

The Power of Public Appointments

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Abstract

Appointing citizens as public officials is a prevalent social phenomenon, both as employment in the public administration and as voluntary service. This paper explores the effect of public appointment on individuals' willingness to contribute to the provision of public goods. It assesses whether making someone an honorary public official within a community shifts her preferences towards contributing to the community's aggregate welfare. We present a model of public appointments and experimentally test its predictions in a real-world appointment scheme focussed on residential streets in a borough of London, UK. We find that public appointments have significant impacts on individual contributions to local public goods, on residents' perceptions of their area, and on social capital amongst neighbours. The paper provides some of the first evidence of the impact of a foundational element of public economics: the impact of appointment to officialdom.

Keywords: bureaucrats, public goods, decentralization

JEL Classification: D72, D73, H00, H11, H41, O20

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1 Introduction

The public appointment is a prevalent social phenomenon, both within the public administration and as a complement to it, such as volunteer firefighters or positions in the UK's House of Lords. One in three people are appointed to formal volunteering positions related to social services (OECD, 2015). Though these individuals are employed under diverse incentive regimes, they have in common their appointments as public officials.

Appointments may increase the appointee's valuation of others' utility by stimulating a sense of duty. They may introduce prestige value from service delivery by creating an association between the appointee and the delivery of public services. Whether public appointments can have real effects on public action therefore has substantial societal implications. However, understanding the impact of public appointments on the actions of appointees has been under-researched to date. This gap contrasts with the significance of public appointment to an understanding of the public sector, and therefore to public economics as a whole. This paper aims to fill that gap by exploring the impact of public appointment on a specific set of local environmental and social public services.

We investigate the impacts of appointing citizens to roles as public officials, and track their contributions to local public goods throughout the public policy cycle. We worked with a local government in London, UK, to appoint a random sub-set of residents to quasi-official posts and asked the appointees to improve the cleanliness, beauty and social capital of their residential street.¹ Street cleaning activities encompass picking up litter or reducing the amount that is dropped, organising the removal of inappropriately disposed waste, and so on. Beautification activities include removing bins from streets after waste collection occurs, creation of street murals or painting of walls, and creation and maintenance of community gardens, planters and other street furniture. Towards these ends, and to improve social capital on the street, appointees were asked to organise street meetings and parties focussed on street beautification.

Public appointments are frequently made with accompanying incentives. To investigate how the structure of the appointment impacts on appointee behaviour, we experimentally varied the nature of the appointment with regard to: i) its salience and prestige; ii) the associated financial rewards; or, iii) the community benefits. We then tracked appointee efforts and achievements. Our results provide evidence that public appointments have real effects on appointee efforts towards providing local public goods. The nature of the appointment influenced the resulting impacts, with prestige appointments leading to significant increases in public good provision, and social appointments leading to significant increases in social capital on the street.

¹Keep Britain Tidy (2014) estimates that the direct cost of keeping public streets, parks and open spaces clean in England is almost £1 billion per year, with substantial indirect costs. One of the key recommendations of the Keep Britain Tidy report was to find ways to engage residents in street beautification.

We build on the existing literature by experimentally assessing the impact of a public appointment. Whilst public economics has focused on the novel incentive environments found in the public sector (Dixit, 2002; Besley and Ghatak, 2005), the pure impact of public appointment has been neglected. To date, the empirical literature on leaders in public goods games has mostly come from laboratory experiments. Fehr, Herz and Wilkening (2013) and Cox et al (2012) find that the provision of authority has significant incentive effects in laboratory settings, causing leaders to over-supply effort because of non-pecuniary impacts on their utility functions. This does not seem to be due to leadership as a monitoring (Linardi and McConnell, 2011) or coordinating (Güth et al, 2007, and Camerer and Weber, 2013) device.²

These studies define appointments as a combination of two components: one, appointment of an individual to a formal position; and two, the provision of authority over others. Simply appointing an individual to a public position does not have to come with the delegation of authority. The appointment can be honorary. In this paper, we focus on appointments that do not provide additional powers to leaders, allowing us to identify the pure impacts of public appointment in the field.

