - 50 age groups (M=1.59); there was, however no significant difference between the 31 - 40 and the 41 to 50 age groups. There was also a statistically significant difference between the two categories for level of education and their discarding behaviour ( $M_{>Grade\ 12}=1.53$ ;  $M_{\leq Grade\ 12}=1.72$ )(Table 4.28).

In summary, the relationship between the demographic characteristics of the sample and discarding as disposal method indicated that the respondent’s ethnicity, age group and level of education had the most meaningful and statistically significant effects on the disposal method. The relationship between discarding and ethnicity was statistically highly significant, but once again not conclusive because of the skewed composition of the sample. All of these demographic characteristics have previously been associated with pro-environmental behaviour (Birtwistle & Moore, 2007: 212; Domina & Koch, 2002: 219; Vining & Ebreo, 1990: 56; Taylor, 1989; Kellert, 1984; Mitchell, 1980). Shim (1995: 46) found that gender had the strongest relationship with discarding behaviour. This study did not include a gender category for demographic characteristics of the sample.

#### 4.3.8.5 Relationship between demographic characteristics of the sample and re-using (Factor 5)

The overall p-Value for re-using was 0.4378 (Table 4.25), and indicates that re-using a disposal method is not strongly related to the grouped demographics. It was found that none of the demographic categories had a meaningful effect on re-use (Factor 5) as clothing disposal method. The demographic characteristic with the strongest relationship with discarding as clothing disposal method was age group (p-Value = 0.1583). This relationship was not statistically significant. Fisher’s pair wise test was performed to see which LS-mean values for the various levels of the effect were significantly different.

TABLE 4.29: THE RELATIONSHIP BETWEEN RE-USING AS CLOTHING DISPOSAL METHOD AND DEMOGRAPHIC CHARACTERISTICS (AGE GROUP)

Demographic group		Re-using LS-mean	Std Error	p-Value
Age group	18 - 24	2.590 <sup>ab</sup>	0.103	0.1583
	25 - 30	2.656 <sup>ab</sup>	0.113	
	31 - 40	2.357 <sup>b</sup>	0.120	
	41 - 50	2.748 <sup>a</sup>	0.135	
	51 - 65	2.670 <sup>ab</sup>	0.143	

*Means with different super scripts in the age group category differ, but not statistically significantly.*

There was no statistically significant difference in reselling behaviour of the different age groups, but there was a difference between the means of the 31 – 40 (M=2.36) and the 41 to 50 age groups (M= 2.75) as indicated in Table 4.29.

The relationship between the demographic characteristics of the sample and re-using as disposal method was fairly weak. Respondents' age groups had the most meaningful effect on the disposal method, but the relationship was also weak. This may be an indication that re-using as disposal method is still a relatively innovative concept in South Africa, and consumers are still unsure about this type of clothing disposal method. Shim (1995: 46) however, also found a relationship between age group and re-using as disposal method.

This section was based on the scale presented by Shim (1995). It is important to consider that the disposal methods included in Shim's (1995) scale were either "environmentally motivated" or "economically motivated". However, results from this study were compared to the general disposal methods included in Shim's scale. Results for this study indicated that respondents' age groups, number of children, ethnicity and level of education had the most meaningful relationships with the disposal methods. There was no significant relationship between respondents' marital status and household income, and the clothing disposal methods.

#### **4.3.9. Correlation between value orientations and clothing disposal methods, the mean of the NEP Scale and clothing disposal methods, beliefs and norms and clothing disposal methods.**

This section captures the essence of this study, as the principal purpose of this research was to determine the role of values, beliefs and norms in female consumers' clothing disposal behaviour. A Pearson Correlation Coefficient was used to determine the correlation means of the components of the three value orientations and clothing disposal methods, the respondent's ecological worldview (NEP Scale) and disposal methods, and the means of the components of the factors representing beliefs and norms and clothing disposal methods, The variables included in the Pearson Correlation Coefficient model were Reselling, Recycling, Donation, Discarding and Re-using, which were correlated with:

- a) variables biospheric values, egoistic values and altruistic values
- b) variables MNEP (mean of the NEP Scale)

- c) variables general beliefs (GB), personal norms (PN) and awareness beliefs (AB).  
 (Although the items of Section 4 were redistributed when a factor analysis was done, the items still represented beliefs and norms and were labelled accordingly)

A strong correlation between variables will indicate that a specific variable correlates positively with the disposal method. Table 4.30 primarily indicates the descriptive results of this section, while Table 4.31 indicates the correlations.

TABLE 4.30: MEAN AND STANDARD ERROR OF VALUE ORIENTATIONS, THE NEP SCALE, BELIEFS AND NORMS, AND CLOTHING DISPOSAL METHODS (N=306)

Variable	Mean	Standard Error
Biosphere	3.726	0.021
Egoistic	2.716	0.028
Altruistic	3.504	0.022
<b>NEP Scale</b>	2.911	0.021
<b>GB</b>	3.622	0.023
<b>PN</b>	3.280	0.033
<b>AB</b>	3.289	0.031
<b>Reselling</b>	1.741	0.041
<b>Recycling</b>	2.922	0.043
<b>Donation</b>	3.608	0.030
<b>Discarding</b>	1.520	0.035
<b>Re-using</b>	2.612	0.046

The means of the components of the three value factors, the mean of the NEP Scale, and the means of the three belief- and norm factors were used to determine their correlation with the different clothing disposal methods (Table 4.31).

TABLE 4.31: CORRELATION BETWEEN VALUE ORIENTATIONS AND CLOTHING DISPOSAL METHODS; MEAN OF THE NEP SCALE AND CLOTHING DISPOSAL METHODS; BELIEFS AND NORMS AND CLOTHING DISPOSAL METHODS (N=306)

		Reselling	Recycling	Donation	Discarding	Re-using
<b>Biospheric</b>	r	-0.15	0.24	0.35	-0.23	0.16
	p	0.0071**	< 0.0001***	< 0.0001***	0.0001***	0.0044**
<b>Egoistic</b>	r	0.34	-0.04	-0.06	0.27	0.044
	p	< 0.0001***	0.5333	0.3148	< 0.0001***	0.4484
<b>Altruistic</b>	r	-0.90	0.22	0.38	-0.15	0.21
	p	0.1156	0.0001***	< 0.0001***	0.0085**	0.0002***
<b>Mean of NEP scale</b>	r	-0.22	0.22	0.14	-0.26	0.14
	p	< 0.0001***	0.0001***	0.0131*	< 0.0001***	0.0115*
<b>GB</b>	r	-0.08	0.41	0.46	-0.20	0.30
	p	0.1915	< 0.0001***	< 0.0001***	0.0006***	< 0.0001***
<b>PN</b>	r	0.09	0.58	0.37	-0.13	0.39
	p	0.11325	< 0.0001***	< 0.0001***	0.0250*	< 0.0001***
<b>AB</b>	r	0.02	0.43	0.31	-0.07	0.32
	p	0.7313	< 0.0001*	< 0.0001***	0.2360	< 0.0001***

\*p<0.05. \*\*p<0.01 \*\*\*p<0.001

r = strength of correlation (negligible, r=0.01-0.19; weak, r= +/- 0.20-0.29; moderate, r= +/- 0.30-0.39; strong, r= +/- 0.40 -0.69; very strong, r= +/- 0.70-1.0)

The correlation coefficient (r in Table 4.31) indicates how strongly the two variables are associated and how accurately one variable can be predicted from another. It can range from -1.00 to 0.00 to 1.00 (Field & Miles, 2010: 148). The p-value is an indication of the probability and statistical significance of a correlation (StatSoft, 2013). Biospheric values had a statistically significant correlation (p<0.01) with re-using as disposal method; however, the correlation was negligible (r=0.16). Biospheric values also had statistically highly significant correlations with recycling and donation (p<0.001), but the correlations were weak to moderate (r=0.24; r=0.35). Furthermore, biospheric values had a statistically significant correlation with reselling (p<0.01) and a statistically highly significant correlation with discarding as clothing disposal method (p<0.001); however, the correlations were once again negligible to weak negative correlations (reselling, r=-0.15; discarding, r=-0.23). The correlation between the means of the components of egoistic value orientations and reselling and discarding were statistically highly significant correlations (p<0.001), but the strengths of the correlations were only weak (discarding: r=0.27) to moderate (reselling, r=0.34). The means of the components of altruistic value orientations had statistically highly significant correlations with recycling, re-using and donation (p<0.001); however the correlations between altruistic values and recycling and re-using were weak (recycling, r=0.22; re-using, r=0.21). There was a moderate positive correlation between altruistic values and donation (r=0.38). The correlation between altruistic values and discarding as



clothing disposal method was negligible although statistically significant ( $p < 0.01$ ). There was a very strong negative correlation between altruistic values and reselling, but this correlation was not statistically significant.

Although the correlation between the mean scores of the NEP Scale components and the clothing disposal methods were all statistically significant and highly significant correlations, there was only a weak positive correlation between the mean scores of the NEP scale and recycling as clothing disposal method ( $r = 0.22$ ), and a weak negative correlation with both reselling and discarding (respectively  $r = -0.22$  and  $r = -0.26$ ). The mean of the NEP Scale had a statistically significant ( $p < 0.01$ ), but have a negligible correlation with re-using and donation ( $r = 0.14$  in both cases).

The correlation between the means of the components of general beliefs (GB) and the disposal methods also indicated statistically highly significant, strong positive correlations with recycling ( $r = 0.41$ ) and donation ( $r = 0.46$ ). There was a moderate positive ( $r = 0.30$ ), statistically highly significant ( $p < 0.001$ ) correlation with re-using as clothing disposal method and general beliefs. Although statistically highly significant the correlation between general beliefs and discarding as clothing disposal method was weak. When considering the correlations between the means of the components of personal norms (PN) and the clothing disposal methods, it is clear that the norms had a highly significant ( $p < 0.001$ ), strong positive correlation with recycling ( $r = 0.58$ ) and a moderate positive correlation with donation ( $r = 0.37$ ) and re-using ( $r = 0.39$ ). The correlation between personal norms and discarding was negligible. Finally, the means of the components of awareness beliefs (AB) followed the same pattern with a statistically highly significant ( $p < 0.001$ ), strong positive correlation with recycling ( $r = 0.43$ ), and statistically highly significant ( $p < 0.001$ ), moderate positive correlations with donation ( $r = 0.31$ ) and re-using ( $r = 0.32$ ) as clothing disposal methods.

#### 4.4 CONCLUSION

This chapter presented the results and discussions for this study. The results were presented according to the objectives of this study that also followed the outline of the questionnaire and conceptual framework. Results indicated that it is important to explore theories and scales that were originally developed in urbanised countries abroad, in the South African context, as the results may vary when the models are tested in an emerging market context.

## Chapter 5

---

# Conclusions

---

*Findings are observed and summarised in accordance with the problem statement and objectives of the study. This chapter also presents the theoretical contributions made by this study. The practical implications, limitations and future research recommendations for this study are also presented.*

### 5.1 INTRODUCTION

This study was focused on exploring and describing female consumers' values, beliefs and norms in relation to their clothing disposal behaviour with the intention of introducing empirical evidence that may contribute to addressing textile waste issues in the South African context. The study was conducted in the Tshwane region and a sample of 306 female consumers was included. A quantitative research approach that included a cross-sectional survey design was used for descriptive and exploratory purposes. Female respondents were chosen, as females tend to be more environmentally concerned than men. Descriptive and inferential statistics were used to analyse the data according to the objectives of the study.

