

Recycling Behaviour of Students and the Effect of Sociodemographic Characteristics on Their Behaviour

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Abstract

The aim of this study is to find out the recycling behavior of students and the factors that influence their behaviors. Online questionnaires were used for this study. Sixty-six responses from different cultures and countries were obtained. Results show that students who have high income, are highly educated, and have four or more people in their households recycle more compared to others. And results are consistent with the existing literature.

Keywords: Consumer Behaviour, Recycling, Recycling Behaviour, Student Behaviour

Öğrencilerin Geri Dönüşüm Davranışları ve Bu Davranışa Etki Eden Sosyo-demografik Faktörler Üzerine Bir Çalışma

Özet

Bu çalışmanın amacı öğrencilerin geri dönüşüm davranışını ve bu davranışı etkileyen faktörleri belirlemektir. Bu amaca ulaşmak için anket uygulaması yapılmış ve bu uygulamaya toplamda 66 öğrenci katılmıştır. Veriler online olarak toplanmış olup, değişik ülkelerden insanlar çalışmaya katılmıştır. Çalışmanın sonuçları göstermiştir ki aile geliri yüksek olan, yüksek seviyede öğrenim gören ve evlerinde 4 kişiden fazla kişi bulunan öğrenciler daha fazla geri dönüşüm yapmaktadır. Bu anlamda çıkan sonuçlar aynı zamanda konu üzerinde yazılmış makale sonuçlarıyla uyumluluk göstermiştir.

Anahtar Kelimeler: Tüketici Davranışları, Geri Dönüşüm, Geri Dönüşüm Davranışları, Öğrenci Davranışları

Introduction

According to Ölander and Thøgersen (2006), significant aspects of consumer behaviour regarding sustainable consumption are the stages of purchase, pre-purchase and post-purchase and D'Souza, Taghian and Lamb (2005) highlight the emergence of the issue of disposal.

Hoyer, MacInnis and Pieters (2008) state the issue of disposal concerns in consumer behaviour with regards to materials recycling and reuse which has nowadays become important for the customers. Therefore, in this study, the aim is set as finding out the recycling behaviour of students and the factors that have influences on their behaviours. This study is highly important since recycling has started to have an important role in marketing; however, factors affecting recycling are not clear because of the limited number of studies on the subject.

Recycling Behaviour

According to Solomon, Russell-Bennett and Previte (2013), the literature features a strong academic focus on consumer motivations, attitudes and behaviour with regards to the disposal of waste.

Ölander and Thøgersen (2006) argue in favour of defining recycling in terms of consumer behaviour that is directly affected by the environment of the consumer. In other words, external conditions are regarded as the primary influence on recycling behaviour. Research by Ölander and Thøgersen (2006) investigate methods for organising recycling infrastructure. However, D'Souza et al. (2005) highlight consumer attitudes and motivations towards environmental protection, while Bortoleto (2015) highlights ethical norms as the most significant influences on regular and sustainable recycling. Çimen and Yılmaz (2012) argue that the perceptions held by an individual with regards to their own behaviour, or "personal norms" also have a significant influence on behavioural outcomes and attitudes. Chu and Chiu (2003) describe an individual's personal norms as the conversion of intentions and attitudes into individual behaviour. Lee and Paik (2011) argue that an individual that exhibits intention is more likely to display behaviour than an individual that does not exhibit intention. Consequently, intention is a significant and essential aspect of behaviour.

Individual intentions, attitudes, motivations and decisions are all factors that can influence individual behaviour. According to Jesson (2009), socio-cultural values also have a significant influence on individual behavioural processes. Jesson (2009) also notes the significant influence of the attitudes of others, who are important to an individual, on the individual decision making process. Lee and Paik (2011) claim individuals and individual behaviours are increasingly influenced by socio-cultural values if such values are internalised.

According to Sidique, Lupi and Joshi (2010), there is a multifactorial influence on the relationship between individual norms, intentions and behaviours. Meneses and Palacio (2005) note that a primary requirement of individual behaviour is the possession of knowledge related to the behaviour and represents the perception held by the individual of a particular issue.

Furthermore, awareness of the consequences of certain behaviours can significantly influence the carrying out or rejection of that behaviour. Jesson (2009) argues that individual awareness of strategies and opportunities to act associated with a certain behaviour influences the decision to express intention or the decision to act in a different way. Meneses and Palacio (2005) maintain that the assumption of responsibility by an individual regarding the consequences of certain behaviour increases the probability of individual expression of intention.

