INCREASING RECYCLING THROUGH EFFECTIVE RESIDENT ENGAGEMENT AT MULTIPLE OCCUPANCY HOUSING DEVELOPMENTS: THE WASTE ITS MINE ITS YOURS PROJECT

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EXECUTIVE SUMMARY

Current government policy in England is to recognise and reward the public for their recycling efforts. Under the Reward and Recognition programme the government funded pilot schemes to test different approaches to behaviour change that could lead to increases in recycling.

Historically the management of waste in flats, particularly in perceived hard to reach communities has been poor. Reasons include a lack of accountability for the waste generated and an absence of sense of community. Often local authorities provide inadequate facilities and have limited time and resources to effectively engage with residents. There is the perception that residents in Housing of Multiple Occupancy (HMOs) are transient thereby making it hard to implement sustainable recycling programmes. If the UK is to meet the 50% recycling target by 2020, HMOs and Housing Associations can play a significant role. In 2005/06 46% of new households built were flats and 22.6% of the current housing stock is classified as flats. Housing Associations provide 2.5 million homes to 5 million people and could act as a facilitator to promote behaviour change across the country.

The *Waste Its Mine Its Yours* pilot project was funded by the government Reward and Recognition Fund and ran from 2011-2014. It was a partnership between Housing & Care21 and AmicusHorizon (both Housing Associations), ARA UK and the University of Brighton. The project aimed to change the waste behaviour of residents living in Housing Association managed properties and endeavored to sustain changes beyond the lifetime of the project. Specifically it aimed to (i) reduce the amount of residual waste generated (ii) increase the rate of recycling (iii) increase the quality of recycling (iv) reduce levels of food waste collected for disposal or recovery by composting on site (v) evaluate the impact of recognising residents for their efforts and the role of rewards in increasing recycling rates.

The project put residents at the heart of identifying problems, providing solutions and implementing an outcomes based waste management system where they live. This included at some sites implementing recycling for the first time, changing collection arrangements, the collection of new materials (including batteries and textiles) and installing over 260 composting units.

The project covered 3,398 residents at 73 sites, across 31 local authorities and tested the impact of different approaches with sites split into three groups (i) control (ii) engagement – recognising residents for their recycling efforts (iii) reward – residents offered rewards based upon changes in recycling behaviour.

A rigorous data collection protocol and a bespoke resident engagement programme was implemented at each site. This paper presents an overview of the project from initial engagement to the impact. The outcomes from the project could help to inform policy and act as a model for improving how waste is managed in HMOs and Housing Association managed properties.

INTRODUCTION

Based upon the census of 2011 there are 27.6 million household spaces in the UK. 22.6% of these would be classified as flats – this includes purpose built flats, converted houses, flats in commercial buildings and blocks ranging from low to high rise (Office for National Statistics, 2014). Across the country there is significant variation in types of housing provision, with some parts of London having flats represent over 80% of housing (London Assembly, 2011). Across the EU-28 41.6% of dwellings are classified as flats with rates ranging from 65.1% in Estonia through to 13.4% in Norway (Eurostat, 2015).

Historically the management of waste in flats – referred hereafter as Housing of Multiple Occupancy (HMOs) - has been poor. There are a wide range of reasons for this including lack of internal and external storage space, lack of access to recycling services, distrust of local authorities, lack of awareness and regimes on site (Alexander et al., 2009, McQuaid & Murdoch, 1996, Waste Watch, 1997).