The objectives and conceptual framework for this study were based on the VBN Theory (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994). The framework indicates how values, beliefs and norms are interrelated, and may ultimately influence the clothing disposal method chosen by a consumer. In accordance with the VBN Theory, several studies have substantiated the influence of consumers' *value orientations, beliefs and personal norms* as the underlying motivation to act in a pro-environmental manner (Sánchez & Lafuente, 2010: 736; López & Cuervo-Arango, 2008: 625, 628; De Groot & Steg, 2007: 319), and are associated with various types of environmentally responsible behaviours (López & Cuervo-Arango, 2008: 628).

In terms of waste disposal, literature distinguishes five prominent disposal methods that consumers may consider, namely, reselling, recycling, donation, re-using, and discarding (Shim, 1995; Koch & Domina, 1997). Four of these disposal methods (reselling, recycling,

donation and re-using) are considered pro-environmental disposal methods, whereas discarding may be seen as the less pro-environmental option. Since the latter involves less effort, it is often the most preferred option (Joung & Park-Poaps, 2013: 109). As pro-environmental disposal methods are a necessary solution for various environmental problems associated with waste disposal (Birtwistle & Moore, 2007: 212; Leigh & Realff, 2003: 149; Nordlund & Garvill, 2002: 741), this study was specifically focused on exploring the relevance of these methods for the disposal of clothing items among a sample of female consumers in the South African context.

The following paragraphs present the conclusions made based on the results of this study. The conclusions are presented according to the research objectives and summarises the results based on value orientations, consumers' underlying ecological worldview, consumers' awareness of consequences and ascription of responsibility, and consumers' personal norms. Conclusions are made based on the relationship between the demographic characteristics of the sample and each of the above mentioned aspects, as well as the correlations between each of the aspects and clothing disposal behaviour.

## **5.2 CONCLUSIONS**

### **5.2.1 Influence of values on consumers' clothing disposal behaviour**

The first objective was aimed at determining the influence of values on consumers' clothing disposal behaviour. The items of this section of the questionnaire were distributed between three value directions known as biospheric-, egoistic, and altruistic value orientations representative of the value orientations previously identified in the Value Orientations Scale by De Groot and Steg (2008). These three orientations represented three sub-objectives for this section. Initial findings indicated that the selected sample of South African female consumers showed prominent value orientations, as respondents were able to differentiate between the three value orientations. Findings also indicated that the majority of the sample of female respondents predominantly showed biospheric- and altruistic value orientations. This is an indication that the majority of the respondents appear to have a sense of concern towards to the environment and fellow humans.

Further findings indicated that the demographic characteristics of the sample had a relationship with the value orientations. Results showed that respondents' ethnicity had a statistically strong relationship with biospheric values, and respondents' age groups had a reasonably strong relationship with biospheric values. Therefore, this study confirms that

respondents' ethnicity and age groups are positively related to biospheric values. Furthermore, findings showed that the respondents' household income and marital status had statistically strong relationships with egoistic values. This study endorses the notion that egoistic values may be related to economic factors. Furthermore, there has not been much research done on the relationship between the respondents' marital status and egoistic value orientations. Since the relationship between egoistic values and the respondents' marital status was fairly significant, this study confirms that egoistic values do relate to a consumers marital status. Altruistic values had a statistically significant relationship with the respondents' number of children. Therefore, this study supports the belief that people who show altruistic values consider other humans, such as their children.

When considering the correlation between the means of the components of the *value orientations* and disposal methods, respondents who considered recycling, donation and re-using were mostly the respondents with biospheric- and altruistic value orientations. Consequently, it is apparent that by recycling, donating or re-using unwanted apparel the consumer is indeed benefitting nature and other human beings. Furthermore, respondents who considered reselling and discarding their unwanted clothing were associated with egoistic values. These consumers might be motivated to resell for the reason of economic benefit (Stern *et al.*, 1993: 324), furthermore consumers might find throwing away their unwanted clothing much more convenient than a disposal method that would benefit others as well as the environment (Joung & Park-Poaps, 2013: 109). The correlations between discarding and reselling as clothing disposal method and biospheric value orientations were weak to moderate, and also negative. This is because discarding behaviour, and to a lesser extent, reselling seems to contradict biospheric values. There was a very strong negative correlation between altruistic values and reselling, however this correlation was not statistically significant.

The overall findings of this section indicated that three value orientations (biospheric, egoistic and altruistic) as identified by De Groot and Steg (2008) may be recognised as three prominent value orientations. Furthermore, it may be concluded that there is a relationship between demographic characteristics of the sample and clothing disposal methods. It should be mentioned that the three value orientations had relationships with different demographic characteristics of the sample; however, respondents' level of education had no relationship with the value orientations. Finally, it may be recognised that different value

orientations correlate differently with each disposal method, and that the most prominent clothing disposal method associated with values is donation.

### **5.2.2 Consumers' ecological worldview in clothing disposal behaviour**

Objective 2 aimed to understand the role that consumers' underlying worldview of beliefs played in their clothing disposal behaviour. Section three of the questionnaire represented the NEP Scale of Dunlap and his colleagues (Dunlap *et al.*, 2000). The NEP scale is a popular model for determining pro-environmental behaviour (Sánchez & Lafuente, 2010: 733-734). Findings for this section have shown that the majority of the selected sample of female consumers in South Africa was moderately associated with an ecological worldview of beliefs, as the mean of the NEP Scale indicated moderate levels of pro-environmentalism. Findings on the relationship between the demographic characteristics of the sample and the mean of the NEP Scale indicated that there is a statistically significant relationship between respondents' ethnicity and the mean of the NEP Scale. This study therefore confirms that demographic characteristics may have an influence on consumers' underlying worldview of beliefs about the relationship between humans and nature.

The overall findings of this section indicated that the NEP Scale may be used to determine consumers' pro-environmental behaviour. Findings also indicated that demographic characteristics may have an influence on consumers' pro-environmental behaviour.

### **5.2.3 Female consumers' beliefs regarding the consequences of clothing disposal behaviour and the personal norms that guide such behaviour**

Objective 3 aimed at determining female consumers' awareness of consequences (AC) related to the disposal of clothing, and their ascription of responsibility (AR) for such consequences and the personal norms (PN) that guide their clothing disposal behaviour, and was allocated in section four of the questionnaire. It is important to mention that initially an unrestricted factor extraction was performed on the items of AC, AR and PN and resulted in four factors. The fourth factor extraction was considered problematic as the fourth factor only included two factor loadings. Based on existing theory a three-factor extraction was pursued. The first and third factors included awareness items, but whereas the first factor addressed more general awareness, the third factor was more specifically related to an awareness of clothing recycling and waste disposal consequences. Factor two remained related to items that measured personal norms. Results indicated that the respondents are

largely aware of the consequences of their actions towards the environment, and that their personal norms appear to have an influence on their pro-environmental behaviour.

Findings indicated for this section that number of children, age and ethnicity had the most significant influences on beliefs and norms. This study confirms that these demographic characteristics influence pro-environmental behaviour. PN, GB and AB were also correlated with the disposal methods and the findings indicated that the respondents appear to select pro-environmental disposal methods such as recycling, donation and re-using as clothing disposal methods.

#### **5.2.4 Specific methods female consumers use to dispose of their unwanted clothing items**

Objective four was based on determining the specific disposal methods used by female consumers to dispose of the unwanted clothing items and was allocated in section five of the questionnaire. The clothing disposal methods used in Shim's (1995) clothing disposal scale was used as a guide, but was adapted for this study and included reselling, recycling, donation, discarding and re-using. Overall findings based on the relationship between the demographic characteristics and the disposal methods indicated that respondents' age groups, number of children, ethnicity and level of education had the most meaningful relationships with the disposal methods. Marital status and household income had no relationship with the disposal methods.

Objective five is incorporated in each section based on respondents' value orientations, ecological worldview of beliefs and AC, AR and PN.

From the findings discussed above it may be concluded that it is relevant to explore consumer behaviour in South Africa, as this country has an emerging economy with various cultures. It is also important to explore consumers' values, beliefs and norms when researching a topic related to consumer behaviour, as this study has proven that there is a direct relationship between behaviour and personal normative conduct. This study has found that the majority of the sample of consumers that participated in this research showed predominantly caring and compassionate value orientations, were aware of the consequences of their behaviour, ascribed responsibility to themselves in terms of protecting the environment, and their personal norms influenced their behaviour. However, these consumers appear to be only moderately environmentally orientated. Finally, the majority of the consumers that participated in this study appeared to use recycling, donation and re-use as clothing disposal methods.

When considering these conclusions, it appears that there is still some inconsistency among the actual pro-environmental intentions of these consumers. Although these consumers' value orientations indicated concern for nature and others, and even though they are aware of the consequences of their actions and accept responsibility for such consequences, they only showed moderate pro-environmental intents. A possible reason may be that because of the recent growth in pro-environmental promotions, consumers are not really aware of existing environmental problems, but instead their pro-environmental clothing disposal behaviour is only the result of being trendy or wanting to be accepted. These findings should be further investigated to explore a deeper relationship among the actual knowledge consumers have of environmental problems.

### **5.3 CONTRIBUTION TO EXISTING THEORY**

To date limited empirical evidence addressed the issue of clothing disposal behaviour in South Africa. This study provides exploratory evidence that can serve as a basis for future research on the topic in the field of consumer science, as it provides insight into the clothing disposal behaviour of female consumers who reside in Tshwane. Moreover, it serves as a preliminary attempt to explore the relevance of the VBN Theory (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994) and the NEP Scale (Dunlap *et al.*, 2000), to interpret clothing disposal behaviour in the South African emerging market context. Burgess and Steenkamp (2006: 353) found that it is necessary to conduct innovative and new research in emerging markets, as it may contribute to the development of sciences in these markets. Therefore, considering that South Africa is an emerging economy with various cultures, it is important to explore the VBN Theory and the NEP Scale among consumers.

A specific contribution of the study relates to the various types of value orientations that have to date not been extensively explored in emerging market contexts such as South Africa. The scale items developed for this study may prove to be of practical value for researchers in other developing countries to explore the relevance of these value orientations in terms of pro-environmental disposal behaviour. Similarly, limited evidence exists regarding the application and use of the NEP Scale in South Africa. As pointed out by Dunlap (2008: 12), a number of studies in Eastern European and Latin American nations have encountered difficulties with respondents' understanding of some of the NEP Scale items. The internal consistencies for the scale in these countries were between  $\alpha=0.65$  and  $\alpha=0.69$ ; however, only 12 items were included in the scale applied in these countries. Nevertheless, these findings substantiate the internal consistency ( $\alpha=0.69$ ) for the NEP Scale

applied in this study, and provides support for the notion that the NEP Scale may not be an appropriate measuring instrument for environmentalism outside of developed Western nations. Finally, as part of the VBN Theory, the influence of consumers' norms on their clothing disposal behaviour makes a significant contribution to research in South Africa, as the results contribute to understanding the correlation between norms of culturally diverse consumers and pro-environmental behaviour. Therefore, this study may provide evidence that may encourage future researchers in other developing markets to explore the relevance of norms in relation to pro-environmental behaviour.

