Consumer Clothing Disposal Behaviour: A Comparative Study

Abstract

Fast fashion retailing is leading consumers towards an increased rate of purchasing and the trend to keep clothing for an ever shorter time with the resulting rise in clothing disposal. The aim of this paper is to empirically explore antecedents of two methods of sustainable clothing disposal behaviour in two countries: donating to charities and giving away to family and friends. Using data from females located in Australia and Chile, the authors test the proposed model with structural equation modelling (SEM). The results of this study show that consumer recycling behaviour is a strong and direct driver of donating to charity. In addition, results find that consumer awareness of the environment and consumer age affect donating behaviour. The findings have value for fast fashion retailers, marketers, environmental activists, ecological researchers, charity institutions and public policy makers.

Introduction

Fast fashion retailers such as H&M, Zara and Topshop are introducing new lines every two to three weeks at very low prices, to maximise sales through impulse purchasing (McAfee et al., 2004; Foroohar and Stabe, 2005). As a result, many consumers expect constant change so new products have to be available on a frequent basis (Bruce and Daly, 2006). With the advent of small but frequent collections of merchandise, these fast fashion retailers are encouraging consumers to visit their stores and dispose of their clothing more often, following the idea of "here today, gone tomorrow" (Bhardwaj and Fairhurst, 2010).

During the 1970's and 1980's, there was increased concern with environmental and ethical issues among marketing scholars (Anderson and Cunningham, 1972; Doane, 2001; Sanne, 2002). This has encouraged new areas of research related to the effect of the environment on consumer behaviour. In addition, several international conferences provided a forum for

discussion (Strong, 1996; Robins and Roberts, 1997; Kalafatis et al., 1999; Jones et al., 2005). One of the main themes that emerged from this was that of sustainable consumption (Jackson, 2004) which is defined as 'consumption that supports the ability of current and future generations to meet their material and other needs, without causing irreversible damage to the environment or loss of function in natural systems' (Jackson and Michaelis, 2003, p. 14). Creating meaningful progress towards sustainable consumption requires the acceptance of responsible and sustainable consumption and disposal behaviour (Peattie and Peattie, 2009). This applies both to industrialised as well as less industrialised countries that have rapid growing populations.

Despite the interest in environmental issues, little empirical research has addressed the effect of environmental attitudes on the purchasing process of clothing and textiles (Butler and Francis, 1997). This aspect of consumer behaviour is a new area of research (Holbrook, 1995; de Coverly et al., 2003), and involves the pre-purchase and post-purchase components (Jacoby et al., 1977; Hiller, 2010). Post waste is defined as any type of garment that the owner no longer needs and decides to discard (Chen and Burns, 2006; Hawley, 2006).

The post-purchase component of the clothing consumption process involves whether clothing is re-used, recycled or simply discarded or destroyed (Ha-Brookshire and Hodges 2009).These textile products are sometimes given to charities or passed on to family or friends, but are also discarded and end up in municipal landfills. Although macro marketing advocates sustainable consumption as a means for sustainable development, there is little consensus as to how this is to be achieved.

Textile disposal is an increasing problem in the world. For example, during 1995 the denim industry generated more than 70 million kilos of scrap in landfills in the U.S. (McCurry, 1996). Furthermore, unrecovered textile waste contributed to approximately 4.5% of U.S. landfills (Hammer, 1993). In the UK, there are annually more than 100 million tons

of waste resulting from households and commerce (Defra, 2007). Of these, one million tons of textiles end up in landfill sites every year. In other industrialized countries such as Australia, a significant amount of textile waste from manufacturers and consumers is sent to landfill every year at great cost to the industry and tax payers (Caulfield, 2009). Furthermore, the retrieval of post-consumer textile waste (mainly used clothing) is predominantly undertaken by charities in Australia, in contrast to other developed countries, where there are more private textile waste collectors, merchants and traders (Caulfield, 2009). Clothing is disposed through donation bins located across the country, as well as drop-offs direct to charity shops. Once collected, the textiles are sorted and sent to those in need in the community, or sold through shops to generate capital to fund social problems (Caulfield, 2009). However, there is estimation that 12.5 million kilos in Australia are sent to landfill.

Specifically in the marketing field, concern about the environment and sustainable marketing among academics and consumers has been increasing since 1970s (Van Dam and Apeldoorn, 1996). Over the years, consumers have realised that their purchasing behaviour can have a direct impact on several elements of the environment (Montoro-Rios et al., 2006). As a result, some consumers are considering environmental issues when shopping such as checking for labels that use recycled materials and purchasing sustainable products (Laroche et al., 2001). Concern for the environment has also been integrated into the marketing discipline by incorporating environmental elements into the marketing strategy to remain competitive (e.g., Drumwright, 1994; Menon and Menon, 1997). Moreover, previous studies have examined consumer recycling behaviour of paper, glass and plastic (Jahre, 1995; Anderson and Brodin, 2005; Fraj and Martinez, 2006; Moczygemba and Smaka-Kincl, 2007). However, the literature has neglected important issues to make consumption more sustainable, including the importance on non-purchase elements of consumer behaviour such as product use and disposal (Peattie and Peattie, 2009).

