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SECONDHAND SPACES AND SUSTAINABLE CONSUMPTION: EXAMINING FREECYCLE'S ENVIRONMENTAL IMPACTS AND USER MOTIVATIONS

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ABSTRACT

Sustainable consumption demands that greater attention is paid to the causes and consequences of a materialistic consumer society, in particular the issue of ever-increasing post-consumer waste. Current research suggests that secondhand disposition and acquisition are motivated by generosity, economic necessity and personal fulfilment. Despite the recent growth of online secondhand spaces, including Freecycle (an online network for distributing unwanted items, with a mission to reduce waste, and the first secondhand space with a principally environmental objective) little research has been done regarding the environmental aspect of using secondhand spaces. Therefore, this paper presents new empirical findings from a case study of a Freecycle group to explore how the network is used, why, and by whom. A case study of Norfolk Freegle (Freecycle) in the UK comprised an analysis of Freecycle email posts, an online members' survey, and follow-up telephone interviews, as well as elite interviews with organisers. Results show that Freecycle adds an environmental dimension to the more common reuse motivations of altruism and economic necessity, and most members use Freecycle for both disposition and acquisition. The majority of items seen were white goods, furniture, or electronics: all difficult to find in other secondhand spaces. This research shows that networks such as Freecycle are an important way to tap into environmental motivations for reuse, keep waste out of landfill.

Keywords: Freegle, Freecycle, secondhand, reuse, waste, sustainable consumption
3S Strand: Sustainable Consumption

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1 INTRODUCTION

It has become clear that consumer societies have reached an unsustainable level of production and consumption (Lucas, 2002), and the issue of dealing with ever-increasing levels of post-consumer waste is of urgent concern to policymakers keen to deliver on sustainable consumption policy and waste-reduction objectives. Promoting greater re-use of consumer goods is a potential solution to this problem. To date much research has been conducted regarding reuse and secondhand spaces as well as disposal through donation and secondhand acquisition, and as reuse has become more widely spread, so has the literature. Research has covered a wide rage of secondhand spaces such as car boot sales (Gregson and Crewe, 2003, Crewe and Gregson, 1998, etc.), charity shops (Gregson and Crewe, 2003, Hibbert, et al., 2003, etc.), retro shops (Crewe et al., 2003, etc.), classified advertisements (Clarke, 1998, 2000), garage sales (Soiffer and Herrmann, 1987, Parrish, 1986, Gordon, 1985, Freedman, 1976, etc.), flea markets and swapping (Clarke, 2000, Belk et al., 1998, Miller, 2000, McCree, 1984, Maisel, 1976, etc.), and furniture reuse organizations (Alexander, et al. 2009, Alexander and Smaje, 2008, etc.), all providing insight into the world of reuse.

Only recently has attention moved to *online* secondhand spaces, which mainly focus on online auction sites, especially eBay (Clausen et al., 2010, Denegri-Knott and Molesworth, 2009, etc.). These online spaces offer a new dimension of convenience to secondhand goods; they are available around the clock and accessible from the comfort of one's own home. Freecycle is a relatively new phenomenon, an online network of local groups, which facilitate the disposal of unwanted goods to other members. The aim of Freecycle is to keep goods out of landfill, and it is the first secondhand space with this as its main priority, however it remains under-researched. Additionally, Freecycle offers a new aspect to secondhand consumption: the ability for members to publicly ask for specific items, unlike other secondhand spaces. Thus far only one published study has focused on Freecycle, (Nelson et al., 2007), looking at downshifting motivations for disposal of goods. Consequentially, there is no published data discussing the functionality and motivation for usage of Freecycle and the behaviour of its members.

To fill this knowledge gap and provide useful data to policymakers and practitioners, as well as to extend existing knowledge about secondhand space use, this paper presents new empirical research investigating Freecycle. A mixed-method case study examines the behaviour and motivations of Freecycle users, and we report on findings from an analysis of network posts, a membership survey, interviews with members and organisers.

The paper proceeds as follows: Section 2 presents the policy and theoretical context for the study, outlining waste reduction directives and what is currently known about secondhand space use, and introducing Freecycle. Section 3 describes our research methodology, and Section 4 presents the key empirical findings. In section 5 we discuss these findings specifically in relation to existing knowledge about secondhand space use, and consider what the study tells us about environmental motivations for reuse. Finally, we conclude in section 6 with reflections on the implications of our study for practice, policy, and research.

2 POLICY AND THEORETICAL CONTEXT

2.1 Waste Reduction

Despite the many disposal options available, throwing away is easiest and has few negative consequences for the individual at that moment in time. Therefore, with the waste hierarchy in mind, the UK government has decreased landfill waste from 16,890 to 12,490 tons in the past three years by making more sustainable actions easier for the public to perform. Also, in the past three years an increase was seen in local authority collected waste recycling (including recycling, compost and reuse) from 30.7% to 38.7% and waste recovery from 41.8% to 52.3% (DEFRA, 2010a). However, the government has mostly focused on the bottom of the waste hierarchy, recycling and energy recovery; they are easiest to attack from a top down approach. The next step, reuse, is easier to approach from the bottom up, and consequentially, many reuse schemes have taken form.

Waste can be defined as "any substance or object, which the holder discards or intends to discard" (Waste Framework Directive 75/442/EEC, 1975, Article 1); however this definition is very subjective. Gregson and Crewe (2003) argued that nothing can be defined as waste because the value of an object is determined by judgments made within context, hence the common phrase "one man's trash is another man's treasure". Therefore, if efficient schemes are available to the public, reuse is a plausible option to reduce waste. These schemes could prevent items going to landfills and potentially prevent items being purchased in the first place; however this conclusion cannot yet be made.

Since the 1970s there has been a great expansion of secondhand spaces primarily concentrated around revaluing secondhand goods and have evolved into a large diversity of reuse spaces (Gregson and Crewe, 2003). As seen in the waste hierarchy, reuse is powerful: it minimizes waste through life extension of a product (Alexander et al., 2009). Gregson and Crewe (2003) argue that because an object's value is determined by its context and the personal judgments of the beholder, nothing should be regarded as waste. When one person no longer values an object, others can rediscover the value in a cycle of consumption rather than the more linear version as described in many cases (Barr, 2004). Therefore, more reuse theoretically means that fewer firsthand products would be purchased. However the rebound effect—saved money, space, etc. creates a higher demand, in this instance firsthand goods—has been known to hold true in similar circumstances (Hertwich, 2005).

There does appear to be an indication of gender differences associated with secondhand spaces. As seen in many studies, women tend to be more involved with secondhand spaces in general (Lane et al., 2009; Mitchell et al., 2009, Nelson et al., 2007). This is probably due to the stereotypical gender roles played by women such as housekeeping. Women are also more likely to participate in wider trends of female involvement in environmental activities (Davidson and Freudenburg, 1996), which could explain the greater participation in reuse schemes. Conversely, age does not seem to play a large role, but overall middle-aged people seem to be the most involved in a variety of reuse schemes (Nelson et al., 2007). It is important to note that although people are often involved in both acquisition and disposition through secondhand spaces (Mitchell et al., 2009), they are two distinct, but intertwined practices (Gregson and Crewe, 2003).

2.2 Disposition

The act of disposal and exit of an object from someone's life is as important as the original consumption and entrance (Lucas, 2002). Disposition decisions are often quite complex and temporal judgments; rarely is there a clear association between functionality and value, but rather a multifarious matrix of design and aesthetic issues, design history, taste and subjective style judgments, which vary in both

time and space (Gregson and Crewe, 2003, pp. 118-119). Means of disposition also vary for the different reasons.

According to Cooper (2004, pp. 422), product life spans can be determined by a multitude of factors including "design, technological change, the cost of repair and availability of parts, household affluence, residual resale values, aesthetic and functional quality, fashion, advertising and social pressure." Three categories have been identified to explain the replacement of products: failure, dissatisfaction and change in consumer needs (Cooper, 2004).

Failure, or planned obsolescence, is determined by the technical lifespan determined by the producer, as well as consumer behaviour (Packard, 1960). Planned obsolescence depends on the ability to resist wear and tear, material degradation, process quality and factors relating to maintenance, and therefore is the shortening of an object's functional durability (Cooper, 2004).

Dissatisfaction or perceived obsolescence is driven by subjective change in the perception of a product that is influenced by societal norms such as status, fashion or aesthetic quality (Cooper, 2004). Perceived obsolescence is associated with symbolic durability, or its effectiveness of meeting the abstract needs of a consumer's image, and can be categorized into psychological, technological, and economic. Psychological obsolescence is abstract and subjective. It occurs when the owner is no longer satisfied by the object, or no longer sees value in it, typically influenced by peer group pressure, fashion cycles and advertisement (Cooper, 2004). Technological obsolescence occurs when owners are attracted to newer and more advanced functions in newer models, and consequently most electrical appliances are still functional when discarded (Cooper, 2004). Lastly, economic obsolescence is caused when products are considered no longer worth keeping due to economic factors which may be influenced by the cost of replacement models that are more energy-efficient or the cost of repair work (Cooper, 2004).

Changes in consumer needs are simply new stages in life such as moving house and having children (Cooper, 2004), or when an object no longer fits the consumer's extended self-concept (Albinsson and Perera, 2009).

Societal values, individual values, family learned consumption patterns, as well as other external forces have a great influence on disposition behaviours (Albinsson and Perera, 2009). The characteristics of an object that typically influence its disposition pathway include sentimental, economic and symbolic values of an object, as well as its actual condition, function, style, convertibility and monetary value (Hibbert et al., 2005). Situational characteristics can also influence the disposal method such as physical and social surroundings, temporal perspective, the specifics of the task, previous states, frequency of disposal, logistics of disposal, and potential methods of and attitudes towards disposal (Jacoby et al., 1977). Some owners are sad to let things go, some want to rid themselves of the past, some happy to sell and let it be valued by a new person, and some throw away because they see no value (Dengri-Knott and Molesworth, 2009).

Keeping, due to a reluctance of disposal or personality traits often referred to as "pack rat", results in the waste of resources that could be utilized by others (Harrel and McConocha, 1992; Lucas, 2002).

Throwing away, which may be viewed as irresponsible, often happens because the owner sees no value in the object or is not aware of the societal effect (Harrel and McConocha, 1992). Additionally, throwing away has a sense of finality, both structurally and symbolically, that is not found in any other type of

disposal (Lucas, 2002). The absoluteness of the bin recognizes that the object is no longer needed, wanted, or desired and the object is gone forever (Lucas, 2002).