#### **5.4 PRACTICAL IMPLICATIONS ASSOCIATED WITH THE STUDY**

Social science research contributes to information based on the beliefs, behaviour and interactions of humans (Neuman, 2000: 6), and may therefore be seen as a source that conveys information that may ultimately create awareness. However, the contribution of research can not influence the behaviour of a population solitarily. For this study there are various practical implications that may assist in creating more pro-environmental behaviour. The first is the contribution of the textile industry. Studies abroad have shown large amounts of textiles being discarded, without much effort of recovering some of the waste (EPA, 2011: 7). The situation in South Africa seems to be similar as more than half of the waste created by the textile industries in this country ends up on landfills. It may therefore be concluded that the textile industries in South Africa did not pay much attention to there waste management efforts (Larney & Van Aardt, 2010: 39-40). It is evident that more influential effort by the textile industries is required to promote pro-environmental behaviour in this country.

Secondly, although South Africa supports a waste management hierarchy model (Muzenda *et al.*, 2012: 150), and Environmental Management Policies (Karani & Jewasikiewitz, 2007: 169) that encourages pro-environmental behaviour, excessive waste still suppresses South African landfills (National Waste Information Baseline Report, 2012: 19). It is evident that South Africans need to be educated regarding the advantages of pro-environmental disposal behaviour. However, participation in pro-environmental behaviour requires facilitating conditions. Countries abroad have been introduced to various recycling programmes such as drop-off facilities, curb-side programmes and co-collection. Although drop-off recycling facilities are available to South African consumers, municipalities have not yet included other, more convenient, recycling facilities to encourage pro-environmental disposal efforts.



The third and final implication that may encourage pro-environmental behaviour is the implementation of improved environmental education. Previous research explains that intervention strategies might influence behaviour (Steg & Vlek, 2009: 313). These interventions include information strategies that may ultimately influence motivations, perceptions and also knowledge, which increases the awareness of environmental problems. Although information campaigns may not directly influence behaviour, it does however increase knowledge and awareness.

## 5.5 LIMITATIONS OF THE STUDY

Although the findings of this study provide some exploratory evidence regarding the relevance of values, belief and norms in female consumers' clothing disposal behaviour, the results are based on a non-probability, purposive sample. Respondents were recruited by means of snowball sampling in the limited geographical scope of the Tshwane metropolis. Most of the respondents were white, the majority earned a household income of less than R20 000 and a large segment of the sample had a higher level of education. The results can therefore not be generalised to the whole population. A more representative sample is needed to make conclusions about the South African female consumer in general.

In terms of the data analyses, the techniques employed in this study were limited to descriptive and inferential statistics, which predominantly focused on the correlation between variables. Correlation data can however not conclusively prove causality (Fouché & De Vos, 2011: 96) and therefore future research may benefit from data analysis techniques that can further extend the findings of this study to substantiate the causal relations between the variables as specified in the VBN Theory (Stern, 2000; Stern *et al.*, 1999; Stern & Dietz, 1994).

This study was further limited by the scope of factors that were taken into consideration as antecedents of pro-environmental disposal behaviour. Prior empirical evidence indicates the relevance of various other factors that may inhibit or promote environmentally responsible behaviour such as demographic variables (Joung & Park-Poaps, 2013; Swami *et al.*, 2010; Leigh & Realff, 2003; Domina & Koch, 2002; Daneshvary *et al.*, 1998; Derksen & Gartrell, 1993), knowledge of environmental problems (Vining & Ebreo, 1990: 63) and waste management strategies (Muzenda *et al.*, 2012).

## 5.6 SUGGESTIONS FOR FUTURE RESEARCH

The exploratory findings of this study highlight certain relevant research possibilities that may be worthwhile examining in future related studies. The first research possibility includes a more extensive investigation of the relevance of demographic variables. Many studies focusing on pro-environmental behaviour, disposal behaviour, and recycling behaviour have included demographic characteristics (Joung & Park-Poaps, 2013; Swami *et al.*, 2010; Leigh & Realff, 2003; Domina & Koch, 2002; Daneshvary *et al.*, 1998; Derksen & Gartrell, 1993). However, it has been found that demographic characteristics and these behaviours are not always strongly related. In this study, some demographic variables seem to be influential, but due to the non-probability sampling technique that was used to recruit respondents, results are not conclusive in terms of the larger South African population. Future research may therefore benefit from a larger sample to represent a more accurate representation of South African consumers.

A second research priority includes the further validation of the causal relationships between values, beliefs and norms as specified in the VBN theoretical framework. This study was predominantly focused on exploring the correlation between variables. Future research should include data analysis techniques, such as structural equation modelling, to explore complex relationship between variables (Introduction to structural equation modelling, 2010: 6), and specifically the variables of the VBN Theory.

Apart from values, beliefs and norms, several other factors may impact on consumers' decisions to engage in environmentally responsible disposal behaviour. As an example, consumers' actual knowledge of environmental problems that are caused by clothing disposal should be explored. Previous studies conducted in more developed countries have revealed that recycling behaviour is often significantly influenced by the consumers' knowledge about the environment and their understanding of the benefits of recycling as a disposal method (Vining & Ebreo, 1990: 63). Convenience and the availability of resources that facilitate pro-environmental disposal behaviour are other aspects that require further investigation (Vining & Ebreo, 1990: 72). Furthermore, the influence of pro-environmental advertising and information campaigns should also be explored. Nowadays there are many media campaigns promoting environmental awareness. The content of these campaigns may vary from instilling a sense of foreboding among consumers regarding the realities of environmental decline to emphasizing the social and environmental rewards of acting in a pro-environmental manner. The efficacy and value of such campaigns remain questionable

and further empirical research is needed to update current initiatives. This may have a negative result as consumers may reject this information because they are not comfortable giving up their current lifestyles and routines associated with being environmentally concerned (Schiffman & Kanuk, 2010: 303).

## **5.7 CONCLUSION**

This chapter presented conclusions that assist in clarifying the influence and contribution of this study. From the preceding paragraphs it is clear that environmental issues such as waste disposal, and clothing disposal in particular, are not problems that should be ignored. As explained before, waste may be a result of over consumption due to economic growth, and this not only leads to environmental problems such as overflowing landfill sites, pollution of air, water and land, and a feeble infrastructure, but also produces health risks, which influence humans directly. Mahatma Gandhi stated that the “earth provides enough to satisfy every man's needs, but not every man's greed” (Goodreads, 2013). It is therefore necessary to emphasise the importance of responsible consumption and reducing excessive waste disposal, to ultimately preserve nature.

---

# List of References

---

- ALDEN, D.L., STEENKAMP, J-B.E.M. & BATRA, R. 2006. Consumer attitudes toward marketplace globalization: structure, antecedents and consequences. *International Journal of Research in Marketing*, 23(3): 227-239.
- ALLPORT, G.W. 1961. *Pattern and growth in personality*. New York: Holt, Rinehart and Winston. 593 p.
- ARBUTHNOT, J. 1974. Environmental knowledge and recycling behaviour as a function of attitude and personality characteristics. *Personality and Social Psychology Bulletin*, 1(1): 119-121.
- BABBIE, E. & MOUTON, J. 2001. *The practice of social research*. Cape Town: Oxford University Press. 674 p.
- BARDI, A. & SCHWARTZ, S.H. 2003. Values and behavior: strength and structure of relations. *Personality and Social Psychology Bulletin*, 29: 1207-1220.
- BARR, S. 2003. Strategies for sustainability: citizens and responsible environmental behaviour. *Area*, 35 (3): 227-240.
- BARTL, A. & MARINI, I. 2008. Recycling of apparel. *Chemical Engineering Transactions*, 13: 327-333.
- BENEFITS-OF-RECYCLING. 2013. What is recycling? Available from: <http://www.benefits-of-recycling.com/whatisrecycling/> [Accessed 15 October 2013].
- BEST, H. & MAYERL, J. 2013. Values, beliefs, attitudes: an empirical study on the structure of environmental concern and recycling participation. *Social Science Quarterly*, 94(3): 691-714.
- BIANCHI, C. & BIRTWISTLE, G. 2010. Sell, give away, or donate: an exploratory study of fashion clothing disposal behaviour in two countries. *The International Review of Retail, Distribution and Consumer Research*, 20 (3): 353-368.
- BIANCHI, C. & BIRTWISTLE, G. 2012. Consumer clothing disposal behaviour; a comparative study. *International Journal of Consumer Studies*, 36(3): 336-341.
- BIRTWISTLE, G. & MOORE, C.M. 2007. Fashion clothing – where does it all end up? *International Journal of Retail & Distribution Management*, 35(3): 210-216.
- BLESS, C., HIGSON-SMITH, C. & KAGEE, A. 2006. *Fundamental of social research: an African perspective*. Cape Town: Juta & Co. 192 p.

- BOGNER, J., AHMED, M.A., DIAZ, C., FAAIJ, A., GAO, Q., HASHIMOTO, S., MARECKOVA, K., PIPATTI, R. & ZHANG, T. 2007. Waste management, In METZ, B., DAVIDSON, O.R., BOSCH, P.R., DAVE, R. & MEYER, L.A. (Eds.). *Climate change: mitigation*. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.
- BOND, M.H. 2009. Believing in beliefs: a scientific but personal quest. In LEUNG, K. & BOND, M.H. (Eds.). *Psychological Aspects of social axioms: understanding global beliefs systems*. New York: Springer. p. 319-320.
- BOZIOELOS, G. & BENNET, P. 1999. The theory of planned behaviour as predictor of exercise: the moderating influence of beliefs and personality variables. *Journal of Health Psychology*, 4: 517-529.
- BRATT, C. 1999. Consumers' environmental behaviour: generalized, sector-based, or compensatory. *Environment and behavior*, 31: 28-44.
- BRICS. 2013. South Africa in BRICS. Available from: <http://www.brics5.co.za/about-brics/south-africa-in-brics/> [Accessed 19 October 2013].
- BURGESS, S.M. & STEENKAMP, J-M.E.M. 2006. Marketing Renaissance: how research in emerging markets advances marketing science and practice. *International Journal of Research in Marketing*, 23(4): 337-356.
- BUTLER, S.M. & FRANCIS, S. 1997. The effects of environmental attitudes on apparel purchasing behaviour. *Clothing and Textile Research Journal*, 15: 76-85.
- CANT, M.C., BRINK, A., & BRIJBALL, S. 2006. *Consumer behaviour*. Cape Town: Juta. 320 p.
- CAPETOWNMAGAZINE. 2013. 10 Top places to hand in old clothes in Cape Town. Available from: [http://www.capetownmagazine.com/best-of-cape-town/10-top-places-to-hand-in-old-clothes-in-cape-town/124\\_22\\_17009](http://www.capetownmagazine.com/best-of-cape-town/10-top-places-to-hand-in-old-clothes-in-cape-town/124_22_17009) [Accessed 17 October 2013].
- CARLSON, D.H. 2004. Environmental concern in South Africa: the development of a measuring scale. Dissertation, (M.Sc.). University of South Africa.
- CATTON, W. R. Jr. 1982. *Overshoot. The ecological basis of revolutionary change*. University of Illinois Press. 320 p.
- CATTON, W. R. & DUNLAP, R. E. 1980. A New Ecological Paradigm for post-exuberant society. *American Behavioral Scientist*, 24(1): 15-48.
- CHATTERJEE, D.P. 2008. Oriental disadvantage versus occidental exuberance: appraising environmental concern in India – a case study in a local context. *International Sociology*, 23(1): 5-33.
- CHEN, H. & BURNS, L.D. 2006. Environmental analysis of textile products. *Clothing and Textiles Research Journal*, 24(3): 248-261.
- CHEN, M-F. 2012. Consumers' pro-environmental behavior in Taiwan – The examination of the VBN Theory and the impacts of climate change knowledge. Paper presented at the International Congress on Informatics, Environment, Energy and Applications 2012. *IPCSIT Proceedings*, Vol. 38, Singapore.