The problem is exacerbated by some local authorities providing inadequate facilities and having the limited time, skills and resources to effectively engage with residents that could lead to successful programmes. With the economic crisis which began in 2007/08, resources are becoming scarcer - in 2010 the government announced public spending cuts of £81 billion by 2014/15 (HM Treasury, 2010). With ongoing cuts to local authority budgets there are fewer resources available to effectively engage with residents. The Chartered Institution of Waste Management and Ricardo-AEA (2015) published the results of research looking at the impact of austerity across local authority waste, recycling and street cleansing services. They found that 52% of local authorities had made back office job cuts and 37% front line job cuts. 48% had seen reductions to their communications budget, 26% reduced waste minimization activities and 43% moving to automated/on line customer contact. The recycling rate in the UK is currently stagnating; in England 53% of local authorities saw a reduction in their recycling rate between 2012/13 and 2013/14 and 77% are currently recycling less than 50% (Department for Food, Environment and Rural Affairs, 2013; Department for Food, Environment and Rural Affairs 2014). With fewer resources available to local authorities, achieving the Waste Framework Directive target of 50% recycling by 2020 will be challenging.

Improving waste and recycling service provision in social housing could make a significant contribution to help the UK meet the 2020 target. As Scanlon et al (2014) explains there are varying social housing models in different countries. In the UK there are two main types (i) direct municipal managed housing, traditionally known as ‘council housing’ (ii) non-profit organisations known as Housing Associations. This paper focuses specifically on Housing Association social housing. Housing Associations provide 2.5 million homes to 5 million people in the UK (National Housing Federation, no date) and on average built 18,800 new homes per year between 1978 and 2013 (Lyons, 2014). Approximately 40% of Housing Association homes are HMOs in England and are comprised of predominantly purpose built low rise flats (32.1% of total Housing Association dwellings), as opposed to purpose built high rise (2.9%). 40.6% of Housing Association dwellings are located in the 20% most deprived areas (Department of Communities and Local Government, 2010a). Housing Associations themselves could act as a facilitator to promote behaviour change within their communities leading to less waste and increases in recycling. They could help to fill some of the resource gap left from the austerity cuts.

Despite big improvements in service provision within HMOs in recent years, and valuable research and guidance from organisations such as Waste Watch (2006) and WRAP (no date), there is an still opportunity to significantly increase recycling in these properties. Green Alliance (2012) examined recycling specifically in high rise housing and they found that many tower blocks still suffer from poor or non-existent recycling and food waste collections. At the start of the project presented in this paper 12 out of 73 sites did not have access to any recycling on site per se with others having limited services compared to neighbouring single households (e.g. paper only collections) therefore reflecting that many sites still don't have basic or adequate service provision.

Current government policy is to reward people for their recycling efforts. In the Coalition Agreement the government committed to *"work towards a 'zero waste economy', encourage councils to pay people to recycle, and work to reduce littering"* (HM Government, 2010). As a response Defra (Department for Food, Environment and Rural Affairs) launched the Reward and Recognition Fund in June 2011. Up to £2 million of funding was made available from 2011 to 2014 to test out how waste behaviour is affected through different kinds of reward and recognition schemes. Rewards could include financial rewards, e.g. vouchers, donations to charities, cash or discounts on goods and services. Recognition could include personalised feedback about how much a household has recycled. Local authorities and community organisations were able to make applications and in total 28 schemes were funded.

This paper presents the results of the *Waste Its Mine Its Yours* project that was funded through the Reward and Recognition Fund. Please note that DEFRA are currently analysing the results from all projects and will be publishing the final report in late 2015.

AIM AND OBJECTIVES

The main aim of *Waste Its Mine Its Yours* was to change the waste behaviour of residents living in Housing Association managed properties and endeavored to sustain these changes beyond the lifetime of the project. The project specifically aimed to test the impact on levels of recycling and behaviour by (i) engaging with residents through working with them to improve services and recognising their recycling efforts (ii) offering rewards to residents for recycling. The objectives were to:

(i) Reduce the amount of residual waste generated;

(ii) Increase the rate of recycling;

(iii) Increase the quality of recycling;

(iv) Reduce levels of food waste collected for disposal or recovery by composting on site by installing Green Johanna composters. These composters are fully enclosed and can accept all food and garden waste;

(v) Test the role of recognition and rewards.