Factors Influencing Recycling Behaviour

Bekin, Carrigan and Szmigin (2007) investigate recycling intentions through application of the theory of reasoned action, laddering techniques and chain analysis, to identify fifteen motivating factors that influence the decision by consumers to recycle. Tangible and intangible goals are identified as motivating factors and cover the spectrum from tangible goals including the reuse of materials and the avoidance of landfill through to intangible goals such as protecting the environment for future generations. Analysis of the impact of such goals on individual attitudes, norms and past behaviour suggests a positive influence of goal setting and recycling procedures on consumer recycling behaviour.

Cleveland, Kalamas and Laroche (2005) find that recycling behaviour is influenced by affective changes and moderated by attitude strength. For example, individuals who may

not be as aware of the recycling procedures hold less developed attitudes towards recycling and are subsequently more receptive to affective change. Bekin et al. (2007) argue, consequently, that the findings of the two studies suggest a direct relationship between consumer attitudes to recycling and the presence of recycled products, meaning consumer attitudes are not based on the type of product.

According to Bekin et al. (2007), consumers are likely to recycle established brand products if they have a positive perception and attitude towards the brand, but the same effect is not found for unknown brands. The study of Lee and Paik (2011) supports the abovementioned studies through its establishment of a relationship between shopping and recycling behaviour. Bekin et al. (2007) argue that past findings do not provide support for a relationship between consumer motivation to recycle and purchase recycled products; therefore, it is important to focus on testing the relationship between consumer recycling behaviour and environmental context. Meta-research by Iyer and Kashyap (2007) analyses 67 empirical studies and identifies four factors that impact the relationship: extrinsic and intrinsic incentives and external and internal facilitators.

Bei and Simpson (1995) introduce the concept of psychological benefit associated with the purchase of recycled products to consumer purchase behaviour and the probability of purchasing recycled products. The analysis suggests a positive correlation between the psychological benefit gained from the purchase of recycled products and the probability of purchasing recycled products. McCarty and Shrum (2001) attribute three influential determinants to the decision to recycle as individualism, collectivism and locus of control. According to McCarty and Shrum (2001), there is a negative correlation between the decision to recycle and individualism. Iyer and Kashyap (2007) argue that this is due to a negative attitude towards recycling and subsequent avoidance of recycling. Recycling behaviour is found to have a positive correlation with collectivism as individuals perceive recycling as a benefit for the community. Iyer and Kashyap (2007) point out that recycling behaviour can become an issue where individuals hold both individualistic and collectivist norms.

Other socio-demographic factors influencing the decision to recycle have been suggested by academics. Aung and Arias (2006) argue gender has a defining effect as different experiences in the lives of men and women due to their sex; therefore, it is regarded as an influential factor on recycling behaviour on the basis of the differences between males

and females from the perspectives of interests, experiences, needs, preferences and understanding and may therefore consequently contribute to the differences with regards to making environmentally sensitive or insensitive decisions. It is argued that gender has an influence on recycling behaviours and claimed that women are more environmentally aware and interest in environmental preservation than their male counterparts. Aung and Arias (2006) claim a relationship between social class and recycling behaviour on the basis of social structures, links between social classes and progression towards the promotion of sustainable development initiatives.

Jesson (2009) observe the common focus on factors considered influential in recycling behaviour and the recycling of household waste that is predominant across empirical research conducted in the last twenty years. Extensive analytical research conducted by Lee and Paik (2011) state that individual level factors influencing household recycling behaviour are variables such as motivation, attitudes and concerns regarding the environment and demographics. According to Monroe (2003), there is a widespread belief that pro-environment attitudes are expensive and inconvenient and are not associated with direct individual benefits, meaning individuals who hold pro-environment attitudes and act in a pro-environmental manner are regarded as self-sacrificing in the interests of social improvement.

Many studies investigate the relationship between socio-demographic factors such as age, level of income and education and pro-environmental behaviour. Research by Tucker and Douglas (2006) indicates a positive correlation between higher levels of education and income and recycling behaviour. However, according to Barr and Gilg (2005), there is a specific type of person that is more likely to carry out recycling behaviour. Bennett, Savani and Ali-Choudhury (2008) identify these personal variables as being female, young and having high levels of education and income, possession of a car, liberal political views and a childhood characterised by a single family household. A review of studies on pro-environmental behaviour conducted by Cleveland et al. (2005) indicates that attitudinal behaviours are the most significant determinants, having a stronger influence on recycling behaviour than socio-demographic variables such as age, gender, education, socio-economic status, income level and so on.