- CIALDINI, R., KALLGREN, C. & RENO, R. 1991. A focus theory of normative conduct: a theoretical refinement and re-evaluation of the role of norms in human behaviour. *Advances in Experimental Social Psychology*, 24: 201-234.
- CIALDINI, R.B., RENO, R.R. & KALLGREN, C.A. 1990. A focus theory of normative conduct: recycling the concept of norms to littering in public places. *Journal of Personality and Social Psychology*, 58(6): 1015-1026.
- CITY OF TSHWANE. City of Tshwane Integrated Development Plan (IDP) Review. 2013/14. Available form: <http://www.tshwane.gov.za/notice/Pages/City-of-Tshwane--Draft-Second-Revised-IDP-for-period-2013-14.aspx> [Accessed 21 November 2013].
- CITY OF TSHWANE. City of Tshwane Municipal Household Survey. 2008. Available from: <http://www.tshwane.gov.za/AboutTshwane/CityManagement/CityDepartments/City%20Planning,%20Development%20and%20Regional%20Services/Pages/default.aspx> [Accessed 21 November 2013].
- CLUVER, B.G. 2008. Consumer clothing inventory management. Thesis, (Ph.D.). Oregon State University.
- COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH. 2012. All South African households in large centres to separate household waste by 2016. Available from: [http://www.csir.co.za/enews/2012\\_nov/01.html](http://www.csir.co.za/enews/2012_nov/01.html) [Accessed 22 April 2013].
- COUNCIL FOR TEXTILE RECYCLING. 2013. Wear, donate, recycle. Available from: <http://www.weardonaterecycle.org> [Accessed 29 July 2013].
- DANESHVARY, N., DANESHVARY, R. & KEITHSCHWER, R. 1998. Solid-waste recycling behavior and support for curb-side textile recycling. *Environment and Behavior*, 30(2): 144-161.
- DE GROOT, J.I.M. & STEG, L. 2007. Value orientations and environmental beliefs in five countries; validity of an instrument to measure egoistic, altruistic and biospheric value orientations. *Journal of Cross-Cultural Psychology*, 38: 318-332.
- DE GROOT, J.I.M. & STEG, L. 2008. Value orientations to explain beliefs related to environmental significant behavior: how to measure egoistic, altruistic, and biospheric value orientations. *Environment and Behavior*, 40(3): 330-354.
- DE VOS, A.S. & STRYDOM, H. 2011. Scientific theory and professional research. In: DE VOS, A.S., STRYDOM, H., FOUCHÉ, C.B. & DELPORT, C.S.L. *Research at grass roots*. 4<sup>th</sup> ed. Pretoria: Van Schaik, p. 28-44.
- DE YOUNG, R. 1986. Some psychological aspects of recycling. The structure of conservation satisfaction. *Environment and behavior*, 18(4): 435-449.
- DELPORT, C.S.L. & ROESTENBURG, W.J.H. 2011. Qualitative data-collection methods: questionnaires, checklists, structured observation and structured interview schedules. In: DE VOS, A.S., STRYDOM, H., FOUCHÉ, C.B. & DELPORT, C.S.L. *Research at grass roots*. 4<sup>th</sup> ed. Pretoria: Van Schaik, p. 171-205.
- DERKSEN, L. & GARTRELL, J. 1993. The social context of recycling. *American Sociological Review*, 58: 434-442.

- DESTINYCONNECT. 2012. Recycling is the new fashion. Available from: <http://www.destinyconnect.com/2012/10/10/recycling-is-the-new-fashion-2012-10-09/> [Accessed 14 October 2013].
- DICKSON, M.A. & ECKMAN, M. 2006. Social responsibility: the concept as defined by apparel and textile scholars. *Clothing and Textiles Research Journal*, 24(3): 178-191.
- DOMINA, T. & KOCH, K. 2002. Convenience and frequency of recycling. Implications for including textiles in curb-side recycling programs. *Environment and Behavior*, 34(2): 216-238.
- DUNLAP, R.E. 2008. The New Environmental Paradigm Scale: from marginality to worldwide use. *Journal of Environmental Education*, 40(1): 3-18.
- DUNLAP, R.E. & VAN LIERE, K.D. 1978. The "New Environmental Paradigm": a proposed measuring instrument and preliminary results. *Journal of Environmental Education*, 9: 10-19.
- DUNLAP, R.E., VAN LIERE, K.D., MERTIG, A.G. & JONES, R.E. 2000. Measuring endorsement of the New Ecological Paradigm: a revised NEP Scale. *Journal of Social Issues*, 56(3): 425-442.
- EBREO, A., HERSHEY, J. & VINING, J. 1999. Reducing solid waste: linking recycling to environmentally responsible consumerism. *Environment and Behavior*, 31: 107-135.
- ELLEN, P.S., WIENER, J.L. & COBB-WALGREN, C. 1991. The role of perceived consumer effectiveness in motivating environmentally conscious behaviors. *Journal of Public Policy & Marketing*, 10(2): 102-117.
- ELLIS, A. & F. KORZENNY. 2012. *Black, white, or green: the powerful influence of ethnicity on pro-environmental attitudes and behaviors*. Paper presented at Association of Marketing Theory and Practice Proceedings, March 2012.
- FIELD, A. & MILES, J. 2010. *Discovering Statistics using SAS*. London. Sage Publications. 720 p.
- FOUCHÉ, C.B. & DELPORT, C.S.L. 2011. Introduction to the research process. In: DE VOS, A.S., STRYDOM, H., FOUCHÉ, C.B. & DELPORT, C.S.L. *Research at grass roots*. 4<sup>th</sup> ed. Pretoria: Van Schaik, p. 66-76.
- FOUCHÉ, C.B., DELPORT, C.S.L. & DE VOS, A.S. 2011. Quantitative research designs. In: DE VOS, A.S., STRYDOM, H., FOUCHÉ, C.B. & DELPORT, C.S.L. *Research at grass roots*. 4<sup>th</sup> ed. Pretoria: Van Schaik, p. 142-158.
- FOUCHÉ, C.B. & DE VOS, A.S. 2011. Formal formulations. In: DE VOS, A.S., STRYDOM, H., FOUCHÉ, C.B. & DELPORT, C.S.L. *Research at grass roots*. 4<sup>th</sup> ed. Pretoria: Van Schaik, p. 89-100.
- FRANSSON, N. & GÄRLING, T. 1999. Environmental concern; conceptual definitions, measurement methods, and research findings. *Journal of Environmental Psychology*, 19: 369-382.
- FRIENDS OF THE EARTH. 2008. Recycling: Why is it important and how to do it. Available from: <http://www.foe.co.uk> [Accessed 15 October 2011].
- FÜLE, M. & KENÉZ, A. 2005. Investigation of consumer environmental awareness by marketing research methods – Methodological considerations. *Periodica Polytechnica Social and Management Sciences*, 13(2): 121-132.

- GANIARIS, G. & OKUN, J. 2001. To riches from rags: Profiting from waste reduction. Paper prepared for U.S EPA Region 2. Available from: <https://docs.google.com/viewer?url=http://www.epa.gov/region2/p2/textile.pdf&chrome=true> [Accessed 7 April 2012].
- GÖCKERITZ, S., SCHULTZ, P.W., RENDÓN, T., CIALDINI, R.B., GOLDSTEIN, N.J. & GRISKEVICIUS, V. 2010. Descriptive normative beliefs and conservation behaviour: The moderating roles of personal involvement and injunctive normative beliefs. *European Journal of Social Psychology*, 40: 514-523.
- GOODREADS. 2013. Quotations by author: Mahatma Gandhi (1869-1948). Available from: <https://www.goodreads.com/quotes/tag/environment> [Accessed 1 Des 2013].
- GRANZIN, L.K. & OLSEN, J.E. 1991. Characterizing participants in activities protecting the environment: A focus on donating. *Journal of Public Policy and Marketing*, 10(2): 1-27.
- GRAVETTER, F.J. & FORZANO, L.B. 2003. *Research methods for the Behavioral Sciences*. Belmont: Wadsworth/Thomson Learning. 512 p.
- GREULICH, M. & AKERS, S. 2009. Recycling Center feasibility study. Indiana University Office of Sustainability. Available from: <http://www.indiana.edu> [Accessed 24 July 2012].
- GRINNELL, R.M. & UNRAU, Y.A. 2008. *Social work research and evaluation: Foundations of evidence-based practice*. New York: Oxford University Press. 610 p.
- HANSLA, A., GAMBLE, A., JULIUSSON, A. GÄRLING, T. 2008. The relationship between awareness of consequences, environmental concern, and value orientations. *Journal of environmental Psychology*, 28: 1-9.
- HANSON, J.W. 1980. A proposed paradigm for consumer product disposal processes. *The Journal of Consumer Affairs*, 14(1): 49-67.
- HARLAND, P., STAATS, H. & WILKE, H.A.M. 1999. Explaining pro-environmental intention and behavior by personal norms and the theory of planned behaviour. *Journal of Applied Social Psychology*, 29(12): 2505-2528.
- HARRELL, G.D. & McCONOCHA, D.M. 1992. Personal factors related to consumers' product disposal tendencies. *Journal of Consumer Affairs*, 26(2): 397-417.
- HAWCROFT, L.J. & MILFONT, T.L. 2010. The use (and abuse) of the New Environmental Paradigm Scale over the last 30 years: A meta-analysis. *Journal of Environmental Psychology*, 30: 143-158.
- HAWLEY, J.M. 2006. Textile recycling: A systems perspective. In: WANG, Y. *Recycling in Textiles*. Cambridge, UK: Woodhead, p. 7-24.
- HAWLEY, J.M. 2008. The economic impact of dumping clothing. In HETHORN, J. & ULASEWICZ, C. (Eds.). *Sustainable fashion: Why now? A conversation exploring issues, practices, and possibilities*. New York: Fairchild. 448 p.
- HAWLEY, J. M. 2009. Understanding and improving textile recycling: A systems perspective. In BLACKBURN, R. *Sustainable textiles: Life cycle and environmental impact*. The Textile Institute, Cambridge, UK: Woodhead, 416 p.