The project was a partnership between Housing & Care21 and AmicusHorizon. Housing & Care21 manages over 18,000 flats across 470 sites throughout the UK. The resident profile is over 50 years of age and includes vulnerable people living in sheltered accommodation. AmicusHorizon provides housing and support needs to over 28,000 households in London, Kent, Surrey and Sussex. The profile of residents ranges from families with young children to aging citizens. The Housing Associations complement each other representing a wide spectrum of multi-cultural residents in flats and perceived hard to reach communities. The resident profile included one or more of the following characteristics: living on low income, unemployed, physically challenged, assisted living and on social benefits. 16 sites were located in Hastings which is rated the 23rd most deprived local authority area in the country (out of 326 local authority areas) based upon the government's Indices of Deprivation (Department of Communities and Local Government, 2010b).

The authors of the paper were responsible for conceptulising and managing the project, engaging with residents, monitoring the impact and evaluating the results. The methods used were based upon pilots that were run in both the UK and South Africa.

METHODOLOGY

Research as far back as Waste Watch (1996) highlighted that if a recycling scheme was to be successful in social housing, it needed close consulation between residents, housing management, local authority officers and contractors. Moreover the scheme and messages should be tailored to the specific community and frequent information and engagement is required. These key elements were integrated throughout the lifecycle of the project.

A long list of sites was provided by the Housing Associations and these sites were initially visited to assess their suitability to be included in the project and to explain the project to site managers and key residents. Following these visits 73 sites across 31 local authority boundaries throughout the south of England were included in the project. As shown in Table 1 participating sites were placed into 3 categories: Control (no engagement), Recognition (engagement only) and Reward (enagagement and reward).

Table 1: Breakdown of project by number of sites, flats and residents

Category	Activity	Sites	Flats	Residents
Recognition	Engagement with residents who were recognised for their recycling efforts	24	759	947
Reward	Engagement with residents who were recognised for their recycling efforts. Following the recognition stage they were offered a reward to benefit their site based on changes to waste behaviour	30	1,309	1,647
Control	No contact – monitoring only	19	637	804
Total		**73**	**2,705**	**3,398**

Table 2 provides an overview of activity at Reward and Recognition sites. Interactive workshops were held at each Recognition and Reward site. The workshops provided a platform to disseminate important information on waste and details of the waste services available at the site. Residents identified the barriers to improved recycling and suggested ideas on how services could be changed conducive to their needs. The workshop also included a demonstration of Green Johanna composters.

The project team worked with the Housing Associations and local authorities to follow up on the requests of residents. This included working with local authorities to introduce recycling from scratch at some sites, changing the bin configuration conducive to the needs of residents, redevelopment of bin store areas, improving accessibilty for people with physical challenges or setting up the collection of additional recyclables.

During the project there was on going communication with residents living at Recognition and Reward sites. This included a newsletter bespoke to the project, working with the Housing Association to include articles in their national newsletters, a thermometer poster bespoke to each site on display in communal areas indicating the current recycling rate and articles in the local press.

Following the completion of phase 2, Reward sites were offered rewards to benefit their sites based upon changes in behaviour. The idea was to test if the offer of rewards had any discernable benefit over engagement only.