Selling or swapping can be associated with Internet sites such as eBay and Gumtree, as well as car boot sales, classified ads, or similar means. In these instances a price is set, an exchange is made and the product life is extended. Most of the time such an exchange is catalysed by economic intent (Harrel and McConocha, 1992), but is not limited to individuals with lower incomes (Clausen et al., 2010).

Giving away or donating can occur with friends or family, as well as to brick and mortar secondhand shops and Internet sites such as Freecycle. Giving is associated with altruism or reciprocity (Harrel and McConocha, 1992). Human altruism is an anomaly in the animal world, and Andreoni (1989) was one of the first to link altruism to warm-glow giving, which begins to explain the contradiction between altruism and the self-interest of human nature. Such altruistic actions impose costs on individuals, which make the benefits seem insufficient to motivate the action. Altruism has evolved because it results in cooperative strategies; altruistic actions make individuals feel like they are providing societal benefits as well as benefits for themselves in the future (Fehr and Fischbacher, 2003). However, previous research has mostly focused on monetary charitable donations rather than secondhand items.

A fifth type of disposition is involved in downshifting or the voluntarily simplification of one's lifestyle. The reasons behind such practice usually includes a desire for more time, less stress, and more balance in life resulting in working less and escaping from the work and spend cycle of consumerism (Nelson et al., 2007). In such circumstances divestment removes the complexity in one's life by giving away or selling unused objects, resulting in personal fulfilment as well as clutter reduction (Nelson et al., 2007). An important part of downshifting is the decoupling of possession and self-identity, as well valuing goods for their functionality rather than branded or lifestyle values (Nelson et al., 2007). Therefore downshifters' identities are defined by their values rather than their possessions (Albinsson and Perera, 2009).

2.3 Secondhand acquisition

Gregson and Crewe (2003, pp.86) have identified three sets of shopping practices for secondhand spaces. First is when secondhand spaces are the primary means of provision, but firsthand spaces are desired. Second, is when secondhand spaces can, but do not have to, result in exchange. Third, is when secondhand spaces are used as a way to enact distinction and skill to create distinctive and 'knowing' appearances. Interestingly, some secondhand spaces are attempting to construct 'alternative economies' completely separate from capitalist exchange principles, globalization, homogenization, etc. However, Gregson and Crewe (2003, pp. 106) also argue that the anti-consumerist and pro-recycling rhetoric rarely stands in practice, as the standard definitions of value are equally important in both first and secondhand consumption, and mass-produced commodities are still involved in secondhand exchange.

Drawing upon evidence from a case study in Leicester, in the most deprived ward 94% of individuals involved in secondhand consumption were primarily motivated by economic necessity, the first set of shopping practices suggested by Gregson and Crewe (2003, pg. 86). Such practices illustrated meanings and identities as a symbol of exclusion from mainstream consumerism (Williams, 2003). In those cases reuse is about capturing the economic value through good deals and bargains, making the bargain worth as much as the object (Gregson and Crewe, 2003, pp. 11). Others may look at secondhand spaces as an opportunity for extending the lifespan of goods or as a method of redistribution to those in need.

Williams' study (2003) also showed that a second main motivator can be choice, although typically in more affluent wards. For more affluent wards such practices have positive views of secondhand spaces as sites of personal fulfillment. They give individuals an opportunity to create a unique identity or make a statement of whom they are, which is the third type of shopping practice mentioned by Gregson and Crewe (2003, pp. 86).

2.4 Environmentally orientated behaviour

Acquisition and disposition are separate practices with different habits and motivations, but share one similarity: they are both part of the greater cycle of reuse. However, despite a clear connection between secondhand goods and reducing waste to help the environment, this association often remains unnoticed. A recent study by Clausen et al. (2010) looked at the relationship between trading used goods and protecting the environment in eBay users. Only 27.6% of users agreed that protecting the environment was an important motive, and only 22% fit into the category of "environmentally orientated buyers of used goods." Clearly there is a discrepancy. Therefore, Clausen et al. (2010) suggested that the three groups of characteristics that influence attitudes and behaviours of consumption are socio-demographic characteristics, consumer preferences, and consumption behaviour. This research focuses mainly on the first, and explores the under-researched area of environmental motivations for reuse, through an examination of Freecycle, an online secondhand space created for just that purpose.

2.5 Introducing Freecycle/Freegle

Freecycle is an online network of grassroots communities with a mission of reducing waste, saving usable resources, and benefiting individuals through strengthening local communities. Freecycle began in Tucson, Arizona, USA in May of 2003. It originally ran as a small non-profit group providing garbage removal services to downtown businesses. Rather than watching usable items go to waste, the organization searched for local non-profits that may have a use for them. To increase efficiency an online network was founded "that permitted everyone in Tucson to give and to get" (Freecycle, 2010). Since then Freecycle has spread to over 85 countries with thousands of local groups.

The website is used like a message board that is set up in local areas through the online Yahoo! Groups facility (http://uk.groups.yahoo.com/), and is free for any individual to join. A member can publicly offer an item that he/she no longer wants, and any interested members can reply privately. Similarly, a member can ask for an item that he/she needs and members respond if they can help. Follow-up messages are used to denote offered items as being taken, and requests as being received. The only rules are that the item must be freely offered with no strings attached, and no illegal items or services are allowed. Local volunteer moderators oversee groups, assisting members and helping to ensure a smooth running service.

Norfolk Freecycle began in September 2004, with the level of traffic quickly growing until it was decided to divide into smaller, more manageable groups in 2005 (Figure 1). Norfolk Freecycle began with South Norfolk in September 2005, Breckland and West Norfolk in January 2006, Great Yarmouth in April 2006, North Norfolk and Norwich in June 2006, Waveney in July 2006, and Broadland in September 2006 (Norfolk Freegle, 2011). In September 2009 many UK Freecycle groups chose to break away from the US parent organization because of several disagreements regarding the operational side of Freecycle, creating Freegle (Free Giving Locally Easily). Freegle functions in the same way as Freecycle, and is still growing (Glaskin 2009). Consequentially, the findings of this research will be applicable to other Freegle

groups. However, this secondhand space has not previously been researched in relation to this environmental aspect. Therefore our study seeks to uncover the motivations of Freecycle users, their types of activity, and who participates.

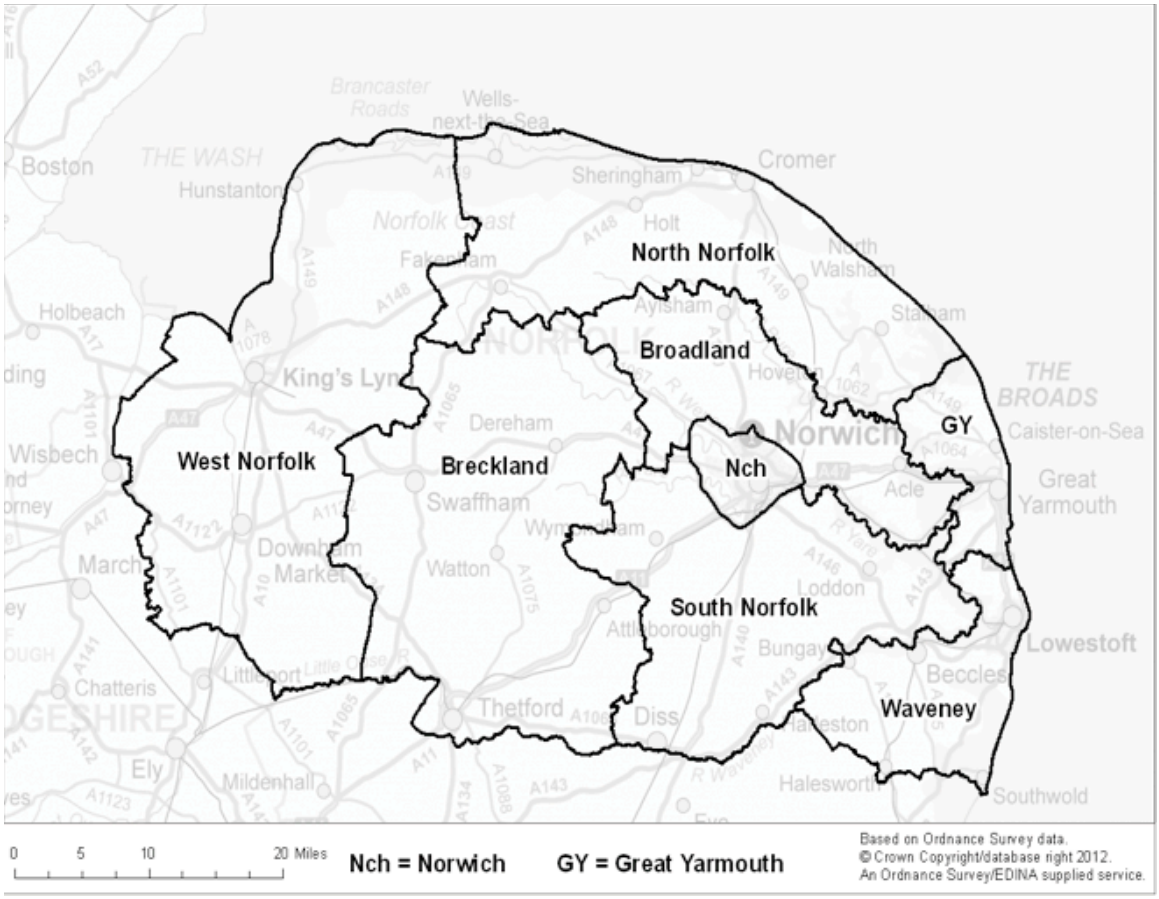

Figure 1. Norfolk Freegle's eight subgroups.

3 METHODOLOGY

We undertook a mixed-method case study of a several Freecycle groups in the UK. First, an analysis of the items listed on Freegle illustrated activity on the eight Freegle groups within Norfolk . Four sample months (August 2010, November 2010, February 2011, May 2011) were chosen to get the most accurate idea of yearly items offered, taken, wanted, and received. A period of a month provides sufficient time for responses to offered and wanted posts. A total of 18,101 messages were manually recorded into Excel between the four months; the member, action, item category, and date were logged. The categorisation was adapted from a previous study (Lane, 2010) to allow for comparison (Table 1).