- HIBBERT, S.A., HORNE, S. & TAGG, S. 2005. Charity retailers in competition for merchandise: Examining how consumers dispose of used goods. *Journal of Business Research*, 58: 819-828.
- HONIG, M.B. 2013. Towards understanding private conservation in the Cape Winelands of South Africa: Developing a theory of change. Dissertation, (M.Sc.). Central European University.
- HOWENSTINE, E. 1993. Market segmentation for recycling. *Environment and Behavior*, 25(1): 86-102.
- HUMANA PEOPLE TO PEOPLE IN SOUTH AFRICA. 2013. Humana Second Hand. Available from: <http://www.hpp-sa.org/humana-second-hand/humana-second-hand> [Accessed 19 October 2013].
- IBTISSEM, M.H. 2010. Application of Value Beliefs Norms Theory to the energy conservation behaviour. *Journal of Sustainable Development*, 3(2): 129-139.
- INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT. 1994. Symposium: Sustainable Consumption, 19-20 January Oslo, Norway. Available from: <http://www.iisd.org/susprod/principles.htm> [Accessed 10 October 2013].
- INTRODUCTION TO STRUCTURAL EQUATION MODELLING. 2010. Course notes. Available from: [http://www.smallwaters.com/Courses%20and%20Presentations/Structural%20Equation%20Modeling/Introduction%20to%20SEM%20with%20Proc%20Calis/Introduction%20to%20SEM%20\(Webinar%20Slides\).pdf](http://www.smallwaters.com/Courses%20and%20Presentations/Structural%20Equation%20Modeling/Introduction%20to%20SEM%20with%20Proc%20Calis/Introduction%20to%20SEM%20(Webinar%20Slides).pdf) [Accessed 1 Des 2013].
- INVESTOPEDIA. 2013. Developed economy. Available from: <http://www.investopedia.com/terms/d/developed-economy.asp> [Accessed 9 October 2013].
- IYER, E.S. & KASHYAP, R.K. 2007. Consumer recycling: role of incentives, information and social class. *Journal of Consumer Behaviour*, 6(1): 32-47.
- JACKSON, T. 2005. *Motivating sustainable consumption: A review of evidence on consumer behaviour and behavioural change*. A report to the Sustainable Development Research Network. Centre for Environmental Strategy, University of Surrey. Available from: <http://hiveideas.com> [Accessed 21 July 2013].
- JACKSON, T. & MICHAELIS, L. 2003. *Policies for sustainable consumption*. A report to the Sustainable Development Commission, forming part of the SDC submission to DEFRA's Strategy on Sustainable Consumption and Production, Sustainable Development Commission, May 2003, p. 1-77. Available from: <http://www.sd-commission.org.uk/publications.php?id=138> [Accessed 21 July 2013].
- JOUNG, H-M., & PARK-POAPS, H. 2013. Factors motivating and influencing clothing disposal behaviours. *International Journal of Consumer Studies*, 37: 105-111.
- KALLGREN, C.A., RENO, R.R. & CIALDINI, R.B. 2000. A focus theory on normative conduct: when norms do and do not affect behavior. *Personality and Social Psychology Bulletin*, 26(8): 1002-1012.
- KARANI, P. & JEWASIKIEWITZ, S.M. 2007. Waste management and sustainable development in South Africa. *Environment, Development and Sustainability*, 9: 163-185.
- KELLERT, S.R. 1984. Urban American perceptions of animals and the natural environment. *Urban Ecology*, 8(3): 209-228.

- KINNEAR, T.C., TAYLOR, J.R. & AHMED, S.A. 1974. Ecologically concerned consumers: Who are they? *Journal of Marketing*, 38: 20-24.
- KOCH, K. & DOMINA, T. 1997. The effects of environmental attitude and fashion opinion leadership on textile recycling in the USA. *Journal of Consumer Studies and Home Economics*, 21(1): 1-17.
- KOLLMUSS, A. & AGYEMAN, J. 2002. Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environment Education Research*, 8(3): 239-260.
- LARNEY, M. & VAN AARDT, A.M. 2004. Recycling of textiles: The South African scene. *Journal of Family Ecology and Consumer Sciences*, 32: 60-69.
- LARNEY, M. & VAN AARDT, A.M. 2010. Case study: Apparel industry waste management: A focus on recycling in South Africa. *Waste Management and Research*, 28(1): 36-43.
- LEEDY, P.D. & ORMROD, J.E. 2005. *Practical research: planning and design*. 8<sup>th</sup> ed. New York: Pearson Merrill Prentice Hall. 319 p.
- LEEMING, F., DWYER, W., PORTER, B. & COBERN, M. 1993. Outcome research in environmental education: A critical review. *Journal of Environmental Education*, 24: 8-21.
- LEIGH, N.G. & REALFF, M.J. 2003. A framework for geographically sensitive and efficient recycling networks. *Journal of Environmental Planning and Management*, 46(2): 147-165.
- LIVE ECO. 2013. Waste not, want not – how to recycle clothing in South Africa. Available from: <http://www.liveeco.co.za/2010/11/30/waste-not-want-not-how-to-recycle-clothing-in-south-africa/> [Accessed 17 October 2013].
- LÓPEZ, A.G. & CUERVO-ARANGO, M.A. 2008. Relationship among values, beliefs, norms and ecological behaviour. *Psicothema*, 20(4): 623-629.
- MALEPA, M.M.M. & MASTAMET-MASON, M.N. 2013. Fashion consumption and disposal practices of South African consumers and their environmental implications. *Proceedings of the 11<sup>th</sup> South African Association of Family Ecology and Consumer Science (SAAF ECS)*, 27 February – 1 March, Pretoria.
- MALONEY, M.P. & WARD, M.P. 1973. Ecology: Let's hear from the people. *American Psychologist*, 28(7): 583-586.
- MERRIAM WEBSTER: AN ENCYCLOPEDIA BRITANNICA COMPANY. 2013a. Available from: <http://www.merriam-webster.com/dictionary/discard> [Accessed 11 October 2013].
- MERRIAM WEBSTER: AN ENCYCLOPEDIA BRITANNICA COMPANY. 2013b. Available from: <http://www.merriam-webster.com/dictionary/donation> [Accessed 28 November 2013].
- MERRIAM WEBSTER: AN ENCYCLOPEDIA BRITANNICA COMPANY. 2013c. Available from: <http://www.merriam-webster.com/dictionary/landfill> [Accessed 9 October 2013].
- MERRIAM WEBSTER: AN ENCYCLOPEDIA BRITANNICA COMPANY. 2013d. Available from: <http://www.merriam-webster.com/dictionary/resale> [Accessed 28 November 2013].
- MERRIAM WEBSTER: AN ENCYCLOPEDIA BRITANNICA COMPANY. 2013e. Available from: <http://www.merriam-webster.com/dictionary/reuse> [Accessed 28 November 2013].

- MITCHELL, R.C. 1980. *Public opinion on environmental issues: Results of a national public opinion survey*. Report for the Council of Environmental Quality. Washington, DC: United States Government Printing Office.
- MOKHTARI, M. 1992. An alternative model of U.S. clothing expenditures: Application of cointegration techniques. *The Journal of Consumer Affairs*, 26(2): 305-323.
- MORLEY, N., SLATER, S., RUSSELL, S., TIPPER, M. & WARD, G.D. 2006. Recycling of low grade clothing waste. Available from: <http://www.oakdenehollins.co.uk/reports.php> [Accessed 22 May 2013].
- MUNIAFU, M. & OTIATO, E. 2010. Solid waste management in Nairobi, Kenya. A case for emerging economies. *The Journal of Language, Technology & Entrepreneurship in Africa*, 2(1): 342-350.
- MUZENDA, E., NTULI, F. & PILUSA, T.J. 2012. Waste management, strategies and situation in South Africa: An overview. International Conference on Chemical Engineering and Technology. 13-14 August 2012 Oslo, Norway. *World Academy of Science, Engineering and Technology*, 68: 149-152.
- NATIONAL STATISTICS OFFICES OF THE BRICS GROUP. 2013. BRICS joint Statistical Publications. 4<sup>th</sup> ed. Available from: [http://www.statssa.gov.za/news\\_archive/Docs/FINAL\\_BRICS%20PUBLICATION\\_PRINT\\_23%20MARCH%202013\\_Reworked.pdf](http://www.statssa.gov.za/news_archive/Docs/FINAL_BRICS%20PUBLICATION_PRINT_23%20MARCH%202013_Reworked.pdf) [Accessed 22 November 2013].
- NATIONAL WASTE INFORMATION BASELINE REPORT. 2012. Department of Environmental Affairs. South Africa. Available from: <http://sawic.environment.gov.za/?menu=16> [Accessed 1 July 2013].
- NEUMAN, W.L. 2000. *Social research methods: qualitative and quantitative approaches*. 4<sup>th</sup> ed. Boston: Allyn & Bacon. 558 p.
- NEW GENERATION TEXTILE RECYCLING – AN OUTLOOK. 2010. Available from: <http://www.articlesbase.com/environment-articles/new-generation-textile-recycling-an-outlook-1886748.html> [Accessed 12 June 2013].
- NOLAN, J.M., SCHULTZ, P.W., CIALDINI, R.B., GOLDSTEIN, N.J. & GRISKEVICIUS, V. 2008. Normative social influence is underdetected. *Personality and Social Psychology Bulletin*, 34: 913-923.
- NORDLUND, A.M. & GARVILL, J. 2002. Value structures behind pro-environmental behaviour. *Environment and Behavior*, 34(6): 740-756.
- NORTH, E.J., DE VOS, R.B. & KOTZÉ, T. 2003. The importance of apparel product attributes for female buyers. *Journal of Family Ecology and Consumer Sciences*, 31: 41-51.
- ORGANIC FABRICS SOUTH AFRICA. 2013. Landfills of textiles versus lands filled with textiles. Available from: <http://www.organicfabrics.co.za/1/post/2013/07/landfills-of-textiles-vs-lands-filled-with-textiles.html> [Accessed 30 October 2013].
- OSKAMP, S., ZELEZNY, L., SCHULTS, P.W., HURIN, S. & BURKHARDT, R. 1996. Commingled versus separated curb-side recycling. Does it matter? *Environment and Behavior*, 28(1): 73-91.
- OTTOMAN, J.A. 1992. Industry's response to green consumerism. *Journal of Business Strategy*, 13(4): 3-7.