Table 2: Breakdown of activities at Reward and Recognition sites

Activity	Overview
(i) meetings with site managers, staff and identified opinion leaders	Meetings were arranged at each site with the manager and relevant staff to explain the project including the aims and the level of involvement required from staff and residents. Opinion leaders were identified at the meeting and included Chairpersons of Resident Associations, Green Champions (people concerned about the environment), active gardeners and residents popular at the sites. An initial site assessment was also undertaken by project staff including collating photographic evidence of waste management.
(ii) Contact with site managers	Site managers were then contacted to set up workshops at a time, date and venue convenient to residents.
(iii) Delivery of interactive workshops bespoke to each site	The interactive resident participative workshops lasted 2.5 hours and provided a platform to disseminate information to residents on waste management including the environmental, economic and social impacts of waste and information on the waste services available at the site. The workshops were configured to allow residents to provide feedback on the barriers to improved recycling and ideas on how services could be changed conducive to their needs. Information was provided on the benefits of composting and how to use the Green Johanna composters. 639 residents attended workshops – 25% of total residents at the 54 Recognition and Reward sites.
(iv) Installation of Green Johannas	Participating sites were registered with the Environment Agency to ensure that on-site composting posed no risk. The Green Johanna composters were installed the day of the workshop to provide those residents who wanted to participate with the resources to do so. This specific composter was chosen as the project team had extensive experience of using and trialling the unit both in the UK and South Africa. They have proven to be an effective on site affordable solution to managing food waste. The fully enclosed unit addresses problems with vermin.
(v) Requirements for each site	The workshops included input from residents regarding barriers to recycling, their needs and ideas for improving services. This information was used to develop a bespoke profile of the requirements for each site.
(vi) Improvements to services	The project leader worked with stakeholders to implement the changes requested by residents where possible. This included working with local authorities to introduce recycling from scratch at some sites or changes to the bin configuration conducive to the needs of residents. Other examples included redevelopment of bin store areas, rolling out the collection of small WEEE, textiles, bric-a-brac and batteries.
(vii) Engagement with residents	Four levels of strategic communication were implemented at Recognition and Reward sites recognising the efforts of participating residents and providing updates on progress: (a) Release of a newsletter bespoke to the project (b) Working with the Housing Association communications departments, articles were included into their national newsletters which were circulated to every resident (c) A thermometer poster bespoke to each site was on display in communal areas of the Recognition and Reward sites indicating the current recycling rate. This was updated after each round of data collection (d) Articles in the local press. Both the newsletter (a) and recycling thermometer (c) featured images of residents at that specific site. Later in the project for Reward sites there were three phases of rewards.
(viii) Ongoing support to each site	During the project there was engagement and support to each site. This included face to face interaction with site managers and residents during spot checks and ongoing dialogue over phone, text and e-mail to answer any questions or queries and receive updates.

The project aimed to avoid rewarding sites purely on increasing recycling rates as is used in other projects as this alone is not necessarily a clear indication of *sustainable effective* waste management behaviour. The following criteria was used: percentage point increase in recycling compared to the previous phase, actual recycling rate, percentage difference in recycling quantity collected, percentage difference in residual waste collected and changes in contamination levels compared to previous phases. All Reward sites were ranked and those in the top 3 were offered rewards. There were two phases of rewards plus an overall reward at the end of the project therefore each site in the Reward category had three opportunities to be awarded a prize.

Prizes in each phase ranged from £100 for first place to £50 in third place. Each Housing Association provided their own funds for rewards and had their own independent winners (i.e. separate rewards for Housing & Care21 and AmicusHorizon sites). It was the responsibility of the residents on site to decide what the rewards would be spent on to improve the environment and communal areas where they live. Examples included plants, flower boxes, raised beds, gardening equipment including benches.

DATA COLLECTION AND MONITORING

There were four phases of the project: baseline, phase 2 (following engagement), phase 3 (reward set 1) and phase 4 (reward set 2). During each phase quantitative and qualitative data was collected as set out in Table 3.