Although some studies have assessed consumer product disposal tendencies (Harrell and McConocha, 1992), and the effects of environmental attitudes on apparel purchasing behaviour (Butler and Francis, 1997), only a small number of studies have examined the disposal behaviour of clothing (Shim, 1995; Domina and Koch, 1999; Birtwistle and Moore, 2006; Morgan and Birtwistle, 2009). According to these studies, methods by which consumers dispose of their clothing are donating to charity, giving away to family or friends, selling through second hand shops or eBay, and throwing away into rubbish bins (Domina and Koch, 1999; Birtwistle and Moore, 2006). Specifically, donating to charities and giving away to family and friends are considered by consumers the most common methods of sustainable clothing disposal (Birtwistle and Moore, 2006). These methods avoid the punitive cost of landfills, and move clothing to areas of the world where it is most needed (Hawley, 2006).

Shim's (1995) study looked at the relationship between consumer environmental attitudes and clothing disposal patterns. The author found that the environmental attitude of consumers had a strong influence on disposal methods such as recycling. Other studies have also found that consumer knowledge of disposal options and waste–recycling have an impact on recycling methods (Daneshvary et al., 1998; Domina and Koch, 1999). However, it is still not clear which are the main drivers that lead consumers to choose different methods of disposal behaviour, and if these vary across countries with different levels of industrialization. Thus, the main objective of this study is to explore antecedents of the two methods of sustainable clothing disposal behaviour mentioned above: donating to charity or giving away to family or friends. This study is conducted in two countries with different levels of industrialization in order to identify plausible country differences on clothing disposal behaviour (Bekin et al., 2007). Figure 1 presents our conceptual model and the next section will discuss the hypotheses.

Insert Figure 1 here

Hypotheses Development

Concern about waste disposal has inspired a substantial amount of academic research and several studies have tried to determine how to encourage consumer recycling behaviours (Biswas et al., 2000). However, recycling behaviour of clothing may differ from recycling paper, glass or aluminium, and researchers have found that disposal methods vary significantly across product categories implying that studies should be product specific (Jacoby et al., 1977). For clothing products, recycling behaviour is found to be closely linked to donating to charities (Morgan and Birtwistle, 2009) and curb side textile recycling (Daneshvary et al., 1998). This means that consumers that usually recycle plastic, glass, or paper, are more likely to recycle their fashion garments by donating to charities and charity bins. However, it is not clear if general recycling behaviour is also related to giving away to family or friends, which is another sustainable method of recycling clothing products. This needs to be tested, thus we propose the following hypotheses:

Hypothesis 1a: Consumer recycling behaviour is positively related to disposing of clothing by 'giving away' to family or friends.

Hypothesis 1b: Consumer recycling behaviour is positively related to disposing of clothing by 'donating to charities'.

Authors agree that knowledge and attitudes are better predictors of sustainable behaviour (Chan, 1999; Fraj and Martinez, 2006). For example, people that emphasize respect and concern towards the environment are more ecological in their behaviour (Fraj and Martinez, 2006). For clothing disposal, Morgan and Birtwistle (2009) found a significant positive relationship between consumer awareness of the environment and textile donation. This implies that consumers that are worried about the environment are more likely to make an effort to dispose of their garments in a way that does not damage the environment.

Furthermore, awareness of the environment has also been found an antecedent of general recycling behaviour (Morgan and Birtwistle, 2009). Thus, the following hypotheses are stated:

Hypothesis 2a: *Consumer awareness of the environment is positively related to disposing of clothing by 'giving away' to family or friends.*

Hypothesis 2b: *Consumer awareness of the environment is positively related to disposing of clothing by 'donating to charities'.*

Hypothesis 2c: *Consumer awareness of the environment is positively related to consumer recycling behaviour.*

The literature suggests that demographic factors may affect environmental concern (Butler and Francis, 1997). Previous studies have attempted to profile recyclers and non-recyclers using demographic variables such as age, education, and gender. In general, a positive relationship has been found between age and donation to charities. Drawing on the literature on consumer environmental behaviour, Burke et al. (1978) profiled consumers based on their general disposal behaviour, and found that younger consumers were more likely to dispose of products with little reference to further use or environmental impact. Furthermore, Butler and Francis (1997) found that age had a positive relationship with pro-recycling behaviour. Thus, the following hypotheses need to be tested:

Hypothesis 3a: *Consumer age is positively related to disposing of clothing by 'giving away' to family or friends.*

Hypothesis 3b: *Consumer age is positively related to disposing of clothing by 'donating to charities'.*

Hypothesis 3c: *Consumer age is positively related to consumer recycling behaviour.*