Category title	Category description
Art	including pictures, paints, and equipment
Baby	everything baby related
Bicycle	everything bicycle related, except trikes
Books, comics, and magazines	
Cars, parts and vehicles	everything from car seats to caravans
Clothes, shoes and accessories	of all types and ages, including maternity wear
Computing	everything computer related except furniture
Consumer electronics	all electronics (white goods, phones, cameras, lights, TVs, video/DVD players, music centres) excluding garden, sporting and health and beauty electronics
Crafts	craft materials or equipment
DIY	tools, materials, etc.
DVD, film and video games	just the actual disks, not player
Everything else	everything else that does not fit another category
Furniture	household furniture
Garden	everything kept/used in the garden, including lawn mowers
Health and beauty	all products and gadgets related to health and beauty including home gym equipment, cosmetics/toiletries
Home	all soft furnishings, kitchen equipment and other things related to the home
Music	CDs, amps, sheet music
Musical instruments	instruments and instrument cases
Pets	everything related to domestic animals
Sporting goods	including fishing equipment pool tables, clothing, walking sticks
Tickets and travel	vouchers, travel tickets, and camping equipment excluding gas canisters
Toys and games	children's toys and board games, but also including adult games such as chess and drinking games

Table 1. Item categorisation descriptions

Second, a cross-sectional structured online survey was used to create an illustration of interactions occurring inside the network. Because Freegle is an online network, an online survey sent via email seemed the most suitable way to create a snapshot of Freegle users. Additionally, this method was chosen to generate the highest response rate; online surveys are convenient (Bryman, 2004, pp. 133), and allow for anonymity, increasing willingness to participate (Aldridge and Levine, 2001, pp.111-112). Although surveys often result in some respondent bias (Davies 2007, pp. 63-64), in this case the bias would most likely be towards more engaged Freegle users, and therefore the results reflect a large percentage of Norwich Freegle usage. The survey was designed to look at the general demographics of Norfolk Freegle users, how Freegle is used (offered, taken, wanted, received), and what motivates members to use Freegle rather than other secondhand spaces.

The questions were developed based on the results of the focus group, post records, and previous study surveys (Nelson et al., 2007; Lane, 2009). The first part focused on the participants' Freegle membership. The second part looked at general disposal mechanisms, touching on participants'

preferences of disposal and motivations of disposal, as well as disposal specific to Freegle. Part three focused on acquisition from Freegle, motivations, types and usage of items, and distances travelled for collection. Part four concentrated on influences of Freegle usage. The influences were broken into five general sections: environmental, personal finance, community, altruism, and convenience. The fifth part asked for general demographics: age, gender, education level, annual household income, household composition, employment and postcode. The survey was piloted with Freegle moderators to ensure clarity and ease of use, and was then sent as a message to the groups, reaching some members via email and other via the website depending on individual settings. Moderators from the Norwich, North Norfolk, West Norfolk, and Great Yarmouth groups agreed to participate, with the messages therefore reaching 40,061 members and resulting in 730 responses. It is important to note that individuals are allowed to be members of more than one Freegle group so the number of individuals reached was actually less than 40,061, and the other four groups were represented to some extent. The data was analysed with SPSS, and the Neyman-Pearson lemma was used to check for statistical significance.

Lastly, longitudinal semi-structured phone interviews were conducted to better understand the motivations of individuals. The aim of the telephone interviews was to get a deeper understanding of personal motivations for using Freegle. The interviews were semi-structured to allow interviewees to elaborate on aspects of Freegle and secondhand spaces that they felt had particular relevance or importance. The interviewees were chosen from those that had written further comments, suggesting interest in the topic. The group was broken into the top and bottom halves of annual household income because income plays a large role in the usage of secondhand spaces (Clausen et al., 2010). Twelve participants were chosen based on other demographics including age, gender, and employment, to represent different types of households. The interviews were designed to last between 10 and 15 minutes, recorded using Skype and Audacity recording software, and transcribed and analysed using standard qualitative analytical techniques.

Norfolk Freegle was chosen for this experiment because Norfolk has a wide variety of socio-economic demographics without any exceptional characteristics compared to the rest of the UK (ONS, 2009), and is active with an average of 150 posts per day. Therefore, it is a good representation of most UK Freegle groups and members.

4 RESEARCH FINDINGS

As of June 30, 2011, Norfolk Freegle groups had a combined total of 56,530 members with an average of 151 items posted each day; however only approximately 7.4% of members posted an item publicly during the four months analysed.

Similarly to the previous Freegle study (Lane, 2009), offers continue to be the most common posts (52%, previously 50%), 40% were reported as taken (21% of overall posts, previously 23%). Due to the small number of received messages they were combined with the taken messages. However, it is very likely that not all taken and received items are acknowledged on the group, as many members suggested.

Wanted posts continue to be a controversial topic on Freegle, but since the last study the percentage of wanted posts remains at 27% (Lane, 2009). Some members would like wanted posts banned whereas others would like to be able to post requests every day; the overall consensus seems to be that they are generally acceptable, but there are certain members that abuse them.

4.1 Who participates?

Age

The participants of the survey span a broad range of ages (Figure 2), the majority being middle-aged, between the ages of twenty-five and fifty-nine, also seen in studies done by Lane et al. (2009) and Nelson et al. (2007). The lack of a younger population is most likely because younger people tend to own fewer things. The lack of an older population is most likely because older people tend to interact with the Internet less frequently. Furthermore, a significant amount of comments suggest that a degree of computer literacy is required for Freegle usage and therefore could be a barrier for the older generation. Due to such a small representation of members 19 and under and 80 and over, the age groups were combined with 20-24 and 65-79 respectively for further analysis.

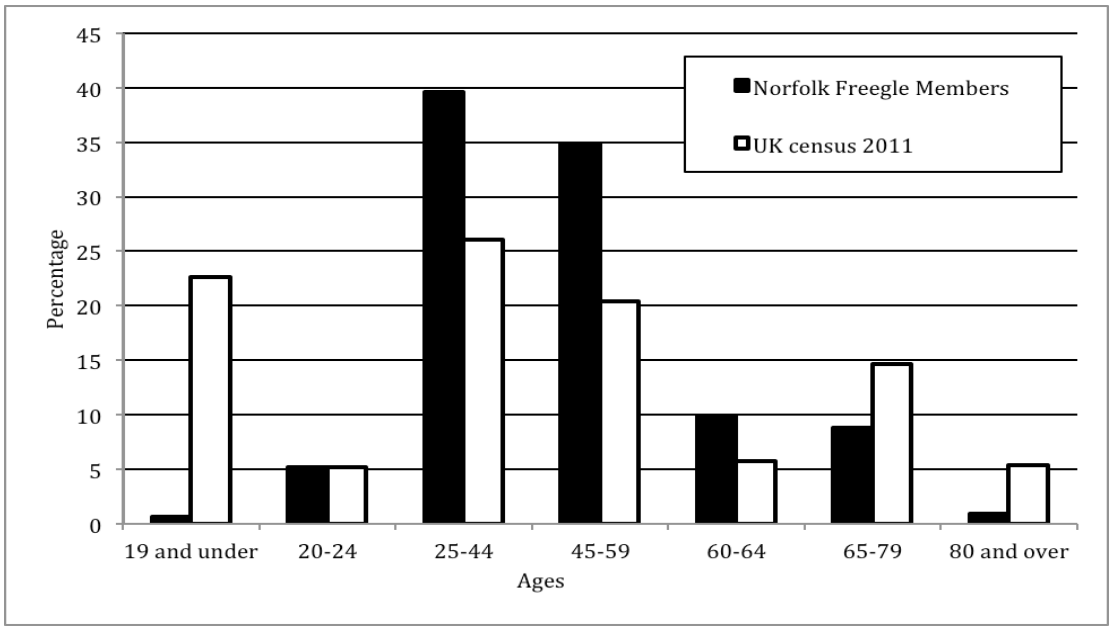

Figure 2. Comparison of age distribution across Norfolk Freegle members and the UK population. n=634.

Gender

There was a definite bias towards females; Freegle is about 65% women, which has been seen in other research. This could be due to classic gender-based roles in households (Lane et al., 2009), or possibly wider trends of female involvement in environmental activities (Davidson and Freudenburg, 1996). An additional explanation could be a trend of more reuse through financial necessity by single parents. Although there was a small representation of single mothers within the survey, the majority stated that the "necessity to save money" influenced their Freegle usage "a lot."

Income

Nearly one third of survey participants preferred not to give their income details potentially making this data biased. Despite that, a large percentage of Freegle members are in the bottom tenth national percentile for annual net household income after taxes (National Statistics, 2011), as shown in Figure 3.

This is obviously explained by the fact that Freegle is a medium where goods can be acquired for free, making it attractive to those with low incomes.

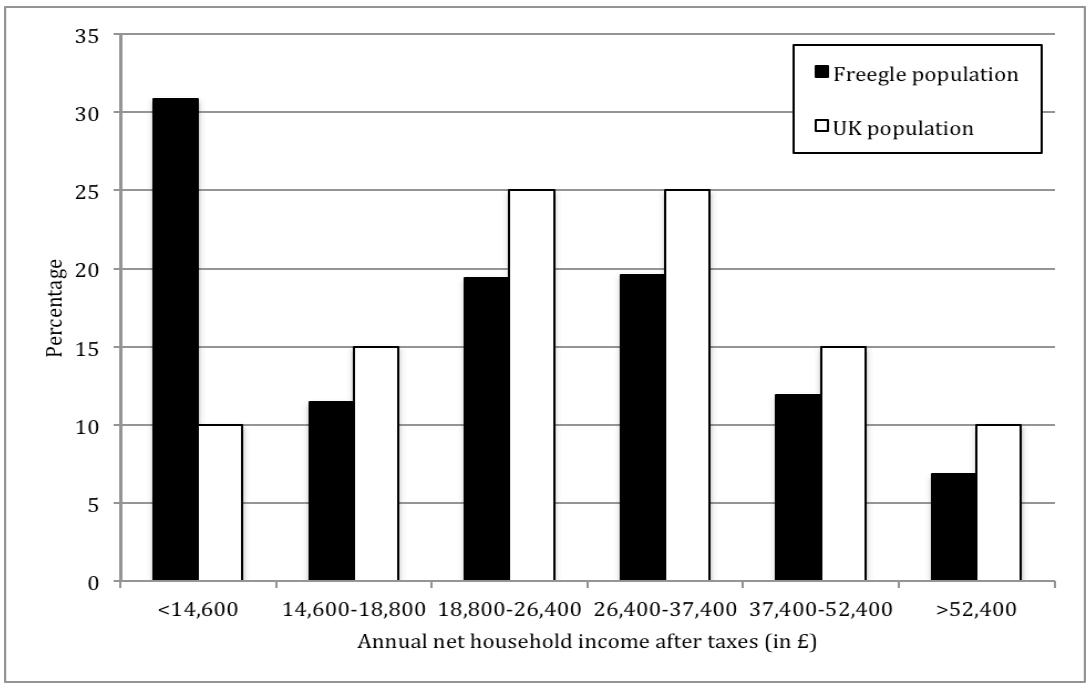

Figure 3. Distribution of annual net household income of Freegle members compared to the UK population. n=401.