The existing literature on pro-social or voluntary activity emphasises the role of intrinsic motivation in driving actions (Kolm and Ythier, 2006; Francois and Vlassopoulos, 2008; Ariely, Bracha and Meier, 2009; van Dijk, 2015; Brown and Cialdini, 2015) and the potential for extrinsic incentives to crowd out such intrinsic motivation (Titmuss, 1970; Deci et al, 1999; Besley and Ghatak, 2005; Tirole and Benabou, 2006). Indeed, the small empirical literature that exists argues that awards and recognition may be a more effective means of stimulating pro-social actions (Kosfeld and Neckermann, 2011; Bo et al, 2013; Chetty et al, 2013; Ashraf et al. 2014; Dur and Vollaard, 2014; Cavalcanti and Leibbrandt, 2015; Ashraf and Bandiera, 2017).³

We also investigate the potential for appropriately-formulated appointments to achieve social outcomes that other margins of public policy have traditionally struggled to influence. By prompting citizens to jointly deliver local public goods, appointments may build social capital as citizens work together. Social capital has been argued to be in long-run decline (Putnam, 2000) and largely shaped by historical factors

²Potters, Sefton and Vesterlund (2005; 2007) show that when leaders have private information of the value of the public good, they can shift equilibrium outcomes towards efficiency. This view of leadership goes beyond the scope of this paper, which restricts itself to a setting in which the value of the public good is common information. When given appropriate authority to punish, leaders may be able to sustain efficient levels of public good provision. Fehr and Gächter (2000) show that with sufficient capacity to punish other members of the community, cooperation in public goods experiments can be effectively sustained. However, in settings involving citizen appointees, the ability to punish may lead to the abuse of power, as outlined theoretically in Bolton and Dewatripont (2013) and experimentally in the lab by Bartlin, Fehr and Schmidt (2012). Concerns over such abuses, which could be said to include tax regimes imposed by citizen leaders, are likely to create political constraints that restrict the use of punishments in many settings. This was certainly the case in the context of our study, where the government organisation we worked with was keen to restrain direct punishment by appointees.

³The psychology literature has also explored the causes and consequences of pro-social motivation. Brown and Cialdini (2015) provide an overview of the major papers. As far as we know, the research provided here is a contribution to that literature. In particular, Kraft-Todd et al (2015) conclude by stating that a frontier topic of research in promoting cooperation is in the area of long-term behaviour modification such as that studied here, rather than one off events.

(Alesina and La Ferrara, 2000; Putnam et al, 1993; Guiso, Sapienza and Zingales, 2008; Bracco et al, 2015). Fostering citizen interaction in the delivery of local services might be one means of the government reversing such a decline.⁴ By including a treatment arm that emphasises the social benefits of appointment, we can test this hypothesis, and we find support for this argument in our setting. We see a significant increase in social capital on the streets treated with appointments that emphasise community participation.

To structure our analysis, we model public appointments by amending the classic model of public good provision to reflect the possibility that public appointments will induce individuals to care more about the distribution of outcomes over which they have responsibility. This assumption is akin to an individual's appointment as mayor of their city or leader of their street, shifting their interest in the outcomes for the residents of their city or street. In our model, simply becoming an appointee changes an individual's utility function to include a non-zero weight on at least one other citizen's consumption of the public good or the distribution of public goods outcomes for which the appointee has been given responsibility for. Such an assumption may be argued on the basis that once the government nominates an individual, she becomes more altruistic, as part of her identity is founded in the provision of public goods or because the appointment provides individuals with a means of building social status.⁵ Our results are consistent with this change in preferences.

An appointment scheme without incentives may not provide sufficient impetus to appointees to undertake costly activity to provide public goods. We therefore use our model to outline a set of experimental treatments that test a pure appointment scheme against a control, as well as a set of cost-equivalent treatments that provide complementary incentives to the appointment scheme. One incentive emphasises the salience or prestige of the appointment to the appointee, linking our study to the literature on identity (see Akerlof and Kranton (2010) for an overview), and to her community, linking our study to the literature on status (see, for example, the theoretical treatment in Besley and Ghatak, 2008). Two more treatments use (in-kind) financial incentives, equivalent to the cost of the identity treatment, at the individual and community levels, to test the impact of extrinsic incentives on public service in this setting.