Methodology

We collected data through a survey instrument which was administered to female respondents in two countries: Australia and Chile. These countries were chosen because they are fashion leaders in their own regions but comprise different levels of industrialisation. Moreover, females were targeted because women purchase fashion garments more frequently than men (Bhardwaj and Fairhurst, 2010). Primary data was collected during 2008 using a snowball sampling procedure. This sampling approach has been used in previous research due to the difficulty in obtaining samples in countries with an infrastructure that does not support the collection of data using probability-sampling approaches (Cleveland et al., 2009). In Australia, an online survey was sent to a convenience sample of 360 females located in Brisbane, which led to 239 usable questionnaires, with a 66 per cent response rate. In Chile, an online survey was sent to a convenience sample of 450 females living in Santiago, resulting in 249 questionnaires being analysed, a 53 per cent response rate. The response profile is presented in Table 1.

Insert Table 1 here

The questionnaire included four sections with measurement scales indicating respondents answer from one indicating 'never' or 'strongly disagree' and five indicating 'very frequently' or 'strongly agree'. All the scales were adopted from previous literature (Domina and Koch, 1999; Morgan and Birtwistle, 2009), which explains the differences in the number of items measuring each construct. Regarding the independent variables, **consumer recycling behaviour** was measured through a five item scale, and **consumer awareness of the environment** was measured by a seven item scale. Concerning the dependent variables on clothing disposal behaviours, **give away to family members or friends** was measured by a three item scale, and **donating to charity** was measured by a three item scale. The next section of the questionnaire asked open ended questions regarding how respondents usually disposed of their fashion clothing. Finally, demographic information of respondents was

collected in terms of age, status, gender, education, income and the occupation of the main provider.

Data Analysis

For the analysis of the data, descriptive statistics, factor analysis and confirmatory factor analysis (CFA) were conducted. Descriptive statistics, construct reliabilities, items, means and standard deviations are presented in Table 2.

Insert Table 2 here

The Australian data set (n = 239) and Chilean data set (n = 249) were analysed statistically and both data sets revealed normality of the data. The scale reliability test of the measures revealed that two items concerning awareness of the environment had very low inter-item correlation with other items in the scale; therefore these two items were deleted from the measurement before conducting confirmatory factor analysis (CFA). The remaining 16 items of four constructs were subjected to CFA using AMOS-16 (Byrne, 2001).

The χ^2 values for the CFA model were significant for data from Australia (246.00, d.f. 112, $p = .000$) and Chile (271.06, d.f. 112, $p = .000$), and the overall fit in both contexts was reasonable with satisfactory values in the incremental fit index (IFI; 0.93 for Australia and 0.91 for Chile), Tucker-Lewis index (TLI; 0.90 for Australia and 0.88 for Chile), comparative fit index (CFI; 0.93 for Australia and 0.91 for Chile), χ^2/d.f. (2.19 for Australia and 2.42 for Chile), and root mean square error of approximation (RMSEA; 0.071 for Australia and 0.076 for Chile). The AMOS-16 reliabilities of the coefficient alpha (Nunnally, 1978) for respective scales are reported in Table 2.

The reliability and validity of the construct measures were measured using Cronbach's alpha reliability and Pearson correlations. Scales exhibited relatively high reliability coefficients with most Cronbach alpha scores over 0.6 in both countries: consumer awareness of the environment scale (α=0.683 in Australia; α=0.562 in Chile), general recycling

behaviour scale (α=0.927 in Australia; α=0.946 in Chile), give away to family or friends scale (α=0.776 in Australia; α=0.639 in Chile), and the donating to charity scale (α=0.726 in Australia; α=0.687 in Chile). As seen in Tables 3a and 3b, the analyses reveals that no correlations between constructs exceeds the lowest alpha reliability score, confirming the discriminant validity of the constructs (Gaski, 1984).

Insert Tables 3a and 3b here

To check and reduce the common method bias variance, the questionnaire included mixed positive and negatively worded items. Using Podsakoff and Organ's (1986) procedure, factor analysis was conducted for all constructs and this demonstrated that there was no single factor or any general factor that accounted for most of the variance in the independent and dependent variables. Thus, no common method bias variance issues were identified.

Descriptive Analysis

Mean scores on consumer recycling behaviour were higher for the Australian sample (mean = 3.22, sd. = 0.97) compared to the Chilean sample, (mean = 2.80, sd. = 1.31) indicating that Australian females consumers recycle more than Chilean female consumers. Regarding consumer awareness of the environment, the mean score was similar for the Australian sample (mean = 3.73, sd. = 1.00) compared to the Chilean sample (mean = 3.76, sd. = 0.96), therefore in both countries the scores were moderately high indicating that most respondents have a good awareness of environmental issues. Regarding the dependent variable giving away to family and friends, the mean score was similar for the Australian sample (mean = 2.84, sd. = 1.20), compared to the Chilean sample (mean = 2.83, sd. = 1.26). Finally, mean scores of the variable donation to charity were higher for the Australian sample (mean = 3.46, sd. = 1.05) compared to the Chilean sample (mean = 3.26, sd. = 1.18), signalling that Australian female consumers donate more to charity than Chilean female consumers.