Furthermore, Barr and Gilg (2005) indicate a positive relationship between those who are younger and recycling behaviour. Chu and Chiu (2003) indicate the opposite, with results suggesting a positive relationship between age and recycling behaviour, alongside positive relationships between recycling behaviour and gender, level of education and income and the household type. According to D'Souza et al. (2005), lifestyle can be significantly influenced by the level of income and is not associated with environmental concerns on any level. Bennett et al. (2008) argue that as a result, there is an expectation of a positive correlation between higher levels of income and education with pro-environmental behaviour.

It is also claimed that single family households with high incomes are more likely to recycle on a regular basis than those further down the socio-economic hierarchy. However, the presence of one individual who recycles in a household has a significant positive effect on the behaviour of the others in the household. Consequently, children may be best positioned to encourage recycling in a household (Bennett et al., 2008).

Despite this, it is discovered that there is a negative relationship between the number of children in a household and their age with recycling, with households with younger children and more children having a tendency to recycle less than others. Tucker and Douglas (2006) suggest that this is potentially a function of the busy nature of environments with young children and children may increase pressure on parents and other adults in the household to recycle as the children grow up. Bennett et al. (2008) highlight the fact that there is remaining uncertainty with regards to the role of ethnicity as an influential factor on recycling behaviour.

Methodology

The aim of this study was set as to find out the recycling behaviour of students and the factors that have influences on their behaviours. The study was conducted among the students who have a LinkedIn account. In order to identify the effect of nationality, students were not selected from a specific country. 100 students were selected randomly and questionnaires were sent to them. However, only 66 returns were obtained. The questionnaire consisted of 14 questions. 10 of those questions were demographic and the rest were related to recycling behaviour. In the analysis, first of frequency was used to determine descriptive statistics and then cross-tabulation analysis was used to determine the role of socio demographic characteristics on recycling behaviour.

Findings

Demographic Characteristics of Participants

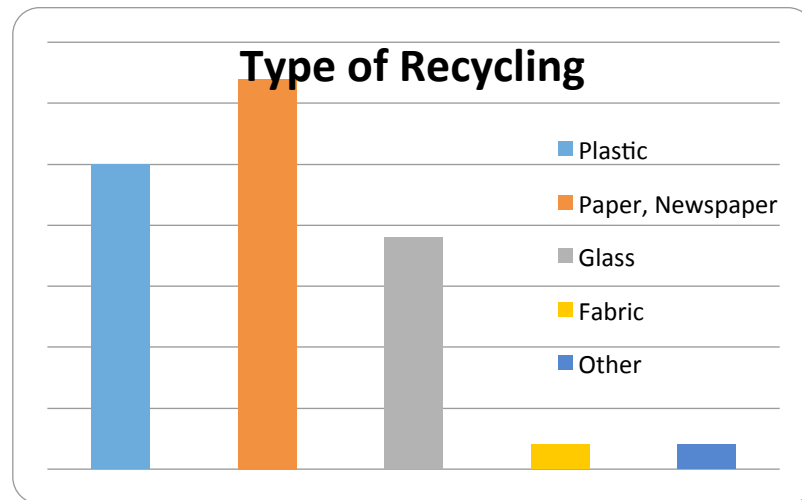
Characteristics		%	Characteristics		%
Gender	Male	53	Type of Study	No answer	12
	Female	47		Part-time Student	15
Nationality	African	8		Full-time Student	73
	Asian	35	Annual Income Level	No Answer	9
	European	30		Less than 10,000 GBP	58
	Middle Eastern	1		10,000GBP-24,999GBP	18
	North American	1		25,000GBP-39,999GBP	11
	South American	8		More than 40,000GBP	4
	Australian	3	Degree of Study	No Answer	11
	Other	14		Undergraduate	9
Age	18-30	77		Postgraduate	54
	31-45	18	PhD	26	
	46-55	5	Number of Family Members	I Live alone	53
Marital Status	No answer	1		1	15
	Single	71		2	17
	Married with Children	11		3	6
	Married with No Children	11		4	3
	Living Together	6		More than 4	6
Employment Type	No Answer	3	Existence of Child in Household	Yes	17
	Full-time	17		No	83
	Part-time	53			
	Unemployed	27			

Recycling Behaviour

	Frequency	Percent	Valid Percent	Cumulative Percent
No answer	1	1.5	1.5	1.5
Yes	41	62.1	62.1	63.6
No	24	36.4	36.4	100.0
Total	66	100.0	100.0	

According to the results, the majority of the participants recycle.