Other

Education and employment were also investigated, but found to be similar to the general population, and because they are, to some extent, represented by income, they were not used in further research.

4.2: What do they do?

Browsing

The survey suggests that a significantly larger amount of activity occurs than is shown by public posts. Approximately 48% of survey participants generally browse (i.e. skim through posts for something useful or interesting on a daily basis). Additionally, about 70% of survey participants search for a particular item every few months or more frequently suggesting that this is done out of necessity.

Browsing for necessity becomes clearer when Freegle browsing, both generally and specifically, is distributed across the income brackets (Figure 4(a) and 4(b) respectively). This shows that income and browsing have statistically significant correlations ($p=0.002$ and $p=0.000$ respectively). The lower a member's income the more likely they will generally and specifically browse. Neither gender nor age appears to have a significant correlation with frequency of browsing.

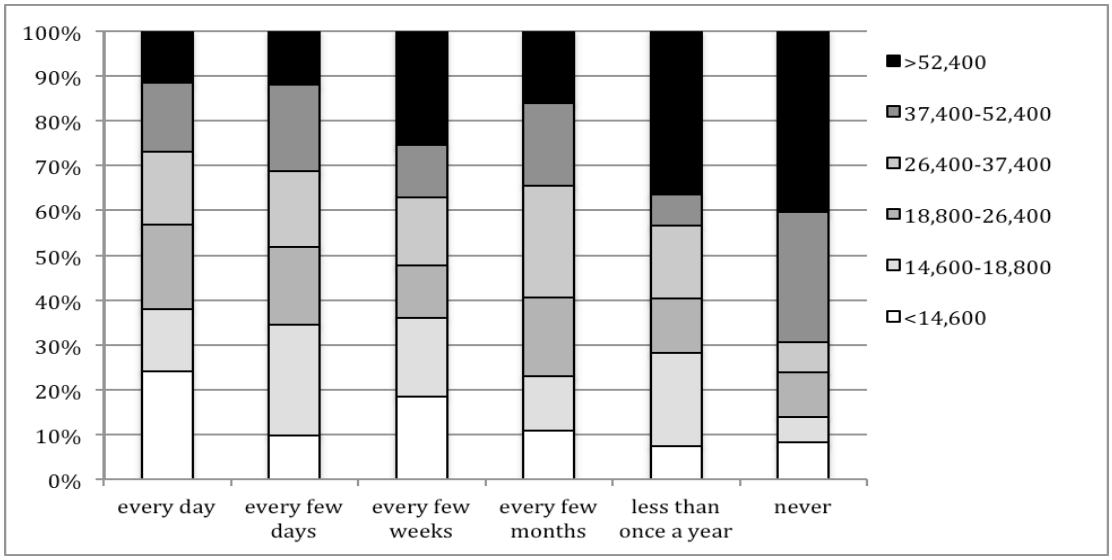

Figure 4(a). Percentage of Freegle members distributed across income brackets that generally browse Freegle posts at different frequencies. n=454.

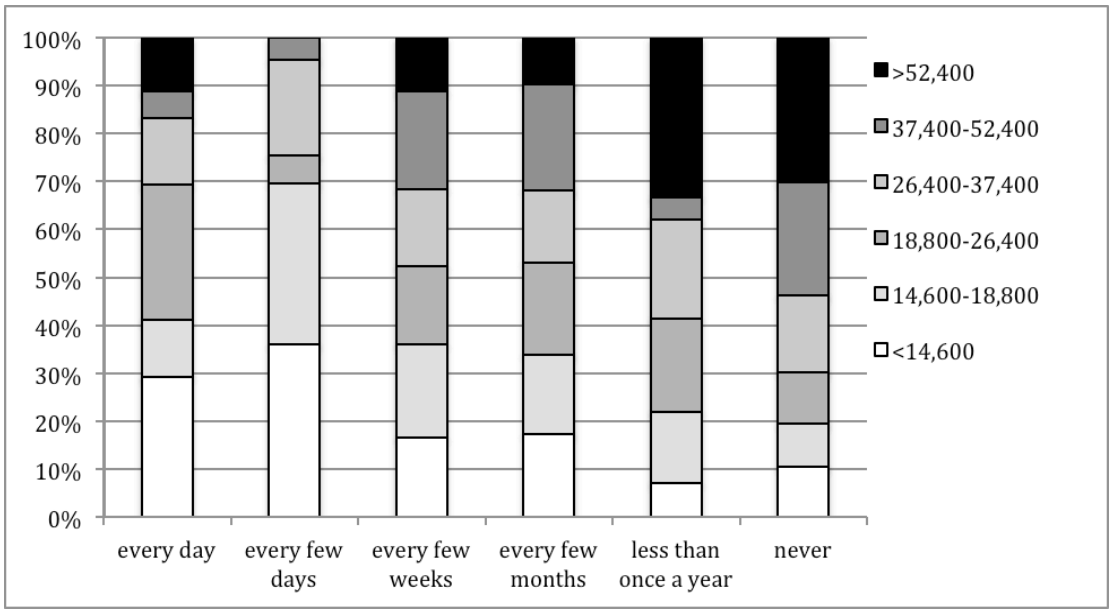

Figure 4(b). Percentage of Freegle members distributed across income brackets that specifically browse Freegle posts at different frequencies. n=454.

Disposition

Neither age nor gender affected the frequency of posting offers and replying to wants. Interestingly, income did not affect the frequency of posting offers, but members with higher incomes replied to wants much less frequently than those with lower incomes.

Acquisition

Of the survey participants 75% have acquired an item(s) from Norfolk Freegle. Age distribution of members that acquire items was statistically significant (p=0.000). This is probably because younger

people are typically looking for more items, but have less money. Eighty-five per cent of members twenty-four and younger have acquired an item from Freegle, while only 55% of members eighty and older have. Gender distribution was not statistically significant

It is clear that members with lower incomes are more likely to acquire items from Freegle (p=0.000). Approximately 85% of members in the bottom tenth percentile have acquired an item from Freegle, while just over 63% of Freegle members in the top tenth percentile have. Additionally, just over 60% of the top tenth percentile either never posted a want or posted a want less than once a year, while just over 40% of the bottom tenth percentile never posted a want or posted a want less than once a year. However considering that 18% of Freegle members in the bottom tenth percentile have not acquired an item from Freegle, and 63% members in the top tenth percentile have, shows that there are more reasons for using Freegle than just economic necessity.

4.3 What kinds of items are given away?

Aside from the economic aspect of secondhand spaces, another major attraction is the diversity of commodities available. Freegle epitomizes this diversity with its vast array of posted items: an amphibious car, a cash register, a chicken coop, an ophthalmoscope, and a mannequin are just a few examples. One member's main motivation for acquiring secondhand goods is "mainly the possibility of finding quirky or unique items," however, he believes that Freegle is "much more utilitarian; you don't necessarily expect to find beautiful or unique items… [Freegle] is much more to serve a need rather than a desire to own something or have something."

Disposition

Congruent with the study done by Lane (2009), the three most common categories were easily home (18.0%), furniture (14.6%), and consumer electronics (11.8%) (Figure 5). These goods are all updated regularly as the fashions of the consumerist society change. However, as mentioned in some of the literature (Alexander et al. 2009), these types of items are usually hard to find in most other secondhand spaces, specifically brick and mortar. Typically, other secondhand spaces do not accept electronics or large bulky items, and as fly-tipping is illegal, disposal of bulky items is often costly (Directgov, 2011). This suggests that exchange of home goods, furniture, and consumer electronics is a common use of Freegle due to a lack of a free alternative service.

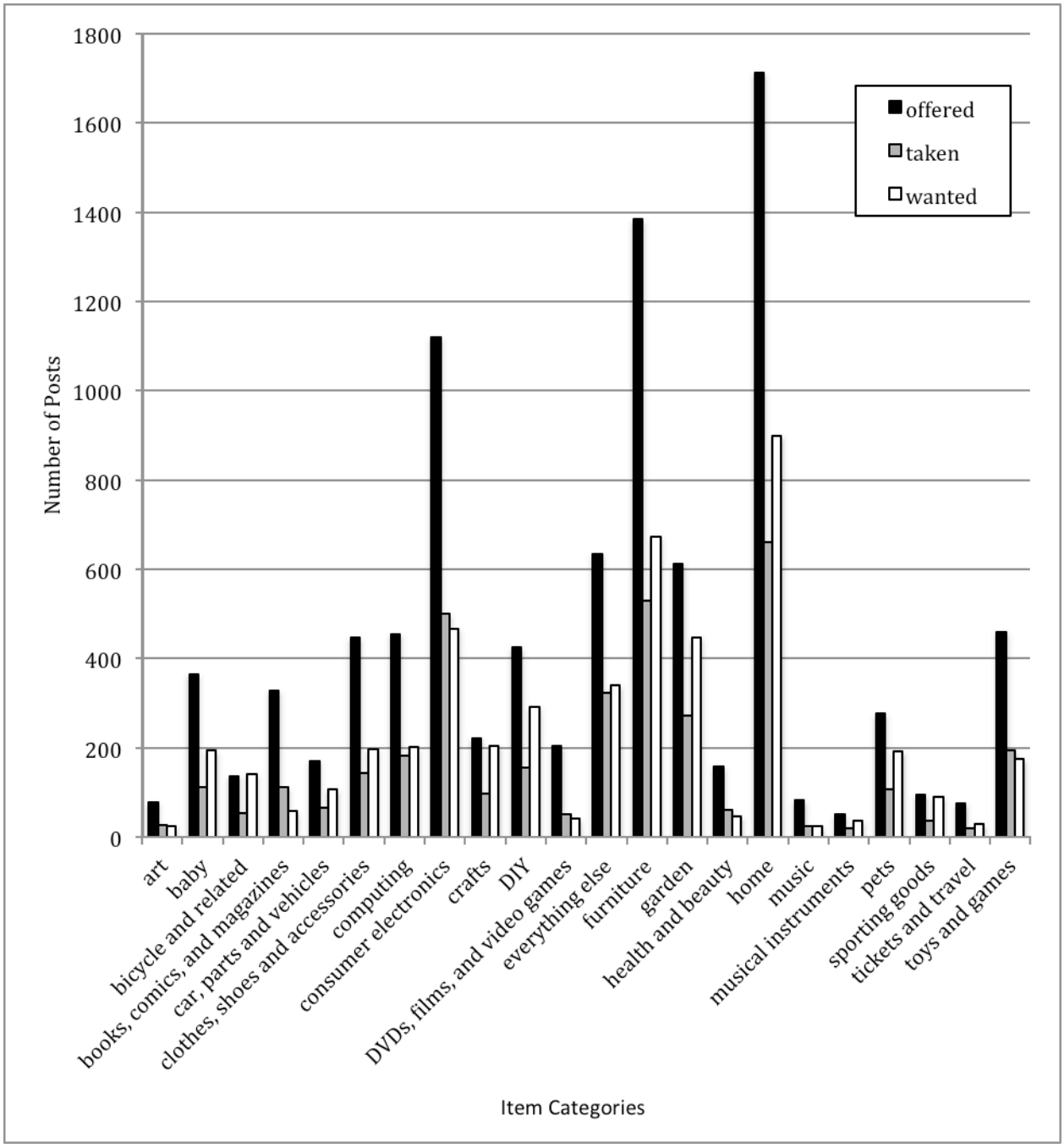

Figure 5. Aggregate number of items in each category during months analyzed (August 2010, November 2010, February 2011, and May 2011). n=18,101.