Results

We tested our proposed hypothesises through structural equation modelling (SEM) technique. The results are shown in Table 4.

<center>**Insert Table 4 here**</center>

The results of Hypotheses 1a suggests that general recycling behaviour is not significantly related to giving away to family and friends in Chile (β = 0.017, p = 0.463), or in Australia (β = 0.028, p = 0.456). Therefore, **Hypothesis 1a is not supported**. The results of Hypothesis 1b indicates that general recycling behaviour is significantly related to donating to charities in Chile (β = 0.203, p = 0.007), and in Australia (β = 0.493, p < .001). Therefore, **Hypothesis 1b is fully supported.**

The results of Hypothesis 2a suggests that awareness of the environment is significantly related to giving away to family and friends in Australia (β = 0.168, p = 0.005), but not in Chile (β = -0.007, p = 0.855). Therefore, **Hypothesis 2a is supported only in Australia**. The results of Hypothesis 2b shows that general awareness of the environment is not related to donating to charities in Chile (β = 0.079, p = 0.555), or in Australia (β = 0.148, p = 0.158). Therefore, **Hypothesis 2b is not supported**. The results of Hypothesis 2c shows that general awareness of the environment is significantly related to donating to general recycling behaviour in Chile (β = 0.597, p < .001), and in Australia (β = 0.296, p < .001). Therefore, **Hypothesis 2c is fully supported.**

The results of Hypothesis 3a suggests that age is not related to giving away to family and friends in Australia (β = -0.047, p = 0.078), or in Chile (β = -0.004, p = 0.818). Therefore, **Hypothesis 3a is not supported**. The results of Hypothesis 3b shows that age is significantly related to donating to charities in Australia (β = 0.251, p < .001), but not in Chile (β = 0.079, p = 0.555). Therefore, **Hypothesis 3b is supported only in Australia**. The results of Hypothesis 3c shows that age is significantly related to general recycling behaviour

in Chile (β = 0.373, *p* < .001), and in Australia (β = 0.213, *p* < .001). Therefore, **Hypothesis 3c is fully supported**.

Discussion

The SEM analysis shows similarities and differences between the Chilean and Australian samples regarding antecedents of the two methods of clothing disposal behaviour: giving away to family or friends and donating to charity. According to the findings, in both countries consumers that have a positive attitude towards recycling are more likely to dispose of their clothing by donating to charity, rather than giving away to family or friends. This is consistent with a previous UK study by Morgan and Birtwistle (2009) which find that general recycling behaviour is positively related to donating to charity. The insignificant relationship with giving away to family and friends is an interesting contribution to this area. This finding suggests the need to identify specific drivers for this method of clothing disposal, which may be less related to recycling behaviour and perhaps more related to helping others or sharing valuable belongings, as suggested by respondents in the qualitative part of the survey.

Moreover, the findings show that Australian female consumers with higher levels of environmental awareness are more likely to give away their clothing to family and friends, rather than donate to charity organizations. Nevertheless, in Chile, consumer awareness of the environment does not have any impact on either donation to charity or giving away to family or friends. Although both samples have similar levels of awareness of the environment, the outcome of this attitude differs across countries. This is consistent with previous studies that find that people that are environmentally conscious do not necessarily behave pro-environmentally if they see that other people don't behave in this way (Ohtomo and Hirose, 2007). Nevertheless, in both countries, consumer awareness of the environment is positively related to consumer recycling behaviour, implying an indirect effect on donating to charities.

Finally, the findings demonstrate that in both countries, consumer age is not related to

giving to family or friends, but positively related to donating to charity in Australia, and positively related to consumer recycling behaviour in both countries. This implies that older people in Australia are more likely to give their clothing to charity organizations, but not in Chile. This finding may be explained by the fact that donating to charities is a relatively recent phenomenon in developing countries, and very few charity organisations exist. This is supported by previous studies with mixed results in terms of the effect of age on donation behaviour (e.g., Butler and Francis, 1997).

Conclusions

The increase in fast fashion retailing has led to large amounts of clothing being disposed of or destroyed. To safeguard our environment consumers can make sustainable responsible decisions at the time of clothing disposal. However, the disposal stage is often overlooked in consumer and marketing research. Thus, the main goal of our study was to examine antecedents of sustainable clothing disposal behaviour in two countries with different levels of industrialization: Australia and Chile. The study confirms previous work, that the strongest driver of consumer donating behaviour is attitude to recycling. In both countries, consumers that have a positive attitude towards recycling are more likely to dispose of their clothing by donating to charity, rather than giving away to family or friends. Moreover, in both countries a positive recycling behaviour is enhanced by consumer age and greater levels of awareness of the environment. This implies that to achieve higher rates of clothing donation by consumers, educators, the media and charities as well as fashion retailers must emphasise and encourage consumers to engage in recycling behaviours. Thus, effective communication strategies are fundamental to achieving sustainable forms of clothing disposal. For example, if more collection points or home collections were set up by charities, more people would be willing to donate their clothing and less would be thrown out.