Our results on the set of complementary incentives closely mirror the predictions of the model. All appointment schemes reduce neighbours' negative perceptions of targeted anti-social behaviours relative

⁴The empirical literature on social capital argues that there are substantial positive spillovers from higher levels of social capital, such as economic growth (Knack and Keefer, 1997), judicial performance (LaPorta et al, 1997), crime (Buonanno et al, 2009) or financial development (Guiso et al, 2004), such that it is frequently seen as a public good in itself. It was a key outcome of interest for the local government we worked with.

⁵This could be related to a warm-glow effect (Andreoni, 1989) that is positively associated with the scale of public provision, or an effect of their new identity as public servants along the lines of Akerlof and Kranton (2005). Our modeling strategy is related to the discussion of ethnicity in public representation, where ethnic groups are both exclusionary and internally cooperative. In Munshi and Rosenzweig (2015), ethnic groups appoint leaders who are then incentivized to internalize the benefits of appointment within their group. Governmental appointments are free to target distinct conceptions of community beyond ethnicity. Relatedly, philanthropic contributions have been studied as a signal of social status (Rose-Ackerman, 1996) or projecting a positive image to others (Andreoni and Bernheim, 2009).

to control streets, so appointments themselves have real impacts. We find that incentives are a necessary addition to the appointment scheme for it to stimulate substantive efforts to beautify the street and on social cohesion. We see that increasing the salience of the appointment substantially strengthens its efficacy relative to the pure appointment scheme or to individual extrinsic motivators. Similarly, community extrinsic motivators increase the level of community involvement, expanding the number of people who have heard of the scheme, the number of residents involved in street clean up, and the sense of social cohesion on the street. There was no evidence of any effect of the appointments on measures of litter or street cleanliness, which were already relatively favorable to begin with. This suggests that individual citizens are more than happy to free-ride on existing levels of provision, particularly in matters where citizen and government activity are more likely to be close substitutes.

The spillover effects on social capital are particularly noteworthy as few other papers, with the exception of Feigenberg, Field and Pande (2010), have found much evidence that public policy tools can be used to shift social capital in the short-run. By complementing the public appointment with incentives targeting the wider community, the scheme increased social capital substantially, highlighting the possibilities of government intervention in this area.

The results imply that public appointments have incentive effects. They can shift the utility function of citizens in a way that helps communities overcome public good coordination problems. They are therefore a potentially effective tool of public policy. Although we cannot claim that social welfare has improved as a result of this appointment scheme, non-appointees' satisfaction with their local area and perceptions of social capital have strengthened as a result of the scheme. This is a demanding test and shows the potential power of public appointments as a policy tool.

The rest of this paper proceeds as follows. Section 2 outlines a model of public good provision by citizens under different appointment schemes. Section 3 details the experimental design and provides some further background. Section 4 presents the results of our analysis on measures of appointee effort, street beautification and resident satisfaction. Section 5 concludes.

2 A model of public appointments

In this section, we set out a model of public appointments based on the classic analysis of public good provision.⁶ The government and citizens differ in their marginal costs of producing distinct public goods.

⁶Laffont (1987) provides an in-depth introduction to the standard public goods problem and some of its classical resolutions such as compensating transfers and planning procedures. In the current setting, we are interested in the capacity of public appointments to shift the incentives of appointees towards improved levels of public good provision. The imposition of a public appointee is not akin to the creation of a dictator in the sense of the Gibbard (1973)-Satterthwaite (1975) impossibility theorem, which achieves Pareto optimality by imposing the preferences of a single agent on the choice problem. The distinction proposed here is in preferences rather than decision rules.

Citizens decide how much to contribute to different public goods, taking the level of government provision as given. In equilibrium, they specialise into those goods for which they have the lowest costs of provision. By appointing citizens to public office, government stimulates the provision of those goods in which citizens have a comparative advantage, reducing the Pareto inefficiencies induced by free-riding.

(i) Environment

A community consists of a government, $i = 0$, and n citizens, $i = 1, \dots, n$. Citizens can produce a numeraire private good x and m non-excludable public goods g_k , $k = 1, \dots, m$. These goods could be, for example, units of cleanliness, beautification or social capital in the community. The government only produces public goods. These public goods can be jointly consumed by all i ($g_{ki} = g_k \geq 0$ for all i). Each citizen has quasi-linear preferences represented by utility function $u_i = x_i + \sum_k v_i^k(g_k)$. The function $v_i(\cdot)$ is increasing, strictly concave and $v_i(0) = 0$. Citizens have a strictly positive endowment of the numeraire w_i , which in our case could be seen as a time endowment that could be devoted to private activities or street beautification. For citizens, the cost of supplying a unit of public good (measured in units of the numeraire) is a constant $c > 0$. For simplicity, we take the private marginal rate of transformation between all public goods to be unity.