The smaller number of posts in other categories suggests that there are alternative disposal methods for those commodities. For example, Teddy and his wife "tend to put children's clothes and books in the charity shops because they are things that [they] feel people want to see before they make a decision, where as things that are easier to describe [they] tend to put on Freegle."

Acquisition

From the acquisition side of consumption, the most common goods seen on Freegle are also identified to be the most difficult to find secondhand (Alexander et al., 2009) and are typically more expensive.

The high number of wanted and taken posts in those categories confirms the niche that Freegle fills, providing an adequate alternative secondhand space for those types of goods. However, items in other various categories are also requested on Freegle most likely due to economic necessity.

4.4 What motivates members?

When answering the question of why do people use Freegle, it is important to note that some people use Freegle mostly for disposition and others use it mostly for acquisition, and motivations for the two are different. As mentioned earlier, motivations for giving away items to secondhand spaces are mostly altruistic (Harrel and McConocha, 1992), while acquiring secondhand goods are typically either out of economic necessity or as a means of personal fulfilment (Williams, 2003).

Disposition

As mentioned earlier, three categories have been identified to explain the disposal of a product: failure (planned obsolescence), dissatisfaction (perceived obsolescence) and change in consumer needs (Cooper, 2004). Figure 6 shows that perceived obsolescence appears to be a much greater cause of disposal for Freegle than planned obsolescence. This shows that despite the desire for reuse of many Freegle members, Freegle usage is not necessarily decreasing overall consumption, perhaps a result of the rebound effect (Hertwich, 2005), which is important to note, as this is one of the goals of Freegle.

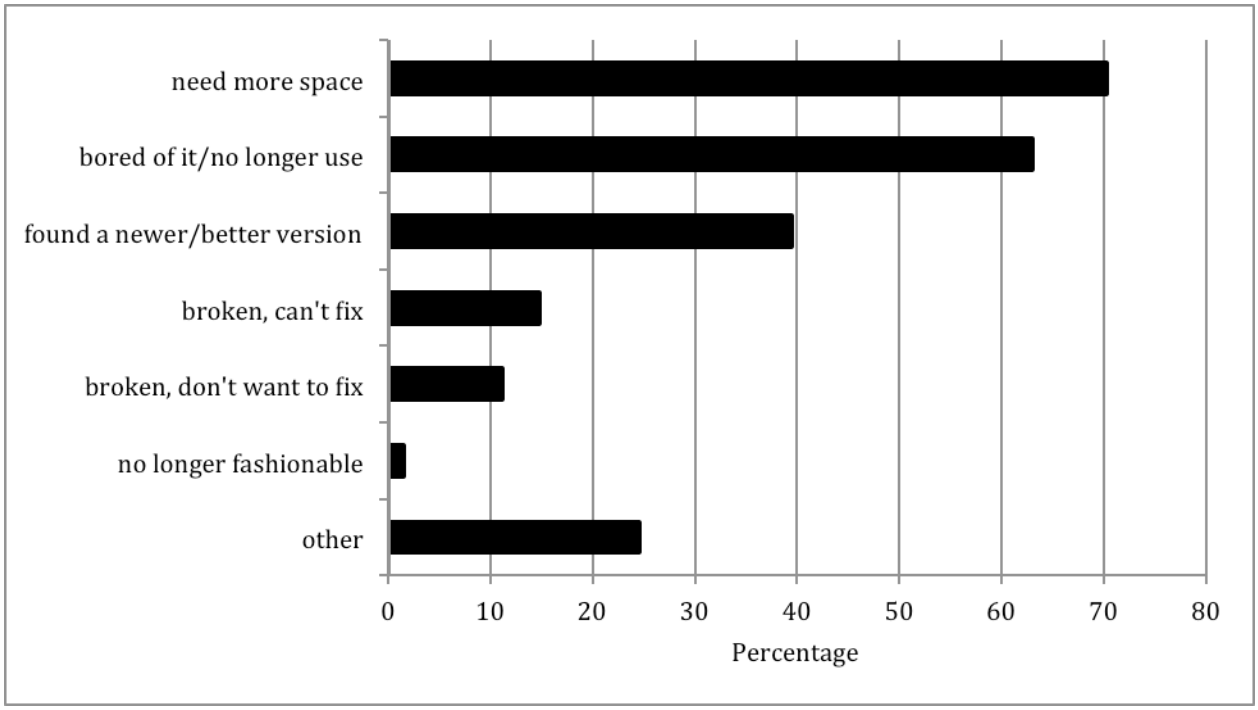

Figure 6. Percentage of why Freegle members usually dispose of items. Multiple response question. n=591.

Interestingly, younger members were more likely to dispose of items for “need of space” (p=0.000), “don’t use anymore” (p=0.001), “can’t fix” (p=0.001), and “don’t want to fix” (0.004). “Can’t fix” and “don’t want to fix” can probably be explained by the busier schedules of younger people as well as a lack of skill for repairing things. “Need space” and “don’t use anymore” are related to some extent, but the greater likelihood for younger members is unknown. Income and gender did not have a statistically significant correlation with reasons for disposal.

Figure 7 represents what Freegle members do with an item if another Freegle member does not take it. The high percentages of "try again on Freegle" and "give it away elsewhere" could represent the strong desire of most Freegle members to ensure that their items do not reach the landfill. However, approximately 45% of Freegle members said that they would throw the item away at least sometimes. This could either represent some members with less concern for the environment or a lack of an alternative fate of the item.

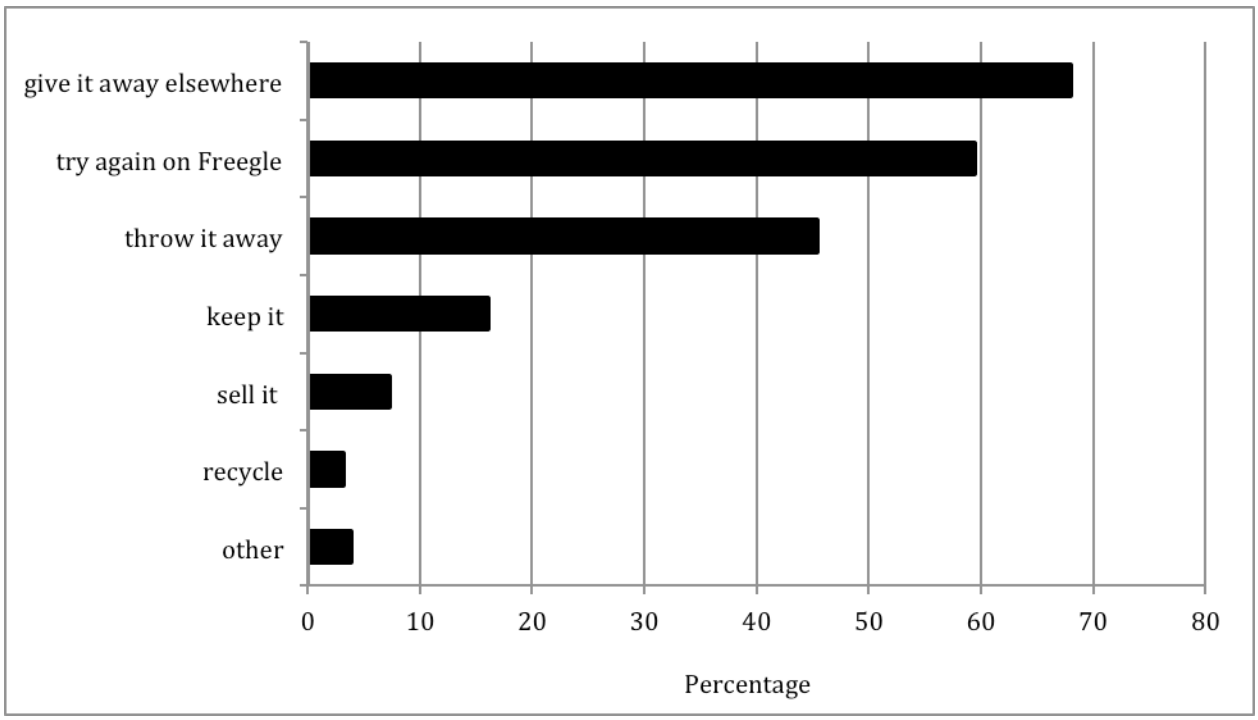

Figure 7. What members do if offered item is not taken on Freegle. Multiple response question. n=590.

Women are significantly more likely to "give it away elsewhere" (p=0.002), while men are more likely to "throw it away" (p=0.000) if no one takes the offered item. Additionally, younger people are more likely to "give it away elsewhere" (p=0.017) as well as "try again on Freegle" (p=0.003). Income had no significant correlation.

Acquisition

Literature shows that motivations for acquisition from secondhand spaces other than Freegle and Freecycle are much different than disposition. The main two motivations are out of economic necessity, and personal fulfilment, or an opportunity to create a unique identity (Williams, 2003). However, part of acquiring secondhand goods from brick and mortar establishments is the ability to touch and see up close, something that is not available on Freegle. However because people in the top tenth percentile of household income use Freegle to acquire items, there must be motivations beyond economic necessity and creation of a unique identity. This was illustrated by the question "Why do you try to obtain things from Freegle?" in Figure 8, the answer "like to reuse" was not listed as an answer to the question, however over 25% of members included it in the "other" section without any prompting.