In addition, a growing number of companies are looking to recognize the role of consumption sustainability as an integral component of their business strategy. Consumers will reward businesses that treat the environment fairly. Thus, fast fashion retailers that are perceived as supporting the environment will receive more patronage from consumers. This can provide opportunities for fashion retailers to develop strategic alliances with charities where donated clothing could provide incentives to repurchase from the named retailer.

References

Anderson, H. & Brodin, M. H. (2005), "The consumer's changing role: the case of recycling". *Management of Environmental Quality - An International Journal,* 16**,** 77-86.

Anderson, W. T. & Cunningham, W. (1972), "The socially conscious consumer". *Journal of Marketing,* 36**,** 23-31.

Bekin, C., Carrigan, M. & Szmigin, I. (2007), "Caring for the community". *The International Journal of Sociology and Social Policy,* 27**,** 221-233.

Bhardwaj, V. & Fairhurst, A. (2010), "Fast fashion: response to changes in the fashion industry". *The International Review of Retail, Distribution and Consumer Research,* 20**,** 165-173.

Birtwistle, G. & Moore, C. M. (2006), "Fashion clothing - where does it all end up?". *The International Journal of Retail & Distribution Management,* 35**,** 210-216.

Biswas, A., Licata, J. W., McKee, D., Pullig, C. & Daughridge, C. (2000), "The Recycling Cycle: An Empirical Examination of Consumer Waste Recycling and Recycling Shopping Behaviours ". *Journal of Public Policy & Marketing,* 19**,** 93-105.

Bruce, M. & Daly, L. (2006), "Buyer Behaviour for Fast Fashion". *Journal of Fashion Marketing and Management,* 10**,** 329-344.

Burke, M., Conn, W. D. & Lutz, R. J. (1978), "Using psychographical variables to investigate product disposition behaviour". *Proceedings of Educators Conference.* American Marketing Association.

Butler, S. M. & Francis, S. (1997), "The Effects of Environmental Attitudes on Apparel Purchasing Behaviour". *Clothing and Textiles Research Journal,* 15**,** 76-85.

Byrne, B. M. (2001), *Structural Equation Modelling with Amos: Basic Concepts, Applications, and Programming,* London, Lawrence Erlbaum Associates.

Caulfield, K. (2009) Sources of Textile Waste in Australia: A Discussion Paper, January. *Available at: URL:*
 <http://www.ttna.com.au/TEXTILE%20WASTE%20PAPER%20March%202009.pdf>

Chan, K. (1999), "Market segmentation of green consumers in Hong Kong". *Journal of International Consumer Marketing,* 12**,** 7-24.

Chen, H.-L. & Burns, L. D. (2006), "Environmental Analysis of Textile Products". *Clothing & Textiles Research Journal,* 24, 248-261.

Cleveland, M., Laroche, M. & Papadpopolous, N. (2009), "Ethnocentrism, and materialism: an eight-country study of antecedents and outcomes". *Journal of International Marketing,* 17**,** 116-146.

Daneshvary, N., Daneshvary, R. & Schwer, R. K. (1998), "Solid-waste recycling behaviour and support for curbside textile recycling". *Environment and behaviour,* 30**,** 144-161.

De-coverly, E., O'malley, L. & Patterson, M. (2003), "Hidden Mountain: the social avoidance of waste". In International Centre for Corporate Social Responsibility, N. U. (Ed.) *ICCSR Research Paper.* Nottingham.

Defra (2007), "Waste Strategy for England 2007". London, Department for Environment, Food and Rural Affairs.

Doane, D. (2001), *Taking Flight: the rapid growth of ethical consumerism,* London, New Economics Foundation.

Domina, T. & Koch, K. (1999), "Consumer reuse and recycling of post-consumer textile waste". *Journal of Fashion Marketing and Management* 3**,** 346-359.

Drumwright, M. E. (1994), "Socially Responsible Organizational Buying: Environmental Concern as a Noneconomic Buying Criterion". *Journal of Marketing,* 58**,** 1-19.

Foroohar, R. & Stabe, M. (2005), "Fabulous fashion: low-cost companies like Zara and Topshop are emerging as defining and dominant players, not just followers". N*ewsweek*

International, 17 (October), 30.

Fraj, E. & Martinez, E. (2006), "Environmental values and lifestyles as determining factors of ecological consumer behaviour: an empirical analysis". *Journal of Consumer Marketing,* 23**,** 133-144.

Gaski, J.F. (1984), "The Effects of Discrepant Power Perceptions in a Marketing Channel". *Psychology & Marketing (pre-1986),* 1 (3/4):45-56.