- OXFORD DICTIONARIES. 2013. Definition of disposal in English. Available from: <http://www.oxforddictionaries.com/definition/english/disposal> [Accessed 28 November 2013].
- PEATTIE, K. & PEATTIE, S. 2009. Social marketing: A pathway to consumption reduction? *Journal of Business Research*, 62(2): 260-268.
- PHIPPS, M., OZANNE, L.K., LUCHS, M.G., SUBRAHMANYAN, S., KAPITAN, S., CATLIN, J.R., GAU, R., WALKER NAYLOR, R., ROSE, R.L., SIMPSON, B. & WEAVER, T. 2013. Understanding the inherent complexity of sustainable consumption: A social cognitive framework. *Journal of Business Research*, 66(8): 1227-1234.
- PICKETT-BAKER, J. & OZAKI, R. 2008. Pro-environmental products: Marketing influence on consumer purchase decisions. *Journal of Consumer Marketing*, 25(5): 281-293.
- POORTINGA, W., STEG, L. & VLEK, C. 2004. Values, environmental concerns and environmental behavior - a study into household energy use. *Environment and Behavior*, 36(1): 70-93.
- PRESS, M. & ARNOULD, E.J. 2009. Constraints on sustainable energy consumption: Market system and public policy challenges and opportunities. *Journal of Public Policy & Marketing*, 28(1): 102-113.
- PRICEWATERHOUSECOOPERS. 2012. South African retail and consumer products outlook: 2012-2016. Available from: [http://www.pwc.co.za/en\\_GX/webadmin/search/search.jhtml?searchfield=south+african+retail+and+consumer&searchsubmit.x=12&searchsubmit.y=17&pwcGeo=ZA&pwcLang=en&pwcHideLevel=0&localeOverride=en\\_ZA](http://www.pwc.co.za/en_GX/webadmin/search/search.jhtml?searchfield=south+african+retail+and+consumer&searchsubmit.x=12&searchsubmit.y=17&pwcGeo=ZA&pwcLang=en&pwcHideLevel=0&localeOverride=en_ZA) [Accessed 25 July 2013].
- RECYCLING GUIDE. 2003. Reduce, reuse, recycle. Available from: <http://www.recycling-guide.org.uk/rrr.html> [Accessed 22 October 2013].
- RENO, R.R., CIALDINI, R.B. & KALLGREN, C.A. 1993. The transsituational influence of social norms. *Journal of Personality and Social Psychology*, 64(1): 104-112.
- ROKEACH, M. 1970. *Beliefs, attitudes and values: A theory of organization and change*. San Francisco: Jossey-Bass. 214 p.
- RUIZ, J.A. 1993. Recycling overview and growth. In: LUND, H.F. *The McGraw-Hill recycling handbook*. New York: McGraw-Hill, p. 1.1-1.10.
- SAHIN, E. 2013. Predictors of Turkish elementary teacher candidates' energy conservation behaviors: An approach on Value-Belief-Norm theory. *International Journal of Environmental & Science Education*, 8(2): 269-283.
- SÁNCHEZ, M.N. & LAFUENTE, R. 2010. Defining and measuring environmental consciousness. *Revista Internacional de Sociologia*, 68(3): 731-755.
- SCHIFFMAN, L.G. & KANUK, L.L. 2010. *Consumer behaviour*. 10<sup>th</sup> ed. Upper Saddle River, N.J.: Pearson Education. 592 p.
- SCHUHWERK, M.E. & LEFKOFF-HAGIUS, R. 1995. Green or non-green? Does type of appeal matter when advertising a green product? *Journal of Advertising*, 24(2): 45-54.

- SCHULTZ, P.W., GOUVEIA, V.V., CAMERON, L.D., TANKHA, G., SCHMUCK, P. & FRANĚK, M. 2005. Values and their relationship to environmental concern and conservation behavior. *Journal of Cross-Cultural Psychology*, 36(4): 457-475.
- SCHULTZ, P.W. & OSKAMP, S. 1996. Effort as a moderator of the attitude-behaviour relationship: General environmental concern and recycling. *Social Psychology Quarterly*, 59(4): 375-383.
- SCHWARTZ, S.H. 1973. Normative explanations of helping behavior: A critique, proposal, and empirical test. *Journal of Experimental Social Psychology*, 9(4): 349-364.
- SCHWARTZ, S.H. 1977. Normative influences on altruism. In: BERKOWITZ, L. (Ed.). *Advances in Experimental Social Psychology*, New York: Academic Press, Vol. 10, p. 221-279.
- SCHWARTZ, S.H. 1992. Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25: 1-65.
- SCHWARTZ, S.H. 2006. The theory of cultural value orientations: Explication and applications. *Comparative Sociology*, 5(2-3): 137-182.
- SCHWARTZ, S.H. 2009. Basic human values. Paper for Cross-National Comparison Seminar on the Quality and Comparability of Measures of Constructs in Comparative Research: Methods and Applications, June, Bolzano, Italy. Available from: <http://www.ccsr.ac.uk/qmss/seminars/past.shtml> [Accessed 22 October 2013].
- SCHWARTZ, S.H. & HOWARD, J.A. 1984. Internalized values as moderators of altruism. In: STAUB, E., BAR-TAL, D., KARYLOWSKI, J. & REYKOWSKI, J. (Eds.). *Development and maintenance of prosocial behavior*. New York, NY: Plenum, p. 229-255.
- SHIM, S. 1995. Environmentalism and consumers' clothing disposal patterns: An exploratory study. *Clothing and Textiles Research Journal*, 13(1): 38-48.
- SHIM, S. & KOTSIOPULOS, A. 1993. A typology of apparel shopping orientation segments among female consumers. *Clothing and Textiles Research Journal*, 12(1): 73-85.
- SLIMAK, M.W. & DIETZ, T. 2006. Personal values, beliefs, and ecological risk perception. *Risk Analysis*, 26(6): 1689-1705.
- STATISTICS SOUTH AFRICA. 2012. Census 2011. Available from: [http://beta2.statssa.gov.za/?page\\_id=1854&PPN=P0301.4&SCH=5370](http://beta2.statssa.gov.za/?page_id=1854&PPN=P0301.4&SCH=5370) [Accessed on 12 November 2013].
- STATISTICS SOUTH AFRICA. 2012. Income and expenditure survey (IES) 2010/2011. Available from: [http://www.statssa.gov.za/news\\_archive/press\\_statements/IES\\_%202010\\_2011\\_Press%20Statement\\_6\\_November\\_2012.pdf](http://www.statssa.gov.za/news_archive/press_statements/IES_%202010_2011_Press%20Statement_6_November_2012.pdf) [Accessed on 30 November 2013].
- STATSOFT. 2013. Electronic Statistics Textbook. Available from: <http://www.statsoft.com/textbook/>. [Accessed on 29 November 2013].
- STEENKAMP, J-B.E.B. & BURGESS, S.M. 2002. Optimum stimulation level and exploratory consumer behaviour in an emerging consumer market. *International Journal of Research in Marketing*, 19(2): 131-150.
- STEG, L., DREIJERINK, L. & ABRAHAMSE, W. 2005. Factors influencing the acceptability of energy policies: A test of VBN theory. *Journal of Environmental Psychology*, 25: 415-425.

- STEG, L. & VLEK, C. 2009. Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, 29: 309–317.
- STERN, P.C. 2000. Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56: 407-424.
- STERN, P.C. & DIETZ, T. 1994. The value basis of environmental concern. *Journal of Social Issues*, 50: 65-84.
- STERN, P.C., DIETZ, T., ABEL, T., GUAGNANO, A.G. & KALOF, L. 1999. A Value-Belief-Norm theory of support for social movement: The case of environmentalism. *Human Ecology Review*, 6: 81-95.
- STERN, P.C., DIETZ, T. & BLACK, J.S. 1986. Support for environmental protection: The role of moral norms. *Population and Environment*, 8(3/4): 204-222.
- STERN, P.C., DIETZ, T. & GUAGNANO, A.G. 1995. The New Ecological Paradigm social-psychological context. *Environment and Behavior*, 27(6): 723-743.
- STERN, P.C., DIETZ, T. & KALOF, L. 1993. Value orientations, gender and environmental concern. *Environment and Behavior*, 25: 322-348.
- STRYDOM, H. 2011a. Sampling in the quantitative paradigm. In: DE VOS, A.S., STRYDOM, H., FOUCHÉ, C.B. & DELPORT, C.S.L. *Research at grass roots*. 4<sup>th</sup> ed. Pretoria: Van Schaik, p. 222-235.
- STRYDOM, H. 2011b. Ethical aspects of research in the social sciences and human service professions. In: DE VOS, A.S., STRYDOM, H., FOUCHÉ, C.B. & DELPORT, C.S.L. *Research at grass roots*. 4<sup>th</sup> ed. Pretoria: Van Schaik, p. 113-130.
- STRYDOM, H. & DELPORT, C.S.L. 2011. Sampling and pilot study in qualitative research. In: DE VOS, A.S., STRYDOM, H., FOUCHÉ, C.B. & DELPORT, C.S.L. *Research at grass roots*. 4<sup>th</sup> ed. Pretoria: Van Schaik, p. 390-396.
- SWAMI, V., CHAMORRO-PREMUZIC, T., SNELGAR, R. & FURNHAM, A. 2010. Egoistic, altruistic, and biospheric environmental concerns: A path analytic investigation of their determinants. *Scandinavian Journal of Psychology*, 51: 139-145.
- TAYLOR, D.E. 1989. Blacks and the environment. Toward an explanation of the concern and action gap between Blacks and Whites. *Environment and Behavior*, 21(2): 175-205.
- THE FREE DICTIONARY. 2013. Throw away. Available from: <http://www.thefreedictionary.com/threw+away> [Accessed 28 November 2013].
- THE QUOTATIONS PAGE. 2013. Quotations by author: Eric Hoffer (1902-1983). Available from: [http://www.quotationspage.com/quotes/Eric\\_Hoffer/](http://www.quotationspage.com/quotes/Eric_Hoffer/) [Accessed 22 October 2013].
- THØGERSEN, J. 1999. The ethical consumer. Moral norms and packaging choice. *Journal of Consumer Policy*, 22: 439-400.
- THØGERSEN, J. 2005. How may consumer policy empower consumers for sustainable lifestyles? *Journal of Consumer Policy*, 28(2): 143-178.
- THØGERSEN, J. 2006. Norms for environmentally responsible behaviour: An extended taxonomy. *Journal of Environmental Psychology*, 26: 247-261.

- TREEVOLUTION. 2013. Guide to recycling in South Africa. Available from: <http://treevolution.co.za/guide-to-recycling-in-sa/> [Accessed 29 October 2013].
- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA). 2011. Municipal solid waste generation, recycling and disposal in the United States: Facts and figures for 2011. Available from: <http://www.epa.gov/osw/nonhaz/municipal/msw99.htm> [Accessed 21 October 2013].
- VAN LIERE, K. D. & DUNLAP, R. E. 1980. The social bases of environmental concern: A review of hypotheses, explanations and empirical evidence. *The Public Opinion Quarterly*, 44(2), 181–197.
- VINING, J. & EBREO, A. 1990. What makes a recycler? A comparison of recyclers and non-recyclers. *Environment and Behavior*, 22(1): 55-73.
- VINSON, D.E., SCOTT, J.E. & LAMONT, L.M. 1977. The role of personal values in marketing and consumer behavior. *Journal of Marketing*, 41(2): 44-50, April.
- WALL, R., DEVINE-WRIGHT, P. & MILL, G.A. 2007. Comparing and combining theories to explain proenvironmental intentions: the case of commuting-mode choice. *Environmental and Behavior*, 39: 731-753.
- WASTE ONLINE. 2004. Textiles – “The Wasteguide”. Available from: [http://dl.dropboxusercontent.com/u/21130258/resources/Wasteguide/mn\\_wastetypes\\_textiles.html](http://dl.dropboxusercontent.com/u/21130258/resources/Wasteguide/mn_wastetypes_textiles.html) [Accessed 20 October 2013].
- WEBSTER, F.E. 1975. Determining the characteristics of a socially conscious consumer. *Journal of Consumer Research*, 2: 188-196.
- WINAKOR, G. 1969. The process of clothing consumption. *Journal of Home Economics*, 61(8): 629-634.
- WORLD WIDE FUND FOR NATURE (WWF). 2012. The living planet report 2012. Available from: [http://www.awsassets.panda.org/downloads/1\\_lpr\\_2012\\_online\\_full\\_size\\_single\\_pages\\_final\\_1250516.pdf](http://www.awsassets.panda.org/downloads/1_lpr_2012_online_full_size_single_pages_final_1250516.pdf). [Accessed 27 November 2013].
- WORLD WIDE FUND FOR NATURE (WWF). 2013. Recycle. Available from: [http://www.wwf.org.za/act\\_now/green\\_living/recycle/](http://www.wwf.org.za/act_now/green_living/recycle/) [Accessed 29 October 2013].
- YOUR DICTIONARY. 2013. Available from: <http://www.yourdictionary.com/landfill> [Accessed 9 October 2013].
- ZELEZNY, L.C., CHUA, P-P. & ALDRICH, C. 2000. Elaborating on gender differences in environmentalism. *Journal of Social Issues*, 56 (3): 443–457.