Type of Recycling



According to the results, papers and newspapers are the mostly recycled objects by the participants.

Importance of Recycling

	Frequency	Percent	Valid Percent	Cumulative Percent
No answer	1	1.5	1.5	1.5
Very important	22	33.3	33.3	34.8
Important	28	42.4	42.4	77.3
Moderate	12	18.2	18.2	95.5
Not important	3	4.5	4.5	100.0
Total	66	100.0	100.0	

According to the results, recycling is important for the participants.

Frequency of Recycling Behaviour

	Frequency	Percent	Valid Percent	Cumulative Percent
No answer	2	3.0	3.0	3.0
Always	27	40.9	40.9	43.9
Sometimes	23	34.8	34.8	78.8
Rarely	6	9.1	9.1	87.9
Occasionally	7	10.6	10.6	98.5
Never	1	1.5	1.5	100.0
Total	66	100.0	100.0	

According to the results, many of the participants always recycle.

Relationship between Socio-Demographic Factors and Recycling

Gender / Recycling

			Recycling			Total
			No answer	Yes	No	
Gender	Male	Count	1	20	14	35
		% within Gender	2.9%	57.1%	40.0%	100.0%
	Female	Count	0	21	10	31
		% within Gender	.0%	67.7%	32.3%	100.0%
Total		Count	1	41	24	66
		% within Gender	1.5%	62.1%	36.4%	100.0%

According to the results, females recycle more compared to males.

Nationality / Recycling

			Recycling			Total	
			No answer	Yes	No		
Nationality	African	Count	0	4	1	5	
		% within Nationality	.0%	80.0%	20.0%	100.0%	
	Asian	Count	0	13	10	23	
		% within Nationality	.0%	56.5%	43.5%	100.0%	
	European	Count	1	12	7	20	
		% within Nationality	5.0%	60.0%	35.0%	100.0%	
	Middle Eastern	Count	0	1	0	1	
		% within Nationality	.0%	100.0%	.0%	100.0%	
	North American	Count	0	1	0	1	
		% within Nationality	.0%	100.0%	.0%	100.0%	
	South American	Count	0	3	2	5	
		% within Nationality	.0%	60.0%	40.0%	100.0%	
	Australian	Count	0	2	0	2	
		% within Nationality	.0%	100.0%	.0%	100.0%	
	Other	Count	0	5	4	9	
		% within Nationality	.0%	55.6%	44.4%	100.0%	
	Total		Count	1	41	24	66
			% within Nationality	1.5%	62.1%	36.4%	100.0%

Results do not indicate clear influence of nationality on recycling behaviour.

Age / Recycling

			Recycling			Total
			No answer	Yes	No	
Age	18-30	Count	1	32	18	51
		% within Age	2.0%	62.7%	35.3%	100.0%
	31-45	Count	0	7	5	12
		% within Age	.0%	58.3%	41.7%	100.0%
	46-55	Count	0	2	1	3
		% within Age	.0%	66.7%	33.3%	100.0%
Total		Count	1	41	24	66
		% within Age	1.5%	62.1%	36.4%	100.0%

According to the results, older students recycle more compared to younger ones.

Marital Status / Recycling

			Recycling			Total	
			No answer	Yes	No		
Marital Status	No answer	Count	0	0	1	1	
		% within Marital Status	.0%	.0%	100.0%	100.0%	
	Single	Count	1	30	16	47	
		% within Marital Status	2.1%	63.8%	34.0%	100.0%	
	Married with children	Count	0	4	3	7	
		% within Marital Status	.0%	57.1%	42.9%	100.0%	
	Married with no children	Count	0	4	3	7	
		% within Marital Status	.0%	57.1%	42.9%	100.0%	
	Living together	Count	0	3	1	4	
		% within Marital Status	.0%	75.0%	25.0%	100.0%	
	Total		Count	1	41	24	66
			% within Marital Status	1.5%	62.1%	36.4%	100.0%

According to the results, single students recycle more compared to married ones.