Golding, K. (2009), "Fair Trade's Dual Aspect: The Communications Challenge of Fair Trade Marketing". *Journal of Macromarketing,* 29**,** 160-171.

Ha-Brookshire, J. & Hodges, N.N. (2009), "Socially Responsible Consumer Behavior? Exploring Used Clothing Donation Behavior". *Clothing & Textiles Research Journal* 27 (3):179-196.

Hammer, M. (1993), *Home environment,* Gainsville, University of Florida Press.

Harrell, G. & Mcconocha, D. M. (1992), "Personal Factors Related to Consumer Product Disposal Tendencies". *The Journal of Consumer Affairs,* 26**,** 397-417.

Hawley, J. M. (2006), "Digging for Diamonds: a Conceptual Framework for Understanding Reclaimed Textile Products". *Clothing & Textiles Research Journal* 24**,** 262-275.

Hiller, K. Y. (2010), "Internal and external barriers to eco-conscious apparel acquisition". *International Journal of Consumer Studies,* 34**,** 279-286.

Holbrook, M. B. (1995), *Consumer Research: Introspective essays on the study of consumption,* Thousand Oaks, California, US, Sage.

Jackson (2004), "Models of Mammon: A cross-disciplinary survey in pursuit of the 'sustainable consumer'". In Strategy C. F. E. (Ed.) *Working Paper Series No. 2004/01.* University of Surrey, UK.

Jackson, T. & Michaelis, L. (2003), "Policies for Sustainable Consumption, A report to the Sustainable Development Commission". Surrey, UK.

Jacoby, J., Berning, C. E. & Dietvorts, T. F. (1977), "What about disposition?". *Journal of Marketing,* 41**,** 22-28.

Jahre, M. (1995), "Household waste collection as a reverse channel: A theoretical perspective". *International Journal of Physical Distribution & Logistics Management,* 25**,** 39-55.

Jones, P., Hillier, D., Comfort, D. & Eastwood, I. (2005), "Sustainable Retailing and Consumerism". *Management Research News,* 28**,** 34-44.

Kalafatis, S. T., Pollard, M., East, R. & Tsogas, M. H. (1999), "Green Marketing and Ajzen's theory of planned behaviour: a cross-market examination". *Journal of Consumer Marketing,* 16**,** 441-460.

Kotler, P. (1971), "Social Marketing: An Approach to Planned Social Change". *Journal of Marketing (pre-1986),* 35**,** 3.

Laroche, M., Bergeron, J. & Barbado-Forleo, G. (2001), "Targeting consumers who are willing to pay more for environmentally friendly products". *The Journal of Consumer Marketing,* 18**,** 503-520.

McAfee, A., Dessain, V. & Sjoeman, A. (2004), *"Zara: IT for Fast fashion"*. H. B. S. (Ed.). Boston, MA.

McCurry, J. W. (1996), "Blue jean remnants keep homes warm". *Textile World,* 84-85.

Menon, A. & Menon, A. (1997), "Enviropreneurial Marketing Strategy: The Emergence of Corporate Environmentalism as Marketing Strategy". *Journal of Marketing,* 61**,** 51-67.

Moczygemba, E. & Smaka-Kincl, V. (2007), "69 per cent recycling rate for waste management in Graz, Austria". *Management of Environmental Quality - An International Journal,* 18**,** 126-136.

Montoro-Rios, F. J., Luque-Martinez, T., Fuentes-Moreno, F. & Canadas-Soriano, P. (2006), "Improving Attitudes toward Brands with Environmental Associations: An Experimental

Approach". *The Journal of Consumer Marketing,* 23**,** 26-33.

Morgan, L. R. & Birtwistle, G. (2009), "An Investigation of Young Fashion Consumer's Disposal Habits". *International Journal of Consumer Studies,* 33**,** 190-198.

Nunnally, J. C. (1978) *Psychometric Theory,* New York, McGraw-Hill.

Ohtomo, S. & Hirose, Y. (2007), "The dual-process of reactive and intentional decision-making involved in eco-friendly behaviour". *Journal of Environmental Psychology,* 27**,** 117-125.

Peattie, K. & Peattie, S. (2009), "Social marketing: A pathway to consumption reduction?". *Journal of Business Research,* 62**,** 260-268.

Pickett-Baker, J. & Ozaki, R. (2008), "Pro-environmental products: marketing influence on consumer purchase decision". *Journal of Consumer Marketing*, 25, 281-293.

Podsakoff, P.M., & Organ, D. (1986), "Self-Reports in Organizational Research: Problems and Prospects". *Journal of Management* 12 (4), 531-543.

Robins, N. & Roberts, S. (1997), "*Changing consumption and production policies: unlocking trade opportunities*". International Institute for Environments and Development and UN Department of Policy, Coordination and Sustainable Development.

Sanne, C. (2002), "Willing consumers - or locked in? Policies for sustainable consumption". *Ecological Economics,* 42**,** 273-287.