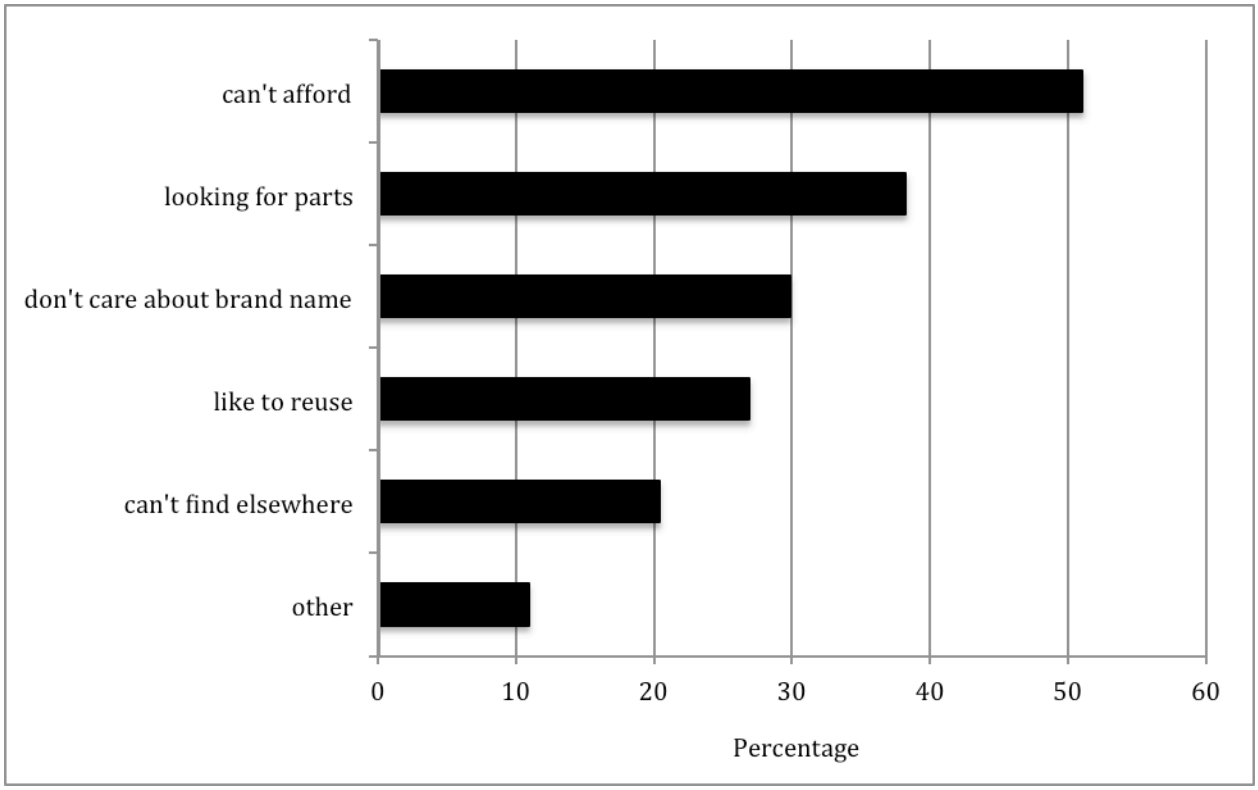

Figure 8. Reasons for acquisition from Freegle. Multiple response question. n=476.

Younger members are much more likely to acquire goods from Freegle because they "can't afford to buy" them (p=0.000): 89% of members aged twenty-four and under do while just over 33% of members aged sixty-five and over do. This is probably because younger members are looking for more items to start a new home, and those types of items are typically more expensive. Also, as expected, members with lower incomes are also more likely to acquire goods from Freegle because they "can't afford to buy" them (p=0.000).

Additionally, women are more likely to acquire items from Freegle because they "can't afford to buy" them (p=0.001) and they "like to reuse" (p=0.008), while men are more likely to acquire because they are "looking for parts/scraps/left over items" (p=0.024). Some female Freegle users are single mothers and therefore on a low budget as well as have less time to shop. Additionally, given that two thirds of Norfolk Freegle members are women supports the possibility of a wider trend of female involvement in environmental activities (Davidson and Freudenburg, 1996). Most likely more men are looking for parts because conventionally it is the man's job to repair things and participate in building and gardening projects around the house.

Influencing factors

There are an infinite number of factors that could influence one to use Freegle. Of the eighteen factors used in the survey, a total of five general influencing factors of Freegle activity were identified: the environment, personal finance, community, personal morals, and convenience (Figure 9).

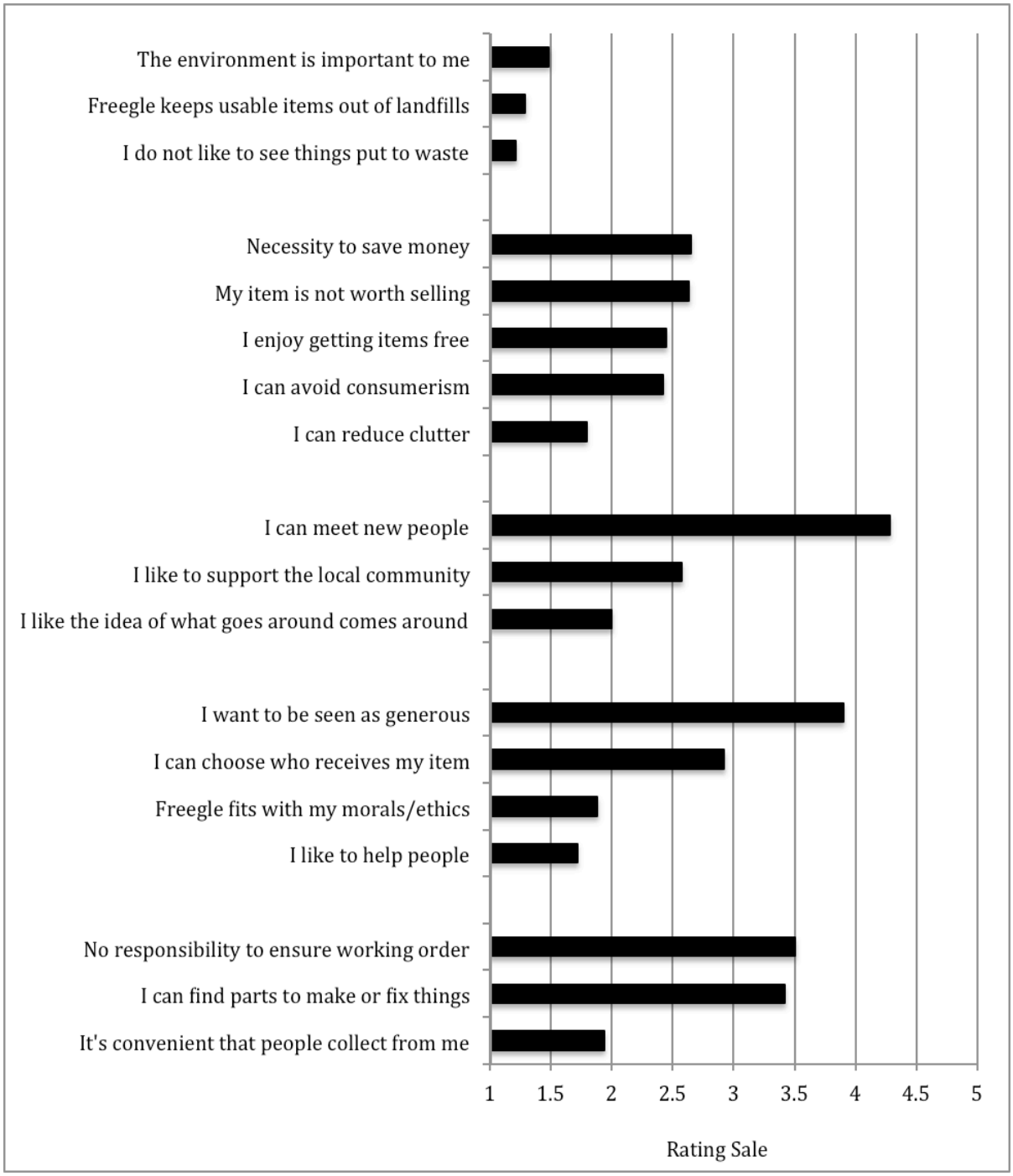

Figure 9. Influencing factors of Freegle usage; 1=very influential, 5= not at all influential. n=653.

Environmental factors were most important, followed by personal morals. Only four of the individual factors were considered to be between somewhat influential and not at all influential: "I can meet new people," "I want to be seen as generous," "I can find parts to make or fix things," and "no responsibility to ensure working order."

Such a high rating for "I want to be seen as generous" suggests that Freegle members do not participate in Freegle for their self-image. As one survey participant wrote, "I did not want to be SEEN as generous, I just felt it was important to share."

“I can meet new people” shows that members do not join Freegle to make friends, however friendships are created through Freegle. For example Daryl thinks “quite often [Freegle] is really a social fair, you meet people that you share common interests with, quite quickly and quite easily though Freegle.” This is probably more likely in the smaller Norfolk Freegle groups.

A high rating for “I can find parts to make or fix things” is most likely because a small portion of Freegle members use Freegle for that purpose; about 38% of Freegle members aquire items from Freegle because they are “looking for parts/scraps/leftover items,” and 18% of Freegle members said that they typically “use parts to fix or make things” that they have acquired from Freegle.

A high rating for “No responsibility to ensure working order” is most likely because only nine percent of Freegle members give an item away instead of selling it because its broken. Several members stated that if they do give away a broken item they clarify that in the post.

Figure 10 shows the statistically significant ($p<0.05$) correlations of influencing factors of Freegle usage with age distribution. Older members seem to care more about saving resources and supporting the community while younger people seem to be more influenced by financial factors. Interestingly, younger people seem to be more influenced by the ability to find parts to make or fix things while, contradicting the previous find that, fewer younger members use Freegle to find parts. The explanation for this contradiction is unknown.