Table 3: Details of monitoring protocol

Monitoring activity	Overview
Monitoring of waste and recycling levels	Baseline data was collected from each site. A representative at each site (normally the site manager) collected data for 4-6 weeks with training provided by the project team. Volume data was collected on the levels of waste and recycling for all waste streams which was then converted to weights using published density data mainly from WRAP (2010). The recycling rates cited in this paper take into account all the waste streams collected by the local authority – residual waste, dry recycling and food waste. Garden waste was excluded from recycling rate calculations due to the variation in services across participating sites and also the variation in the size of sites with some having very large gardens. This stage was repeated a further three times throughout the project at all sites; post workshop and twice during the adoption of Rewards – therefore all sites had at least 16 weeks of data.
Spot checks	Spot checks were undertaken at each site by experienced project staff to corroborate the data and assess contamination levels, quality of signage and local environmental quality. Photographic evidence was collected and during the project a photo library was developed containing over 3,000 images providing valuable insight into waste behaviours and impact of the project. This included images of recycling quality and recording various stages of the Green Johanna composters in use. Spot checks in phases 2-4 included monitoring of how the Green Johanna composters were being used and any problems were addressed.
Composting	At a representative sample of sites, residents also kept a record of how much food waste they were putting into the Green Johanna composter with levels also recorded during the spot checks.
Survey	A baseline resident behaviour survey was run to help understand recycling behaviour, knowledge and satisfaction levels. This was repeated approximately 3 months after workshops and at the end of the project with changes in behaviour

<table>
<tr><th>Monitoring activity</th><th>Overview</th></tr>
<tr><td></td><td>noted. The table below shows the number of responses by flat and in brackets the reponse rate.
<table>
<tr><th>Phase</th><th>Control</th><th>Recognition</th><th>Reward</th></tr>
<tr><td>Baseline</td><td>118 (31.6%)</td><td>321 (42.3%)</td><td>523 (40.0%)</td></tr>
<tr><td>Follow up</td><td>159 (25.0%)</td><td>178 (23.5%)</td><td>372 (28.4%)</td></tr>
<tr><td>Final</td><td>104 (16.3%)</td><td>194 (25.6%)</td><td>309 (23.6%)</td></tr>
</table></td></tr>
<tr><td>Stakeholder survey</td><td>A stakeholder survey was also undertaken at the end of the project with 45 individuals involved in the project delivery. This included 26 representatives from Reward sites and 7 from Recognition sites (this included site managers and Green Champions). 12 other people involved in the project completed the survey (4 local authority officers, 5 Housing Association staff, 1 member of project staff and 2 contractors).</td></tr>
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RESULTS

The following are the combined main findings from the quantitative and qualitative data collection methods set out in Table 3. Table 4 presents an overview of trends from monitoring waste and recycling levels - please note that data presented Table 4 is from 61 sites that had recycling in place at baseline - 12 sites did not have recycling in place at the baseline phase and therefore have been excluded in this analysis. Key findings from the research are as follows:

Table 4: Summary of key results.

Median change over baseline	Recognition	Reward	Control
Percentage point change in recycling rate (%)	10.3	8.1	-4.5
Change in recycling set out per flat per week (kg)	0.5	0.4	-0.2
Change in residual waste set out per flat per week (kg)	-0.4	-0.7	-0.1

i. Increases in recycling rates – median recycling rates had increased by 10.3 and 8.1 percentage points at Recognition and Reward sites respectively over baseline. Recycling rates had reduced 4.5 percentage points at Control sites. Overall, 36 Recognition and Reward sites saw an increase in recycling over baseline however, 10 had a reduction. For Control sites, 6 increased recycling over baseline and 8 saw a reduction. Figure 1 shows trends across the 61 sites.

ii. Increase in recycling quantity - Again using median values for these 61 sites there has been a 0.5 kg and 0.4 kg increase per week per flat in the amount of recycling being set out at Recognition and Reward sites respectively over baseline. In comparison, there was a 0.2 kg per week per flat reduction at Control sites.

iii. Reduction in residual waste - Data from these 61 sites shows a 0.4 kg and 0.7 kg reduction per week per flat in residual waste being set out at Recognition and Reward sites respectively over baseline. There was also a 0.1 kg per week per flat reduction at Control sites.

iv. Reduction in non-recyclers – There was a reduction of 13 percentage points at Recognition and Reward sites in the number of residents who agreed with the statement ‘I don’t recycle’ in the behaviour survey. In comparison, non-recyclers increased at Control sites by 25 percentage points to 33%.