Shim, S. (1995), "Environmentalism and Consumer's Clothing Disposal Patterns: An Exploratory Study". *Clothing and Textiles Research Journal,* 13**,** 38-48.

Strong, C. (1996), "Features contributing to the growth of the ethical consumerism - a preliminary investigation". *Marketing Intelligence and Planning,* 15**,** 5-13.

Van Dam, Y. K. & Apeldoorn, P. A. C. (1996), "Sustainable Marketing". *Journal of Macromarketing,* 16, 45-56.

Figure 1: Conceptual model of consumer clothing disposal behaviour
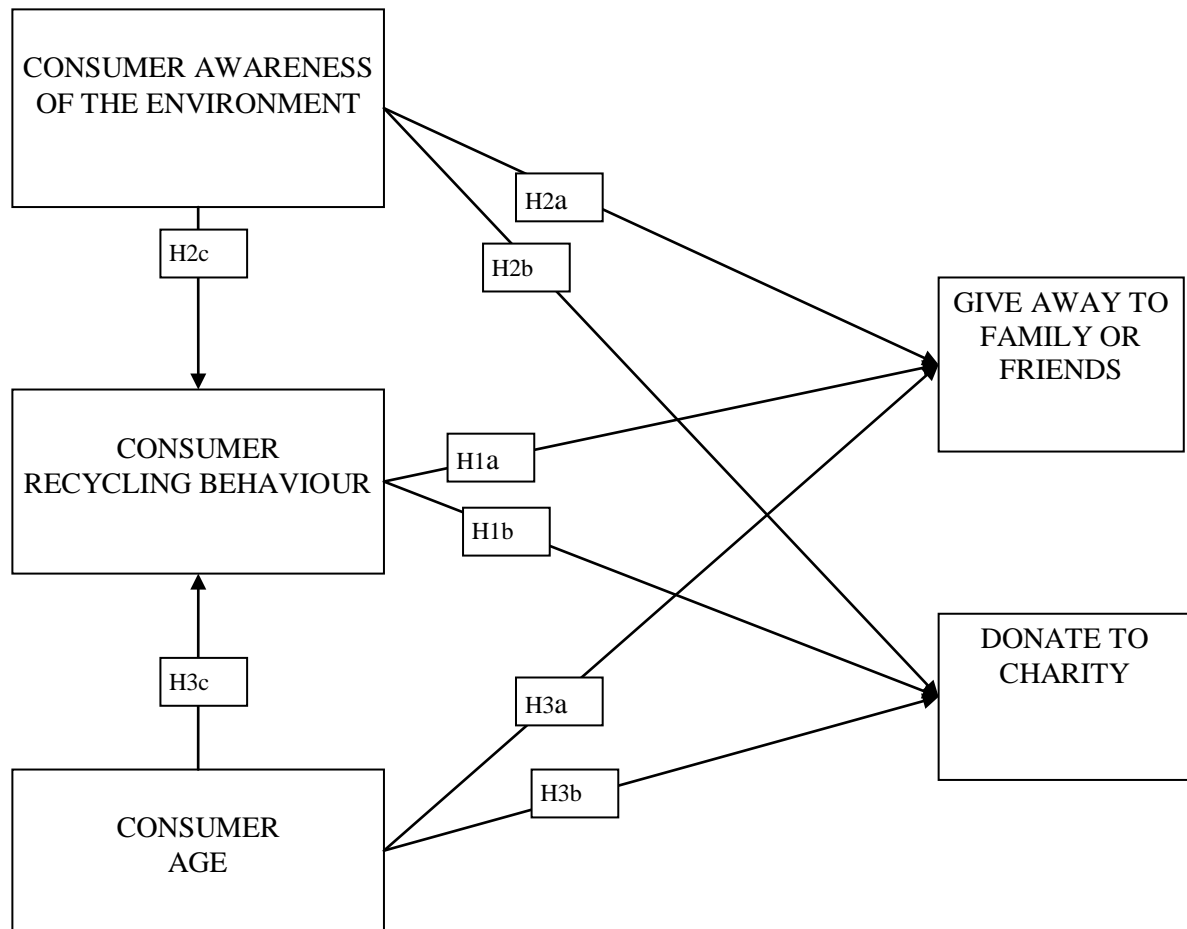
Table 1: Respondent demographic characteristics