The government gets its endowment from non-distortionary lump sum taxation, which is taken as given. We assume the government is benevolent and their preferences are simply the sum of individual welfare. The other distinguishing feature of government preferences is that they face heterogenous marginal costs of production. They produce g_1, \dots, g_a at cost $\underline{c} < c$ and g_b, \dots, g_m at cost $\bar{c} > c$, reflecting their relatively low cost of provision for some goods (in our context this could be street cleansing) and a high relative cost for others (such as street-specific beautification that requires local information, and the development of social capital).⁷ Within the two sets of goods, the public rate of transformation is again unity for simplicity.

(ii) Benchmark Case

We assume that the government is first-mover and sets its contribution to public goods before citizens make their choices. In this setting, the government will simply provide public goods that maximise social welfare up to the value of its endowment. Taking this as given, citizens then decide on their contributions.⁸

⁷The benchmark may rather be whether publicly-contracted private sector firms face these constraints, but the same arguments apply to that case.

⁸If we relax the assumption that the government's endowment and level of provision are taken as given, we observe dynamic responses of government and citizens that could lead to further efficiency gains. The government benefits from increasing citizen provision of public goods through the creation of an appointment scheme as it relaxes its budget constraint for expenditure on goods in which citizens have a comparative advantage. Empirically in a co-production model we should therefore see government and citizens gradually specialising into those activities in which they have the lowest costs of provision. In a fully optimal scenario, government would impose sufficient lump sum taxes to provide efficient levels of goods $1, \dots, a$ and leave citizens to provide goods b, \dots, m .

Let s_{k0} denote the government provision of good k , s_{ki} denote the amount of public good k that is provided by individual i to the community, and $s_i = \sum_k s_{ki}$.⁹ Adopting a Nash behavioural approach, the solution to the individual choice problem can be characterized by,¹⁰

$$s_i^a = \underset{s_{ki} \text{ s.t. } s_i \in [0, \frac{w_i}{c}]}{\operatorname{argmax}} w_i - cs_i + \sum_k v_i^k \left(\sum_{j \neq i} s_{kj}^a + s_{ki} + s_{k0} \right) \quad (1)$$

Citizens set their contributions based on the contribution of government and the actions of other citizens. It is well known that this equilibrium, $(\mathbf{x}_i^a, \mathbf{g}_i^a)$, $i = 0, \dots, n$, is not efficient.¹¹ However, direct government provision of public goods g_b, \dots, g_m is inefficient due to the relatively high marginal cost of government provision.

Correcting the under-provision of goods where the government has a comparative advantage requires funding through lump sum taxes. Correcting for the second type of underprovision requires government to encourage citizens to increase their own contributions.

(iii) Appointments

We consider the potential role of public appointments in increasing citizen contributions to public goods. By utilising its monopoly on appointment power, governments can anoint public officials at the community level. We model these appointments as expanding an appointee's utility function to include the impacts of their actions on other citizens. When citizen i is anointed a public official, their preference function changes to incorporate (some degree of) the externalities of their actions. Their optimal action is now defined by,

⁹An allocation for the community is a vector of consumption bundles $((g_0), (x_1, g_1), \dots, (x_n, g_n))$. As stated above, government does not consume the private good. An allocation $(\mathbf{x}^e, \mathbf{g}^e)$ is Pareto efficient if and only if (i) for all k and i , $g_{ki}^e = g_k^e$; (ii) for goods $1, \dots, a$, $\sum_i v_i'(g_k^e) \leq \left(\frac{s_{k0}}{g_k^e} \bar{c} + \sum_i \frac{s_{ki}c}{g_k^e} \right)$ and for goods b, \dots, m , $\sum_i v_i'(g_k^e) \leq \left(\frac{s_{k0}}{g_k^e} \bar{c} + \sum_i \frac{s_{ki}c}{g_k^e} \right)$; (iii)

$$\sum x_i^e = \sum w_i - \left(\sum_i \sum_{j=1, \dots, a} g_j^e \left(\frac{s_{1i}}{g_j^e} \bar{c} + \frac{s_{ki}}{g_k^e} nc \right) + \sum_i \sum_{j=b, \dots, m} g_j^e \left(\frac{s_{1i}}{g_k^e} \bar{c} + \frac{s_{ki}}{g_k^e} nc \right) \right).$$