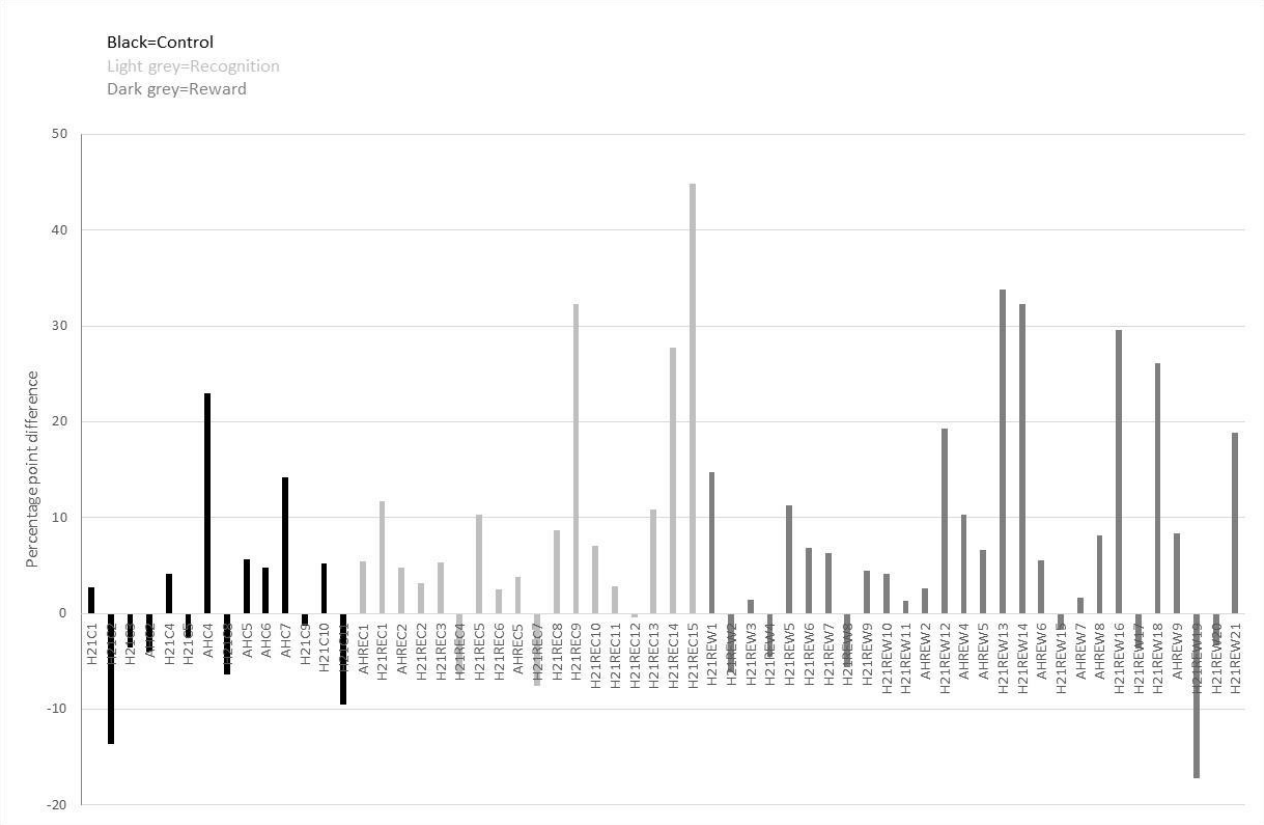

Figure 1: Percentage point difference in recycling rates comparing final data to baseline (sample for 61 sites that had recycling at baseline)

v. Improvement in recycling quality - An attempt was made to compare contamination levels during the project. Complete data was collected from 51 sites and by the end of the project Reward and Recognition sites had on average less than 5% contamination compared to 5-10% contamination in the Control area. At some Control sites contamination levels were reported at over 10% and at one site due to the high rates of contamination recycling had been withdrawn.