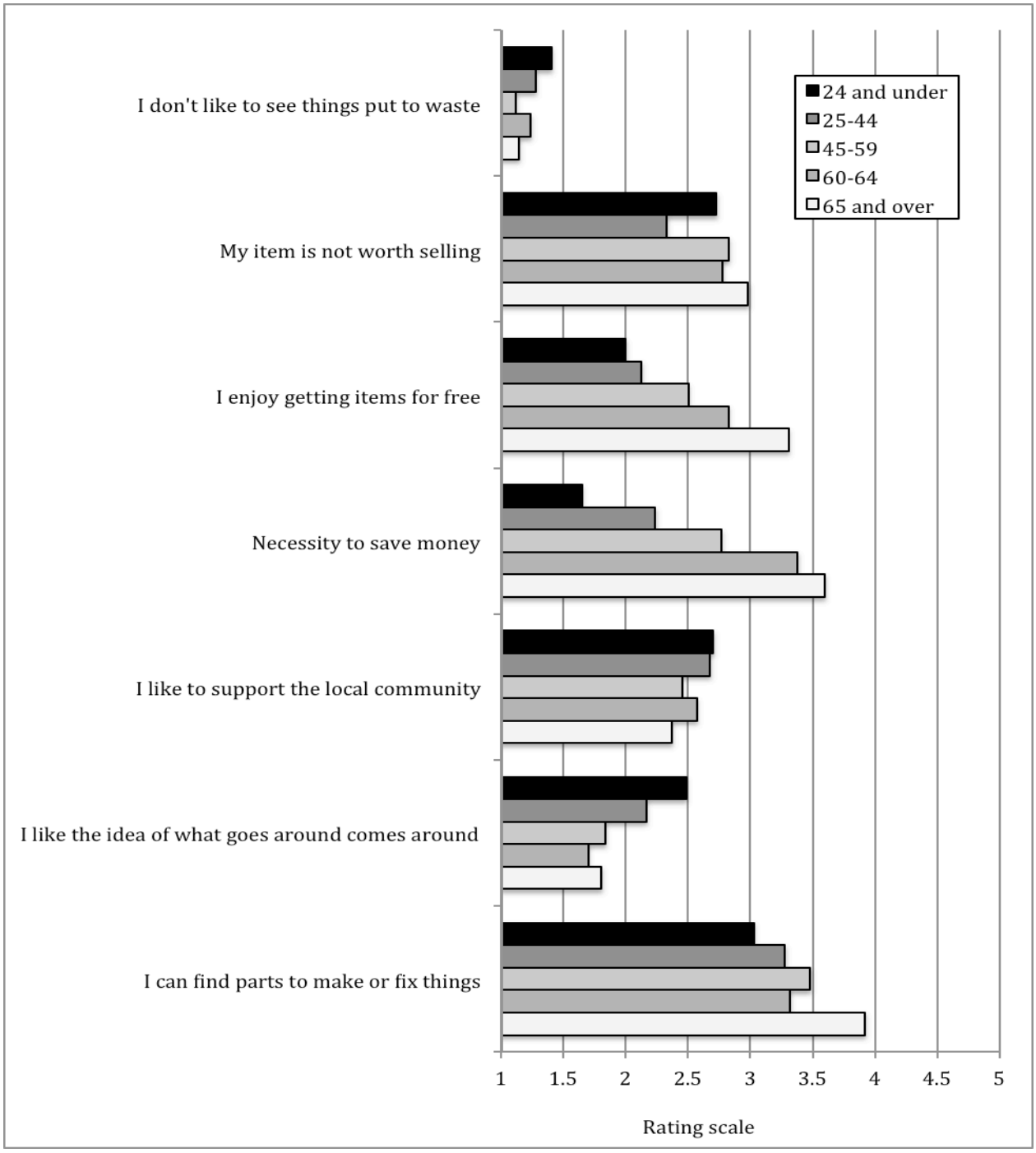

Figure 10. Influencing factors with statistically significant ($p<0.05$) correlations with age. 1=high influence; 5=no influence. n=577.

Figure 11 shows the influential factors of Freegle usage that have statistically significant ($p<0.05$) correlations with gender distribution. In general women seem to be more influenced by the stated factors than men. This could mean that there are other factors that influence men, or that overall men are less influenced by outside factors. Women were more influenced by all three environmental factors, four of the personal finance factors, one of the community factors, two of the moral factors and one of the convenience factors. Men were only more influenced by two of the convenience factors.

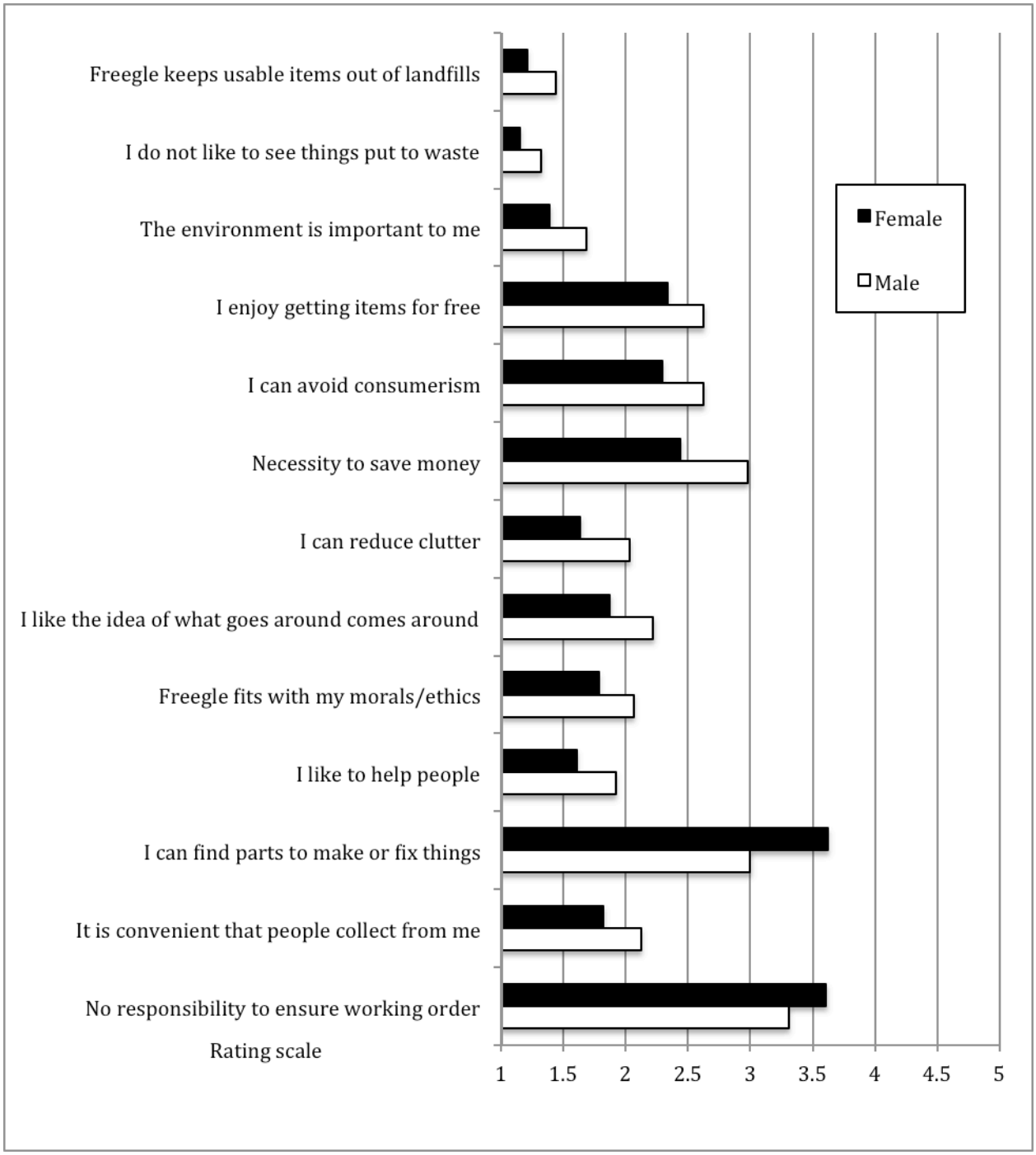

Figure 11. Influencing factors with statistically significant ($p<0.05$) correlations with gender. 1=very influential; 5=not at al influential. n=577.

Figure 12 shows the influential factors of Freegle usage that have statistically significant ($p<0.05$) correlations with the distribution of net annual household income after taxes. As expected, people with lower incomes are more influenced by "I enjoy getting items for free" and "necessity to save money" than people with higher incomes, and less influenced by "my item is not worth selling". Additionally, people with lower incomes are more influenced by the community aspect of Freegle, and the ability to find parts.

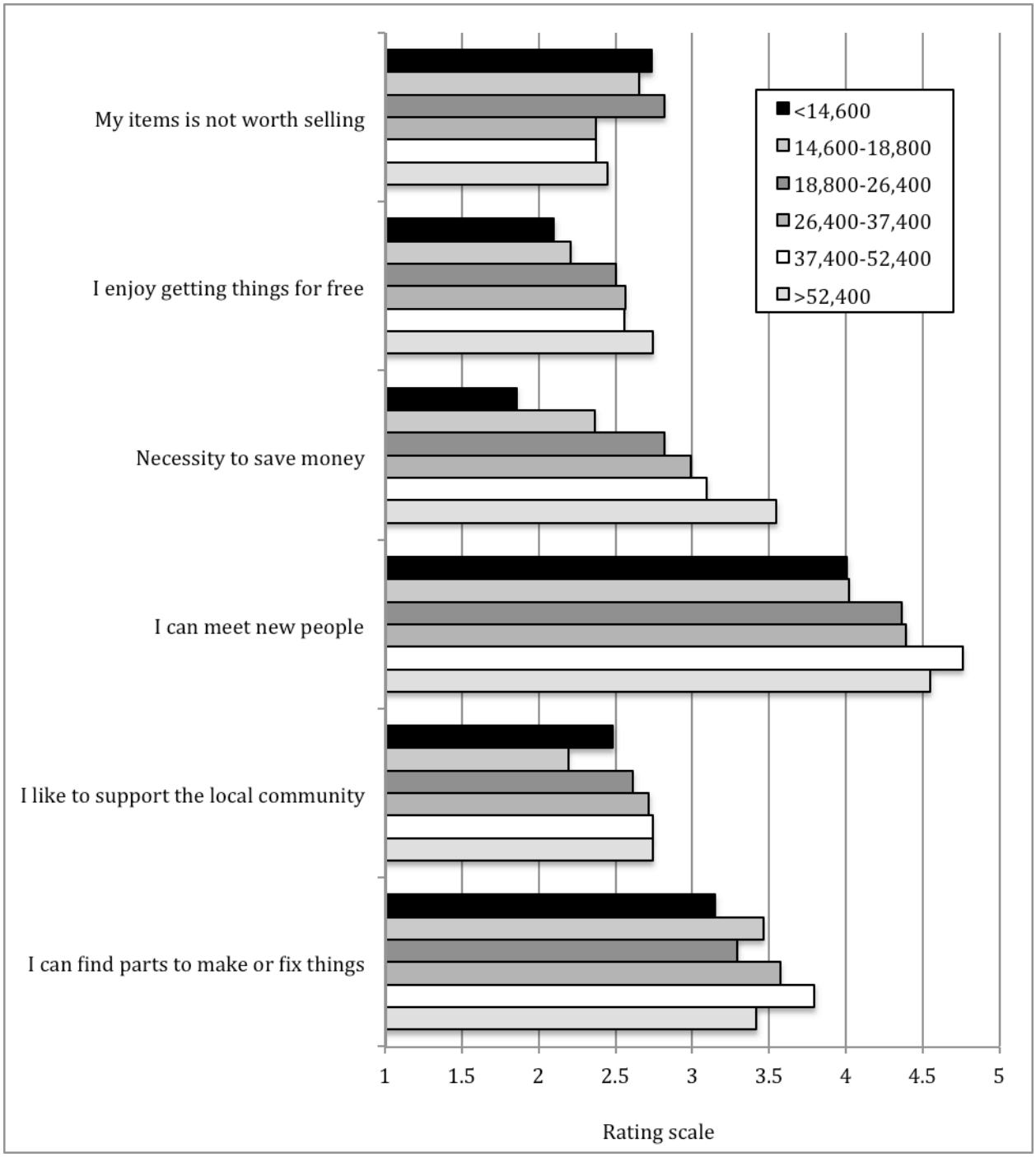

Figure 12. Influencing factors with statistically significant ($p<0.05$) correlations with annual net household income after taxes. 1=very influential, 5=not at all influential. n=454.