---

# Addendum A: Questionnaire

---



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA  
Faculty of Natural and Agricultural Sciences

Department of Consumer Science

Dear Respondent

I am currently enrolled for the M Consumer Science degree at the University of Pretoria under the guidance of Dr. Arda Retief and Ms. Nadine Sonnenberg. The subject of my research dissertation is to evaluate the role of values, beliefs and norms in female consumers' clothing disposal behaviour.

You would be of great assistance to me if you could complete the following questionnaire.

Please fill in the questionnaire anonymously. At no time will any attempt be made to identify you. Your answers will be bulked with those obtained from other respondents and appropriate statistical analysis will be performed on the bulked data.

The questionnaire consists of five sections. Please read the instructions for each section carefully before you indicate your answer: **every question must be answered for the questionnaire to be useful**. The questions are spread over four pages to allow for ease of completion; it will take approximately 15 minutes to complete.

With the questionnaire we will attempt to collect data for descriptive and exploratory purposes through which your clothing disposal behaviour will be determined. By answering the questions I will assume that you have consented to participate in this research endeavour.

**Please answer the questions honestly and with sincerity.**

Thank you very much for your time and cooperation.

Yours sincerely,



Jonette Meyer  
April 2013



**Please complete the whole questionnaire**

Respondent number

N			
---	--	--	--

**Section 1: Demographic information**

Please answer the questions by **circling** the number in the shaded block provided:

		Years		
1. What was your age at your last birthday?				V1
2. Please indicate your marital status				V2
Single		1		
Married		2		
Separated, but still legally married		3		
Divorced		4		
Couple living together		5		
Widow		6		
3. How many children reside with you in your home?				V3
4. In terms of the Employment Equity Act, to which population group do you belong?				V4
Asian		1		
Black		2		
Coloured		3		
White		4		
Other: please specify				
5. What is your approximate total monthly <b>household income</b> ?				V5
Less than R 5000		1		
R 5000 or more, but less than R 10 000		2		
R10 000 or more, but less than R20 000		3		
R20 000 or more, but less than R30 000		4		
R30 000 or more, but less than R40 000		5		
More than R 40 000		6		
6. What is your highest level of education?				V6
Lower than Grade 12		1		
Grade 12		2		
Grade 12 and Degree/Diploma		3		
7. Please provide your area of residence within the greater Tshwane Metropolitan area. Please write your area of residence in the shaded area provided				V7

**Section 2:**

8. Please indicate your level of agreement with the following statements. <i>Answer the questions by circling the number in the appropriate block</i>	Strongly disagree	Mildly disagree	Mildly agree	Strongly agree	
		1	2	3	4
Social power is an important life accomplishment	1	2	3	4	V8
Everybody should have equal opportunities	1	2	3	4	V9
People should do their utmost to prevent pollution	1	2	3	4	V10
People should value a world at peace	1	2	3	4	V11
Human beings should live in harmony with other species	1	2	3	4	V12
Money is an important part of life	1	2	3	4	V13
Humans should live in harmony with nature	1	2	3	4	V14
People with authority have the right to lead others	1	2	3	4	V15
People should value social justice	1	2	3	4	V16

	Strongly disagree	Mildly disagree	Mildly agree	Strongly agree		
It is important to be able to influence others	1	2	3	4	V17	
We must preserve nature	1	2	3	4	V18	
The welfare of others is important	1	2	3	4	V19	
All people should be seen as equals	1	2	3	4	V20	
Being in control of others is of great importance	1	2	3	4	V21	
The earths' natural resources are limited	1	2	3	4	V22	
Humans should consider the earth valuable	1	2	3	4	V23	
Conflict prevents us from living in peace	1	2	3	4	V24	
Material possessions are important	1	2	3	4	V25	
To have a position of authority is important	1	2	3	4	V26	
We should care for the weak	1	2	3	4	V27	
It is necessary for people to live in unity with nature	1	2	3	4	V28	
We need to be helpful towards others	1	2	3	4	V29	
Protecting the environment is important	1	2	3	4	V30	
The impact a person has on other people is important	1	2	3	4	V31	
Individuals should be encouraged to protect natural resources	1	2	3	4	V32	
The ability to control others is important	1	2	3	4	V33	
Each person should consider other people as equals	1	2	3	4	V34	
Having money is of great value	1	2	3	4	V35	
We should value nature	1	2	3	4	V36	
Conflict is pointless	1	2	3	4	V37	
Correcting injustice is essential	1	2	3	4	V38	
To be a leader is an important goal in life	1	2	3	4	V39	
Human beings should view themselves as part of nature	1	2	3	4	V40	
It is necessary for every human being to care for the environment	1	2	3	4	V41	
Helping others is praiseworthy	1	2	3	4	V42	
The impact you have on your daily events is of great consequence	1	2	3	4	V43	
To have dominance in a social situation is admirable	1	2	3	4	V44	
One person is not more important than another	1	2	3	4	V45	
Pollution of our natural resources must be prevented	1	2	3	4	V46	
Everybody should strive to achieve a world free from war	1	2	3	4	V47	
Human beings must respect the natural environment	1	2	3	4	V48	
To be wealthy is an important goal to strive for	1	2	3	4	V49	
We must adapt to fit in with nature	1	2	3	4	V50	
To be in command of others is admirable	1	2	3	4	V51	
Fairness among people is important	1	2	3	4	V52	
It is necessary for a person to be able to influence situations	1	2	3	4	V53	
People should safeguard the environment to minimize further damage	1	2	3	4	V54	
Our actions should benefit others	1	2	3	4	V55	

**Section 3**

9. Please indicate the level to which you agree or disagree with the following statements:	Strongly disagree	Mildly disagree	Mildly agree	Strongly agree	
We are approaching the limit of the number of people the earth can support	1	2	3	4	V56
Humans have the right to modify the natural environment to suit their needs	1	2	3	4	V57
When humans interfere with nature it has disastrous consequences	1	2	3	4	V58
Human ingenuity will ensure that we do not make the earth uninhabitable	1	2	3	4	V59
Humans are severely abusing the earth	1	2	3	4	V60
The earth has plenty of natural resources if we just learn how to develop them	1	2	3	4	V61
Plants and animals have as much right as humans to exist	1	2	3	4	V62
The balance of nature is strong enough to cope with the impacts of modern industrial nations	1	2	3	4	V63
Despite our special abilities humans are still subject to the laws of nature	1	2	3	4	V64
The so-called "ecological crisis" facing humankind has been greatly exaggerated	1	2	3	4	V65
The earth is like a spaceship with very limited room and resources	1	2	3	4	V66
Humans were meant to rule over the rest of nature	1	2	3	4	V67
The balance of nature is very delicate and easily upset	1	2	3	4	V68
Humans will eventually learn enough about how nature works to be able to control it.	1	2	3	4	V69
If things continue on their present course, we will soon experience a major ecological catastrophe	1	2	3	4	V70

**Section 4**

10. Please indicate the level to which you agree or disagree with the following statements:	Strongly disagree	Mildly disagree	Mildly agree	Strongly agree	
Everyone should do everything they can to reduce waste problems	1	2	3	4	V71
Clothing waste has a negative impact on the environment	1	2	3	4	V72
I feel morally obligated to dispose of old clothing items in an environmentally friendly manner	1	2	3	4	V73
Even though my contribution is small, I can make a difference in solving waste problems	1	2	3	4	V74
The reduction of clothing waste helps reduce land-filling	1	2	3	4	V75
I feel personally obligated to reduce my clothing waste	1	2	3	4	V76
My efforts at waste reduction are just as important as industries' waste reduction efforts	1	2	3	4	V77
Overflowing land-fill sites are a problem	1	2	3	4	V78
I feel morally obligated to recycle, regardless of what others say	1	2	3	4	V79
My involvement in environmentally friendly waste disposal activities is important	1	2	3	4	V80
Environmental quality will improve if everyone recycles old clothes.	1	2	3	4	V81
When I buy new clothing, I feel morally obligated to recycle some old clothes	1	2	3	4	V82
We cannot only rely on the government to solve waste problems, each individual is equally responsible	1	2	3	4	V83
Participation in recycling activities makes a contribution towards solving waste problems	1	2	3	4	V84
I feel obligated to consider the environment in my daily behaviour	1	2	3	4	V85
I would be a better person if I recycle more often	1	2	3	4	V86
In principle, individuals in their own capacity can reduce the amount of waste they create	1	2	3	4	V87

<b>Section 5</b>					
11. Please indicate the level to which you agree or disagree with the following statements:	Strongly disagree	Mildly disagree	Mildly agree	Strongly agree	
I sell my clothing for money	1	2	3	4	V88
It is very important to me to donate my clothes to charity for the needy	1	2	3	4	V89
I re-use clothing for other purposes to get the most out of them	1	2	3	4	V90
I recycle old clothing items to contribute to the conservation of the environment	1	2	3	4	V91
I throw old clothing items in the dustbin	1	2	3	4	V92
I sell most of my unwanted clothes at second-hand stores for economic reasons	1	2	3	4	V93
I give away my clothing to help others	1	2	3	4	V94
I use worn out clothing for rags to save money	1	2	3	4	V95
I trade clothing at second-hand stores to save money	1	2	3	4	V96
If clothing recycle bins are available, I will make use of them to dispose of old garments in an eco-friendly manner	1	2	3	4	V97
I throw away unwanted garments	1	2	3	4	V98
I sell my unwanted clothes rather than throwing them away because I'm concerned about waste	1	2	3	4	V99
I support recycling efforts that re-use old clothing items to develop new eco-friendly products	1	2	3	4	V100
I re-use clothing because it can significantly benefit the environment	1	2	3	4	V101
I trade my old clothing for other necessities	1	2	3	4	V102
I donate my clothes to charity to do my part in solving the environmental problem	1	2	3	4	V103
I burn unwanted clothing	1	2	3	4	V104
I sell my old clothing for environmental reasons	1	2	3	4	V105
Donating to charity is a good way of recycling old clothes	1	2	3	4	V106
I am currently involved in recycling efforts (such as recycling of glass, paper, aluminium etc.) to do my part for the environment	1	2	3	4	V107
I try to use old clothing for craft purposes because throwing away significantly contributes to the waste problem	1	2	3	4	V108
I resell my unwanted clothing that is in good condition to benefit others	1	2	3	4	V109
I throw old clothing in bags for waste collection because that is the only way I feel comfortable disposing of it	1	2	3	4	V110