Employment Type / Recycling

			Recycling			Total
			No answer	Yes	No	
Employment Type	No answer	Count	0	2	0	2
		% within Employment Type	.0%	100.0%	.0%	100.0%
	Full-time	Count	0	6	5	11
		% within Employment Type	.0%	54.5%	45.5%	100.0%
	Part-time	Count	1	20	14	35
		% within Employment Type	2.9%	57.1%	40.0%	100.0%
	Unemployed	Count	0	13	5	18
		% within Employment Type	.0%	72.2%	27.8%	100.0%
	Total	Count	1	41	24	66
		% within Employment Type	1.5%	62.1%	36.4%	100.0%

According to the results, unemployed students recycle more compared to employed ones.

Type of Study / Recycling

			Recycling			Total
			No answer	Yes	No	
Type of Study	No answer	Count	0	5	3	8
		% within Type of Study	.0%	62.5%	37.5%	100.0%
	Part-time student	Count	0	6	4	10
		% within Type of Study	.0%	60.0%	40.0%	100.0%
	Full-time student	Count	1	30	17	48
		% within Type of Study	2.1%	62.5%	35.4%	100.0%
Total	Count	1	41	24	66	
	% within Type of Study	1.5%	62.1%	36.4%	100.0%	

According to the results, fulltime students recycle more compared to others.

Annual Income Level / Recycling

			Recycling			Total
			No answer	Yes	No	
Annual Income Level	No answer	Count	0	5	1	6
		% within Annual Income Level	.0%	83.3%	16.7%	100.0%
	Less than 10,000 GBP	Count	0	24	14	38
		% within Annual Income Level	.0%	63.2%	36.8%	100.0%
	10,000 GBP-24,999 GBP	Count	1	4	7	12
		% within Annual Income Level	8.3%	33.3%	58.3%	100.0%
	25,000 GBP-39,999 GBP	Count	0	6	1	7
		% within Annual Income Level	.0%	85.7%	14.3%	100.0%
	More than 40,000 GBP	Count	0	2	1	3
		% within Annual Income Level	.0%	66.7%	33.3%	100.0%
	Total	Count	1	41	24	66
		% within Annual Income Level	1.5%	62.1%	36.4%	100.0%

According to the results, high income students recycle more compared to others.

Degree of Study / Recycling

			Recycling			Total
			No answer	Yes	No	
Degree of Study	No answer	Count	0	5	2	7
		% within Degree of Study	.0%	71.4%	28.6%	100.0%
	Undergraduate	Count	0	4	2	6
		% within Degree of Study	.0%	66.7%	33.3%	100.0%
	Postgraduate	Count	1	19	16	36
		% within Degree of Study	2.8%	52.8%	44.4%	100.0%
	PhD	Count	0	13	4	17
		% within Degree of Study	.0%	76.5%	23.5%	100.0%
	Total	Count	1	41	24	66
		% within Degree of Study	1.5%	62.1%	36.4%	100.0%

According to the results, PhD students recycle more compared to others.

Number of Family Members / Recycling

			Recycling			Total
			No answer	Yes	No	
Number of Family Member	I live alone	Count	1	20	14	35
		% within Number of Family Member	2.0%	57.1%	40.0%	100.0%
	1	Count	0	7	3	10
		% within Number of Family Member	.0%	70.0%	30.0%	100.0%
	2	Count	0	8	3	11
		% within Number of Family Member	.0%	72.7%	27.3%	100.0%
	3	Count	0	2	2	4
		% within Number of Family Member	.0%	50.0%	50.0%	100.0%
	4	Count	0	1	1	2
		% within Number of Family Member	.0%	50.0%	50.0%	100.0%
	More than 4	Count	0	3	1	4
		% within Number of Family Member	.0%	75.0%	25.0%	100.0%
	Total	Count	1	41	24	66
		% within Number of Family Member	1.5%	62.1%	36.4%	100.0%

According to the results, students who have more people in the house recycle more compared to others.

Existence of Child in Household / Recycling

			Recycling			Total
			No answer	Yes	No	
Existence of Child in Household	Yes	Count	0	8	3	11
		% within Existence of Child in Household	.0%	72.7%	27.3%	100.0%
	No	Count	1	33	21	55
		% within Existence of Child in Household	1.8%	60.0%	38.2%	100.0%
	Total	Count	1	41	24	66
		% within Existence of Child in Household	1.5%	62.1%	36.4%	100.0%

According to the results, students who have children in their house recycle more compared to others.