In the stakeholder survey local authority officers were given the opportunity to comment on the impact of the project and example of responses include: *"There was contamination but since the project this has now been eliminated. I've never had to visit the site through any further problems and no contamination is reported any more. So the project is very good".*

vi. Uptake in composting - 260 Green Johanna composters were installed and used across Reward and Recognition sites. Claimed behaviour from the final behaviour surveys shows that 38.7% of Recognition flats are now composting for the first time and 50.5% of Reward sites. Collectively across all Recognition and Reward sites, residents composted an estimated 58.7 tonnes of food waste from September 2013-September 2014.

vii. Rewards have a limited impact – when comparing recycling rates from phase 4 to phase 2 for Reward sites the results were inconclusive with 15 seeing an increase in recycling rate following the introduction of rewards but 13 a reduction. Results from the behaviour surveys across all groups and phases of the project suggest that rewards have limited impact and that recognition is more important to residents. This is supported by observation data and feedback from stakeholders. In the final behaviour survey residents were asked '*if receiving a personal reward'* or '*winning a prize for recycling'* was important. Figure 2 shows there was limited support for rewards. Other issues such as *'being thanked for recycling'*, *'knowing how much the council is saving from recycling'* and *'knowing how well my local area is doing on recycling'* were seen as being more important to residents across all categories.

Throughout the project there appears to have been consistently limited enthusiasm for rewards across all groups including at baseline and from the Control group. The following are quotes from project participants: Resident from Reward site, final survey: *"offering prizes is stupid and disrespectful to people who care";* Site manager, final stakeholder survey: *"carrots cannot last – its got to change from the heart".*