Thank you very much for your time

# Addendum B:

## Procrustes rotation

Value Item	Factor1	Factor2	Factor3
To have a position of authority is important	<b>0.76163</b>	-0.09774	0.07874
To be in command of others is admirable	<b>0.75594</b>	0.11858	-0.17141
The ability to control others is important	<b>0.73008</b>	-0.00015	-0.17889
Being in control of others is of great importance	<b>0.71640</b>	-0.01744	-0.12312
To have dominance in a social situation is admirable	<b>0.71460</b>	0.09168	-0.05469
To be a leader is an important goal in life	<b>0.66689</b>	0.12377	0.11597
To be wealthy is an important goal to strive for	<b>0.64079</b>	-0.15366	0.03891
Material possessions are important	<b>0.63768</b>	-0.06254	0.05783
Social power is an important life accomplishment	<b>0.54494</b>	-0.14582	0.25921
It is necessary for a person to be able to influence situations	<b>0.53121</b>	0.20804	-0.03451
Having money is of great value	<b>0.48277</b>	-0.30589	0.18293
It is important to be able to influence others	<b>0.47209</b>	0.11714	-0.03069
Money is an important part of life	<b>0.44728</b>	-0.18017	0.23021
People with authority have the right to lead others	<b>0.42581</b>	0.29020	-0.12009
The impact a person has on other people is important	<b>0.23178</b>	0.17809	0.17526
People should value social justice	0.23145	<b>0.26042</b>	0.14424
Each person should consider other people as equals	-0.02167	<b>0.85368</b>	-0.20143
All people should be seen as equals	-0.00900	<b>0.76236</b>	-0.10135
Fairness among people is important	-0.06070	<b>0.65529</b>	0.03262
We should care for the weak	0.06515	<b>0.62478</b>	0.06294
Our actions should benefit others	0.11752	<b>0.59320</b>	-0.11683
The welfare of others is important	0.01521	<b>0.51331</b>	0.17896
Correcting injustice is essential	-0.03576	<b>0.51226</b>	0.07069
We need to be helpful towards others	-0.08791	<b>0.49029</b>	0.22735
One person is not more important than another	-0.01825	<b>0.48723</b>	-0.04616
Helping others is praiseworthy	0.12009	<b>0.47734</b>	-0.02561
People should value a world at peace	-0.00200	<b>0.39460</b>	0.33999
Everybody should have equal opportunities	-0.10636	<b>0.37237</b>	0.13421
Everybody should strive to achieve a world free from war	-0.01255	<b>0.36593</b>	0.32764
The impact you have on your daily events is of great consequence	0.13105	<b>0.34629</b>	0.24325
Conflict prevents us from living in peace	0.11806	<b>0.32142</b>	0.24680
Conflict is pointless	0.19383	<b>0.28197</b>	-0.05570
Protecting the environment is important	0.04319	-0.12465	<b>0.90700</b>
We must preserve nature	-0.00776	-0.06794	<b>0.80291</b>
It is necessary for every human being to care for the environment	0.03788	0.09132	<b>0.79653</b>
Individuals should be encouraged to protect natural resources	-0.06092	-0.01240	<b>0.78609</b>
Human beings must respect the natural environment	0.00282	0.06000	<b>0.74478</b>
We should value nature	0.05760	0.02864	<b>0.73632</b>
Pollution of our natural resources must be prevented	-0.01030	0.00654	<b>0.69655</b>
Humans should live in harmony with nature	0.00410	0.05486	<b>0.68286</b>
Humans should consider the earth valuable	0.05555	0.08485	<b>0.66064</b>
People should do their utmost to prevent pollution	-0.08916	-0.05381	<b>0.56613</b>
People should safeguard the environment to minimize further damage	0.04773	0.26193	<b>0.55929</b>
Human beings should live in harmony with other species	-0.02421	0.17260	<b>0.54313</b>
Human beings should view themselves as part of nature	0.15580	0.16212	<b>0.52776</b>
It is necessary for people to live in unity with nature	0.07463	0.22158	<b>0.49998</b>
The earths' natural resources are limited	0.06096	-0.03539	<b>0.44324</b>
We must adapt to fit in with nature	0.21889	0.18878	<b>0.42080</b>

---

## Addendum C: Model indicating the division of the three value orientations

---

Biospheric Values	Frequency	%	Cumulative Frequency	Cumulative %
1.0526315789	1	0.33	1	0.33
1.4736842105	1	0.33	2	0.65
2	1	0.33	3	0.98
2.0526315789	1	0.33	4	1.31
2.4210526316	1	0.33	5	1.63
2.5789473684	1	0.33	6	1.96
2.6315789474	1	0.33	7	2.29
2.6842105263	1	0.33	8	2.61
2.8421052632	1	0.33	9	2.94
2.8947368421	1	0.33	10	3.27
3	2	0.65	12	3.92
3.0526315789	3	0.98	15	4.90
3.1052631579	4	1.31	19	6.21
3.1578947368	3	0.98	22	7.19
3.2105263158	3	0.98	25	8.17
3.2631578947	4	1.31	29	9.48
3.3157894737	2	0.65	31	10.13
3.3684210526	6	1.96	37	12.09
3.4210526316	9	2.94	46	15.03
3.4736842105	7	2.29	53	17.32
3.5263157895	4	1.31	57	18.63
3.5789473684	8	2.61	65	21.24
3.6315789474	15	4.90	80	26.14
3.6842105263	16	5.23	96	31.37
3.7222222222	3	0.98	99	32.35
3.7368421053	13	4.25	112	36.60
3.7894736842	25	8.17	137	44.77
3.8333333333	1	0.33	138	45.10
3.8421052632	27	8.82	165	53.92
3.8947368421	35	11.44	200	65.36
3.9444444444	1	0.33	201	65.69
3.9473684211	48	15.69	249	81.37
4	57	18.63	306	100.00

Egoistic values	Frequency	%	Cumulative Frequency	Cumulative %
1	1	0.33	1	0.33
1.266666667	2	0.65	3	0.98
1.4	1	0.33	4	1.31
1.533333333	1	0.33	5	1.63
1.6	1	0.33	6	1.96
1.733333333	1	0.33	7	2.29
1.8	3	0.98	10	3.27
1.866666667	3	0.98	13	4.25
1.933333333	8	2.61	21	6.86
2	6	1.96	27	8.82
2.066666667	5	1.63	32	10.46
2.133333333	7	2.29	39	12.75
2.2	6	1.96	45	14.71
2.266666667	10	3.27	55	17.97
2.333333333	18	5.88	73	23.86
2.4	11	3.59	84	27.45
2.4285714286	1	0.33	85	27.78
2.466666667	10	3.27	95	31.05
2.533333333	18	5.88	113	36.93
2.5714285714	1	0.33	114	37.25
2.6	26	8.50	140	45.75
2.666666667	13	4.25	153	50.00
2.733333333	13	4.25	166	54.25
2.8	14	4.58	180	58.82
2.866666667	18	5.88	198	64.71
2.9285714286	1	0.33	199	65.03
2.933333333	13	4.25	212	69.28
3	10	3.27	222	72.55
3.066666667	15	4.90	237	77.45
3.133333333	14	4.58	251	82.03
3.2	12	3.92	263	85.95
3.2142857143	1	0.33	264	86.27
3.266666667	5	1.63	269	87.91
3.333333333	6	1.96	275	89.87
3.3571428571	1	0.33	276	90.20
3.4	8	2.61	284	92.81
3.466666667	3	0.98	287	93.79
3.533333333	5	1.63	292	95.42
3.6	4	1.31	296	96.73
3.666666667	3	0.98	299	97.71
3.733333333	4	1.31	303	99.02
3.8	1	0.33	304	99.35
3.866666667	1	0.33	305	99.67
4	1	0.33	306	100.00

Altruistic values	Frequency	%	Cumulative Frequency	Cumulative %
1.3571428571	1	0.33	1	0.33
1.5714285714	1	0.33	2	0.65
1.6923076923	1	0.33	3	0.98
2.2142857143	1	0.33	4	1.31
2.2857142857	1	0.33	5	1.63
2.4285714286	1	0.33	6	1.96
2.5714285714	1	0.33	7	2.29
2.6428571429	3	0.98	10	3.27
2.7142857143	1	0.33	11	3.59
2.7857142857	2	0.65	13	4.25
2.8571428571	3	0.98	16	5.23
2.9285714286	4	1.31	20	6.54
3	5	1.63	25	8.17
3.0714285714	10	3.27	35	11.44
3.1428571429	16	5.23	51	16.67
3.2142857143	12	3.92	63	20.59
3.2857142857	12	3.92	75	24.51
3.3076923077	1	0.33	76	24.84
3.3571428571	21	6.86	97	31.70
3.3846153846	1	0.33	98	32.03
3.4285714286	20	6.54	118	38.56
3.5	17	5.56	135	44.12
3.5384615385	1	0.33	136	44.44
3.5714285714	23	7.52	159	51.96
3.6428571429	27	8.82	186	60.78
3.6923076923	2	0.65	188	61.44
3.7142857143	30	9.80	218	71.24
3.7692307692	1	0.33	219	71.57
3.7857142857	36	11.76	255	83.33
3.8571428571	23	7.52	278	90.85
3.9285714286	16	5.23	294	96.08
4	12	3.92	306	100.00



---

Addendum D:  
Ethical compliance

---



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

**ETHICS COMMITTEE**

Faculty of Natural and Agricultural Sciences

24 April 2013

Ms J Meyer

Department of Consumer Sciences

University of Pretoria

Pretoria

0002

Dear Ms Meyer

**EC130410-025:** The role of the values, beliefs and norms in female consumers' apparel disposal behaviour

This protocol conforms to the requirements of the NAS Ethics Committee.

Kind regards



Prof NH Casey

**Chairman: Ethics Committee**

Agriculture Building 10-20  
University of Pretoria  
Private bag X20, Hatfield 0028  
Republic of South Africa

Tel: 012 420 4107  
Fax: 012 420 3290

[ethics.nas@up.ac.za](mailto:ethics.nas@up.ac.za)

---

## Addendum E: Agreement to plagiarism-free research

---

FORM A

UNIVERSITY OF PRETORIA  
FACULTY NATURAL AND AGRICULTURAL SCIENCES  
DEPARTMENT CONSUMER SCIENCE

The Department CONSUMER SCIENCE places specific emphasis on integrity and ethical behaviour with regard to the preparation of all written work to be submitted for academic evaluation.

Although academic personnel will provide you with information regarding reference techniques as well as ways to avoid plagiarism, you also have a responsibility to fulfil in this regard. Should you at any time feel unsure about the requirements, you must consult the lecturer concerned before you submit any written work.

You are guilty of plagiarism when you extract information from a book, article or web page without acknowledging the source and pretend that it is your own work. In truth, you are stealing someone else's property. This doesn't only apply to cases where you quote verbatim, but also when you present someone else's work in a somewhat amended format (paraphrase), or even when you use someone else's deliberation without the necessary acknowledgement. You are not allowed to use another student's previous work. You are furthermore not allowed to let anyone copy or use your work with the intention of presenting it as his/her own.

Students who are guilty of plagiarism will forfeit all credit for the work concerned. In addition, the matter can also be referred to the Committee for Discipline (Students) for a ruling to be made. Plagiarism is considered a serious violation of the University's regulations and may lead to suspension from the University.

For the period that you are a student at the Department CONSUMER SCIENCE, the under-mentioned declaration must accompany all written work to be submitted. No written work will be accepted unless the declaration has been completed and attached.

I (full names) JONETTE MEYER  
Student number 270 172 15  
Subject of the work MCONSUMER SCIENCE

**Declaration**

1. I understand what plagiarism entails and am aware of the University's policy in this regard.
2. I declare that this DISSERTATION (e.g. essay, report, project, assignment, dissertation, thesis etc) is my own, original work. Where someone else's work was used (whether from a printed source, the internet or any other source) due acknowledgement was given and reference was made according to departmental requirements.
3. I did not make use of another student's previous work and submitted it as my own.
4. I did not allow and will not allow anyone to copy my work with the intention of presenting it as his or her own work.

Signature 