5 DISCUSSION

The previous analysis provides a foundation of information that helps to better understand Freegle as well as an answer to the underpinning question of why Freegle is used. It appears that Freegle is used by most middle-aged women with lower household incomes, but all demographics are represented to some degree. The most common items found on Freegle were home goods, furniture and consumer electronics, all of which are difficult to find in other types of secondhand spaces. Age, gender and income does not affect disposition on Freegle; however both younger people and people with lower household incomes are more likely to acquire items from Freegle. Lastly, Freegle appears to be used for

both its original purpose, keeping things out of landfill, and the reasons for the use of other secondhand spaces: generosity and economics.

Generosity and altruism can be described as something that we are taught, something that has evolved in human evolution because it benefits the group, or because there are future benefits for giving. When giving or donating to secondhand spaces the common motivation is out of generosity and morals, and is also the case for posting offers or replying to wants on Freegle. As stated by Maria, "I would certainly put [Freegle] in the group of things that I do primarily because it's the right thing to do." Just under two thirds of members that have posted offers do so because they like to give, and over two thirds of members have offered an item in which they still see monetary value. Additionally, 97% of members said "I like to help people" influences their Freegle usage between "some" and "a lot." It is clear that most members want to be helpful when disposing of an item because after posting an offer the majority of members wait a few days to get a variety of responses and then try to choose the person that needs it most. Along with generosity there is also an aspect of community. The vast majority of Norfolk Freegle members said that both "I like the idea of what goes around comes around" and "I like to support the local community" influenced their Freegle usage between "some" and "a lot." Sheila supports this with her comment, "It is that sort of all trying to do our best thing that I like about [Freegle]."

The environmental aspect explains both the acquisition and disposition sides of secondhand spaces which was summed well by Teddy: "[he doesn't] like seeing things thrown away, [Freegle] is a way of finding a home for them…and if [he] needs things, [he] would prefer to get them from somewhere that doesn't want, doesn't need them anymore." Every interviewee expressed some element of wanting to prevent waste as part of his or her motive. Of the eighteen potential influencing factors of Freegle usage, the three environmentally related factors were ranked the top three most influential. Importantly, when members were asked why they obtain items from Freegle, just below 25% of members wrote either that they don't like waste or they like to reuse in the "other" section without prompting. It is important to note that there is a clear distinction between keeping things out of landfill and helping the environment. Of the Freegle members 82.6% said "Freegle keeps usable items out of landfills" influences their usage "a lot", and 85.3% said "I do not like to see things put to waste" influences their usage "a lot," while only 68% said "the environment is important to me" influences their usage "a lot." Watson (2008) recently wrote a literature review regarding public attitudes, perceptions and behaviours towards reused goods and one of the key findings was "it appears that if people are asked about the environment they will voice strong concern. If, however, they are talked with about why they buy reused goods, the environment will figure considerably less prominently, if at all" (Watson, 2008, pp. 8). Freegle is publicized to have a mission of protecting the environment and therefore constantly associated with the environment. According to Watson (2008) this suggests that the environment is not the only motivation of acquisition through Freegle.

In other secondhand spaces there are typically two motivations for acquisition: economic necessity, and self-fulfilment. The self-fulfilment motivation requires a visual aspect that Freegle provides only occasionally. Economic necessity, conversely, was clearly demonstrated. Just under half of Freegle members that acquire items from Freegle do so because they cannot afford them. Also, 73% of Freegle members said that "necessity to save money" influences their Freegle usage between "some" and "a lot." Wangari said that her Freegle usage is "just budget really." However, acquisition is not just done out of economic necessity by the lower income brackets, it is also done to save money in general. Only 70.8% of Freegle members have acquired an item from Freegle, however the income distribution is

nearly identical between that percentage and the overall percentage. Although some of this is out of environmental concern, Miller suggests that the most important aspect of reuse practices is the concept of bargain rather than a concern for waste minimization (2000, pp. 96). This can be explained by the fact that 80.3% of Freegle members said "I enjoy getting items for free" influenced their Freegle usage between "some" and "a lot."

The idea of acquiring items from Freegle to save money then raises the question of where does the saved money go? Are they saving for retirement, a holiday, buying more expensive food, or buying more firsthand material items? Nearly all Freegle members are inspired by Freegle to keep things out of landfills, and part of this involves reducing one's material consumption. Nelson et al. (2007) successfully revealed that a portion of American Freecycle members have joined Freecycle to do just that. However, the answers to the survey question, "Why do you usually dispose of things?" suggests that although Freegle is serving its original purpose of keeping things out of landfills, it may not have an effect on firsthand consumption for many members. The top three reasons were: "need more space" (70.2%), "Bored with it/don't use it anymore" (63.1%), and "Found a newer or better version" (39.6%). This suggests that a significant portion of Freegle members dispose of things so that they can acquire new things. This raises the question of whether or not Freegle is enabling more firsthand consumption through the justification of preventing waste and by providing free necessary households goods allowing users to then buy more wants firsthand. Although this is beyond the scope of this research, it provides an interesting area to research Freegle's net affect on aggregate consumption.

This research shows that Freegle is providing an important and unique service. The high number of posts regarding white goods, furniture, and electronics in addition to comments made by the interviewees indicate that there is no alternative disposal or acquisition mechanism for such types of goods. Additionally, the motivations for using Freegle are the same as those for other secondhand spaces; Freegle simply adds a further dimension that until this point has not really been addressed. Obviously every secondhand space promotes reuse, but in most circumstances this is not recognized. Maria made an important comment that "[she sees Freegle] as part of a growing movement towards being less wasteful. It's the sort of thing that a few years ago would have been quite unusual, and its now becoming much more mainstream."

While motivations for the use of Freegle are similar to other secondhand spaces, altruism (e.g. Harrel and McConocha, 1992; Clausen et al., 2010) and economics (e.g. Williams, 2003; Miller, 2000), Freegle has added a new environmental dimension. However, although the desire to reduce waste seems well established, there is evidence questioning if Freegle has resulted in any reduction of mass consumption, a better way to keep things out of landfills, or if Freegle and keeping things out of landfills is just an easy association to make when asked.

6 CONCLUSION

This research confirms that Freecycle/Freegle has created a unique niche within the reuse world, and has successfully lengthened the life span of a vast number of goods by providing an online network to find new homes for unwanted items, rather than resorting to landfills. Freecycle users are motivated by both generosity and economics, similar to other secondhand spaces. The Freecycle network is able to function because the members represent a diversity of demographics, and all use Freecycle for different reasons (some specifically for disposition, some specifically for acquisition, etc.), and at different frequencies (some look daily, while others use it in phases).

The research adds to existing knowledge about secondhand spaces by demonstrating that Freecycle does achieve its objectives of reducing landfill waste, and indeed that this is a novel aspect of reuse motivation among participants, in addition to the usual motivations of altruism and economic necessity discussed in the literature. This opens up new research questions around environmental motivations for reuse and sustainable consumption.

Firstly, this study has raised a multitude of questions regarding environmental attitudes and behaviours of Freecycle members. Therefore, an important further study to look at other environmental attitudes and behaviours of Freecycle members in other areas of their lives would be valuable – do these motivations emerge through Freecycle use, and spill over, or are they pre-existing and independent to Freecycle activities? Another important topic could be to compare firsthand consumption of Freecycle users against a non-Freecycle user control group to measure the net effect of using Freecycle on aggregate consumption due the savings from acquiring free goods. Furthermore, one could look at the changes of firsthand consumption of new Freecycle members over time.

It is important to note that whether or not members are using Freecycle to protect the environment does not necessarily matter; reuse of large and bulky, but usable items, is happening regardless. Freecycle offers a convenient and free service run in local communities by local people, and it is working; however there is always room for improvement. Currently Norfolk Freegle is working to create a new system that addresses the problems found through this research. One of the biggest complaints of Freecycle members was the abuse of the website by selling things on to make money. Therefore, perhaps a member rating, similar to amazon.com, might be useful. Secondly, having a set template to complete, similar to gumtree.com, could be advantageous, especially if there was a place to post photographs, as many members mentioned it would be helpful to see the item. Lastly, Freecycle has mostly been spread by word of mouth, so some sort of advertising based on the motivations of individuals identified by this research would be invaluable.

This research also has implications on future policy making. Freecycle is used because it is convenient, and for some it is a part of life. Therefore waste reduction cannot be something spontaneously added into one's life; it must be consciously blended, to prevent inconvenience. Additionally, many members use Freecycle for altruistic reasons; they feel good about helping others. Therefore, waste reduction should be linked with other motivations that matter to individuals, such as altruism or economic necessity, so that even if the environment is not a priority, there is still motivation. Furthermore, to continue to progress alongside the Waste Framework Directive, provided by the EU, Freecycle and other reuse schemes must continue to expand, so support and promotion by the government are important.

The important take home message of this study is that more research needs to be completed to better understand the environmentally orientated behaviour of Freecycle users. This information will be able to steer the promotion of reuse, continue expansion and eventually decrease firsthand buying. However, in the mean time, Freecycle offers a convenient and free service operated in local communities by local people, resulting in decreasing landfill waste and appears to be having a positive impact on both the livelihood of individuals and the environment as a whole.

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