Conclusion

It was identified in this study that there is a widespread belief that pro-environment attitudes are expensive and inconvenient and are not associated with direct individual benefits, meaning that individuals who hold pro-environment attitudes and act in a pro-environmental manner are regarded as self-sacrificing in the interests of social improvement. However, some also support the opposite view. According to Tucker and Douglas (2006), individuals may be motivated to recycle on the basis of self-interest such as feelings of satisfaction, earning group approval or identity development, rather than altruistic motives. The current study found evidence to support concern for the environment as a key driver behind why students engage in recycling behaviours. Concern for the environment feature the characteristic belief that recycling contributes to nature conservation and the reduction of waste that is disposed of using the landfill method. Therefore, these findings are consistent with those of Monroe (2003) given the hypothesis that a motivating factor behind recycling behaviour is the belief that recycling contributes to protecting the environment and its inhabitants.

It is also claimed in the literature that individual level factors influencing household recycling behaviour are variables such as motivation, attitudes and concerns regarding the environment and demographics. Subsequently, this study analysed the impact of socio-demographic factors on recycling behaviour. The findings by Tucker and Douglas (2006), supporting a positive relationship between higher levels of income and education and recycling behaviour, are also supported by this study which demonstrated that students with higher incomes and PhD students exhibited increased levels of recycling behaviour than others. However, according to Barr and Gilg (2005), there is a specific type of person with an environmental awareness who is more likely to carry out recycling behaviour. Bennett et al. (2008) identify these personal variables as being female, young and having high levels of education and income, possession of a car, liberal political views and a childhood characterised by a single family household. For the most part, the findings of the current study showed a correlation with these findings; however, it was also noted that older students also demonstrated high levels of recycling behaviour relative to younger students. A review of research on pro-environmental behaviour by Cleveland et al. (2005) discover a significant role assumed by attitudinal behaviours relative to socio-demographic factors such as gender,

age, education and income. This means that the findings are consistent with those of Cleveland et al. (2005).

In the literature, it is also argued that household who are in the upper echelons for income and characterised by a single family have an increased propensity for recycling behaviour. The results of the current study are also consistent with these findings.

Similarly, Mori (2002) observes the positive influence of an individual who recycles in a household on others in the household. Consequently, children have been suggested as having the most influence in leading recycling behaviour in a household. In the literature, some studies were unable to establish a relationship between the age and number of children in a household and propensity to recycle, finding that the younger the children and the more children in a household have a negative impact on recycling behaviour. Tucker and Douglas (2006) suggest this is potentially a function of the busy nature of environments with young children and children may increase pressure on parents and other adults in the household to recycle as the children grow up. The current study findings suggest that households of more than 4 individuals and adults living with children have a higher propensity for recycling behaviour than others and will recycle products. As a result, findings are consistent with those of Mori (2002). Consequently, it was observed that there is a positive correlation between the number of adults and children in a household and the propensity to engage in recycling behaviour.

Differently, Bennett et al. (2008) highlight the fact that there is remaining uncertainty with regards to the role of ethnicity as an influential factor on recycling behaviour. Despite the small sample size, in this study, similar results were obtained.

According to results, it can be suggested that further research needs to be conducted by comparing two different countries. This would help to increase the number of recycling behaviour studies.

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QUESTIONNAIRE

Gender

Male Female

Nationality

African Asian European Middle Eastern North American
 South American Australian Other

Age

Under 18 18-30 31-45 46-55 55 and more

Marital Status

Single Married with Children Married with No Children Living Together

Employment Type

Full-time Part-time Unemployed

Are you....?

Part-time student Full-time student

What is your annual income level?

Less than £10,000 £10,000 - £24,999 £25,000 - £39,999 More than £40,000

What degree are you studying?

Undergraduate Postgraduate PhD

How many family members do you live with at the moment?

I live alone 1 2 3 4 More than 4

Is there any child in your current household?

Yes No

Do you (as a household) do recycling?

Yes No

If yes, what type of waste do you mostly recycle?

Plastic Paper, Newspaper Glass Fabric Other.....

How important for you to recycle?

Very important Important Moderate Not important

Which of the following most reflects your recycling behaviour?

Always Sometimes Rarely Occasionally Never