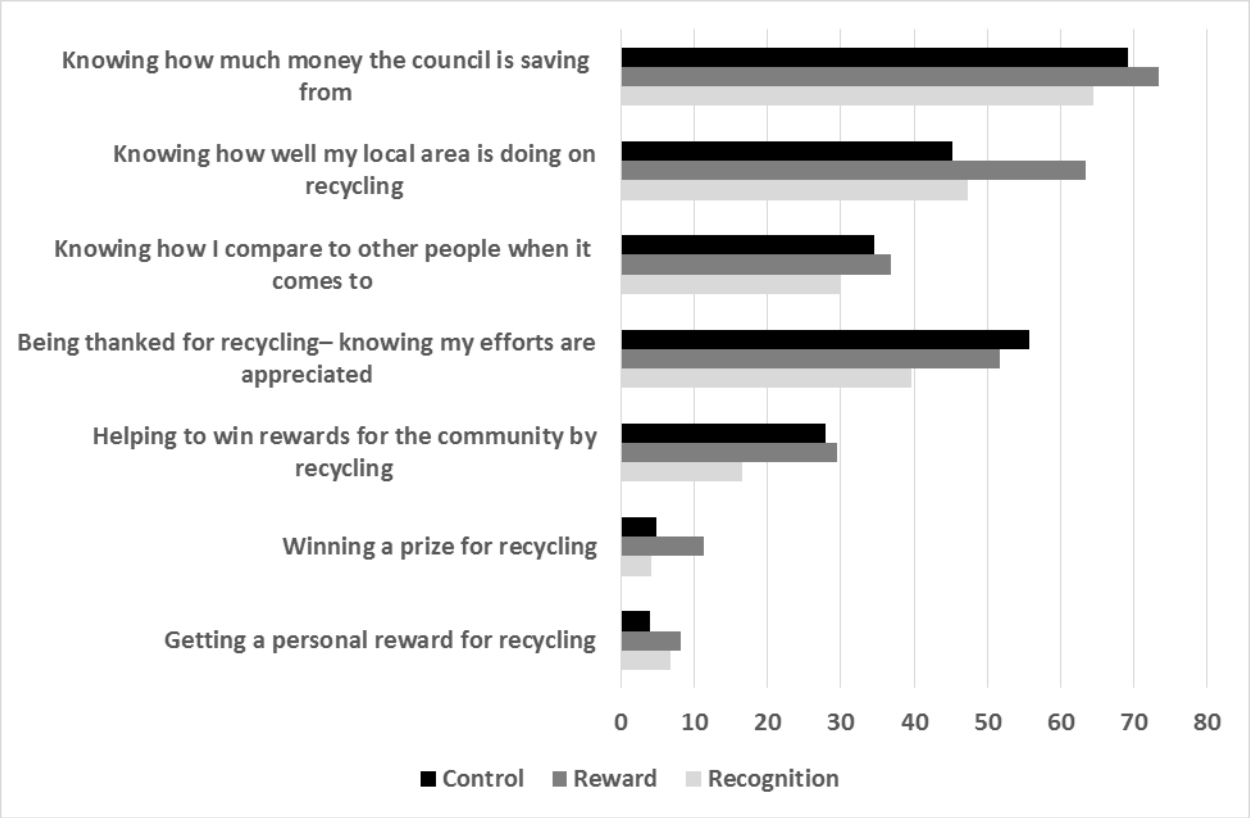

Figure 2: Results from final behaviour survey – respondents who agreed the following issues were important or very important.

viii. Communication is key - An important facilitator to changing the behaviour of this specific target group was ongoing dialogue during the project using a bottom up community based approach as opposed to a top down short term generic intervention.

The project delivered on many of the needs expressed by the residents during the engagement process. The residents therefore felt their input was valid, important and being listened to; they had value to add and the project was not just a *'talk shop exercise'*. At the workshops a significant number of residents felt that they were being offered inferior services to neighbouring single occupancy households. The project facilitated a resident driven approach to waste management on site and many sites now have better services than single households on the same street - for example residents at some sites were provided with a separate battery collection and over 12 months over 1 tonne of batteries were collected. Similarly between September 2013 to September 2014 3.5 tonnes of textiles and bric-a-brac were donated to charity since collections were introduced.

As the project progressed and residents took ownership of it the level of support and communication needed with the project team reduced.

ix. Added value – Feedback from residents and stakeholders has shown that the project has had a number of added benefits: an increase in social cohesion and pride in the local surroundings, more active residents through composting and gardening, better relationship with the local authority, improved local environmental quality through refurbished bin rooms, signage and reduced littering. A housing manager provided the following quote: *"The community development outcomes from this project were outstanding – I saw; 'hard to reach' people with dependencies not*

just involved but leading, communal areas that have been barren for decades are now in use and some of the people you identified have become more involved with us. I struggle to encourage social capital in self-contained multi-occupancy buildings, this achieved it".

CONCLUSION

In the UK the recycling rate is currently stagnating and there is great concern that the Waste Framework Directive target of 50% recycling will not be achieved. This paper has shown that effective community focused engagement can have a significant impact in increasing levels of recycling in HMOs and Housing Association properties. Although the recycling services varied significantly across the 31 local authority areas where the sites were located, at the majority of Recognition and Reward sites there was an increase in recycling, reduction in residual waste, an improvement in recycling quality and uptake in composting. The results support an increasing evidence base that suggests rewards have a limited role and that government and local authorities are better investing their increasingly limited resources in implementing effective communication programmes working with community partners. Follow up work at participating sites has shown that residents have taken ownership of the project and behaviour has been sustained.

The project followed a communication and resident engagement plan that was bespoke to every site. It appears that this specific approach encouraged behaviour change and gained trust and involvement from residents from initiation to completion of the project. This project could be used as a duplicable model to help significantly improve the quality and quantity of recycling in HMOs and Housing Association properties thereby contributing towards the 2020 target. A number of local authorities have expressed their interest in implementing the model in their areas and the Housing Association have shown intent to expand the project to other sites.

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