Demographics	Australia (n=239) %	Chile (n=249) %
Age		
15-24	20.5	26.5
25-34	35.0	28.5
35-44	21.8	23.3
45-50	21.8	18.1
60+	0	3.6
Marital Status		
Single	23.0	21.0
Single at parents	11.3	25.8
Single with children	3.8	2.8
With partner	19.2	5.6
Married	11.7	8.5
Married with Children	25.9	32.3
Other	5.0	4.0
Education		
School-Standard level	5.9	0
School-Higher Level	7.1	3.2
College, Certificate, Diploma	15.9	10.4
University Degree	38.7	55.4
University Higher Degree	32.4	29.7
Income		
< US$10.000	3.0	30.9
US$10.000 – US$20.000	2.1	13.3
US$20.000 – US$40.000	5.5	12.0
US$40.000 – US$60.000	11.9	11.2
US$60.000 – US$80.000	14.4	7.6
US$80.000 – US$100.000	17.8	10.0
> US$100.000	45.3	14.9
Occupation of Main Provider		
Higher Managerial or professional	34.2	66.7
Intermediate managerial or professional	11.3	7.2
Supervisory, clerical or junior management	0.8	4.0
Skilled Manual Worker	4.6	1.2
Unskilled manual labourer	2.5	0.8
Housewife	34.4	0.4
Student	5.0	0
Unemployed	0.4	3.2
Self-Employed	6.8	16.5

Table 2: Construct alpha scores and descriptive statistics of the items

Constructs/Items	Australia		Chile	
	Mean	S.D.	Mean	S.D.
Consumer Awareness of the Environment (α =.683 Australia; α =.562 Chile)				
In the next 5-10 years we are in serious danger of destroying the environment	4.21	1.0	4.30	.88
Not recycling poses a threat to the environment	4.46	.79	4.50	.73
It is time for environmental groups to get more radical	3.26	1.2	3.65	1.1
I am extremely worried about the state of the environment	3.87	.92	3.48	1.0
I feel personally helpless to have much impact on the environment	3.02	1.2	2.69	1.1
Consumer Recycling Behaviour (α =.927 Australia; α =.946 Chile)				
I recycle plastic	4.26	.91	2.57	1.4
I recycle glass	4.29	.98	2.83	1.5
I recycle paper	4.28	.95	2.86	1.4
Compared with the people I know, I make a greater effort to recycle	3.62	1.0	3.00	1.3
I make an effort to find and use recycling bins	3.91	1.0	2.73	1.4
Give Away to Family/Friends Disposal Behaviour (α =.776 Australia; α =.639 Chile)				
I give used clothing to members of my family	3.22	1.2	3.37	1.2
I give used clothing to friends	2.92	1.2	2.70	1.3
I swap clothing with family members and friends	2.38	1.2	2.43	1.3
Donating to Charity Disposal Behaviour (α =.726 Australia; α =.687 Chile)				
I give clothing to charity shops	3.94	1.1	3.63	1.2
It makes me feel good to give clothing to charity shops	3.79	1.1	3.82	1.2
I only give quality clothing to charity shops	2.65	1.0	2.34	1.2

*α = Chronbach alpha

Table 3a: Mean, standard deviation and correlations: sample Australia

	Mean	S. D.	CRB	CAE	FCD	DCD
CRB	3.68	1.02	1.00	0.26**	0.05	0.33**
CAE	4.07	0.97	0.26**	1.00	0.25**	0.13*
FCD	2.84	1.20	0.05	0.25**	1.00	0.10
DCD	3.46	1.05	0.33**	0.13*	0.10	1.00

Table 3b: Mean, standard deviation and correlations: sample Chile

	Mean	S. D.	CRB	CAE	FCD	DCD
CRB	2.80	1.39	1.00	0.32**	0.08	0.26**
CAE	3.73	0.96	0.32**	1.00	0.04	0.14
FCD	2.83	1.26	0.08	0.04	1.00	0.02
DCD	3.26	1.18	0.26**	0.14	0.02	1.00

* $p < 0.05$; ** p, 0.01.

S. D., standard deviation; CRB, consumer recycling behaviour; CAE, consumer awareness of the environment; FCD, family clothing disposal; DCD, donation clothing disposal.

Table 4: Results of regression analysis for the hypotheses: Australia and Chile

Hypotheses	Australia		Chile		Result of Hypotheses
	B	*p*	B	*p*	
Hypothesis1a: Consumer Recycling Behaviour/ Give to Family and Friends	0.028	0.456	0.017	0.463	Not Supported
Hypothesis1b: Consumer Recycling Behaviour/ Donate to Charity	0.493	**0.000***	0.203	**0.007***	Supported
Hypothesis 2a: Consumer Awareness of Environment/ Give to Family and Friends	0.168	**0.005***	-0.007	0.855	Supported in Australia
Hypothesis 2b: Consumer Awareness of Environment/ Donate to Charity	0.148	0.158	0.079	0.555	Not Supported
Hypothesis2c: Consumer Awareness of Environment/ Consumer Recycling Behaviour	0.296	**0.000***	0.597	**0.000***	Supported
Hypothesis 3a: Consumer Age/ Give to Family and Friends	-0.047	0.078	-0.004	0.818	Not Supported
Hypothesis 3b: Consumer Age/ Donate to Charity	0.251	**0.000***	0.079	0.555	Supported in Australia
Hypothesis 3c: Consumer Age/ Consumer Recycling Behaviour	0.213	**0.000***	0.373	**0.000***	Supported

*B, beta; *p, p* value.