¹⁰In this instance, an allocation (x_i^*, g_i^*) is an equilibrium vector of public good contributions s_m^* such that for all m and i , (i) $g_{mi}^* = \sum_j s_{mj}^*$ and (ii) $x_i^* = w_i - c \sum_m s_{mi}^*$.

¹¹To see this, consider two contrasting cases. First, assume government provision is set to zero. Here, the equilibrium will clearly be inefficient as individuals will fail to account for the fact that other citizens derive benefit from their provision of the public good, and therefore under-provide public goods relative to the Pareto benchmark. Algebraically, suppose that $g^e > 0$. For all citizens, $v_i'(\sum_j g_j^*) \leq c$, with $v_i'(\sum_j g_j^*) = c$ if $g_i^* > 0$. If $g^e > 0$, then the community will under-provide the public good. In the case that $g_i^* = 0$ for all i , the result follows immediately. If $g_i^* > 0$ for some i , then $\sum_i v_i'(\sum_j g_j^*) > c$ which implies that $\sum_j g_j^* < g^e$. Second, suppose the government has a large endowment relative to its marginal cost of provision.

The government would therefore be the sole provider of public goods in the community, and such provision fully crowds out the contributions of citizens (Bergstrom, Blume and Varian, 1986). Again algebraically, suppose the government delivered a quantity of the good $s_0 > g^*$. The individual choice problem becomes $s_i^* = \underset{s_i \text{ in } [0, \frac{w_i}{c}]}{\operatorname{argmax}} w_i - cs_i + v_i \left(\sum_{j \neq i} s_j^* + s_0 + s_i \right)$. The individual's contribution under autonomy was set such that their marginal utility from private consumption was equal to the provision of the private good. Since this level is now fully provided by the government, they optimally invest in private consumption only.

$$s_i^* = \underset{s_{ki} \text{ s.t. } s_i \in [0, \frac{w_i}{c}]}{\operatorname{argmax}} w_i - cs_i + \sum_k \sum_{j \neq i} \lambda v_j^k (\sum_{j \neq i} s_{kj}^* + s_{ki} + s_{k0}) \quad (2)$$

where $\lambda > 0$ is the weight the appointee places on the utilities of other citizens and $x_i + \sum s_{mi}^* \leq w_i$. With this utility function, common preferences over goods, no constraints on the volume of time persons are endowed with and $\lambda = 1$, individual i would provide the Pareto efficient level of street beautification for goods b, \dots, m .¹² To be clear, the Pareto efficient level of public goods is now higher than in the benchmark case because the marginal utility from an increase in the public good is counted in citizen j 's utility function as well as the appointees.

Relative to the other citizens, the inclusion of $\lambda v_j(s_{mi})$ raises the marginal utility of public good provision and thus increases i 's willingness to contribute to street beautification. The more a government can shift an individual's preferences to take into account the utility others gain from their beautification activities, the higher λ and the higher g^* .

The introduction of the $v_{j \neq i}$ functions into the official's utility function could be for altruistic or status reasons. Appointed citizens identify with their new roles as leaders in the community, and gain utility from playing a significant role in the provision of public goods. They may also gain benefit from the status of appointment, and gain utility from other members of their community perceiving their provision of public goods. Both interpretations point to the value of scarcity in appointments, with both a shifted identity from appointment and status arising only if appointments are scarce.¹³ Thus, for simplicity we assume the government make only one appointment per community without appointments losing their value.¹⁴

The heterogeneity in the cost of provision drives heterogeneity in contributions. The government will first focus its endowment on public goods $1, \dots, a$ where it has a comparative advantage. Taking these levels of government provision as given, we should therefore see citizens contributing most to goods b, \dots, m .

We allow for preferences over the goods to vary across individuals. This leads to the concern that appointees will focus on the provision of goods that they value most highly, potentially at the cost of investments in other goods. As individual preferences diverge, the rationale for an appointee diminishes. We will test for the extent of such divergence in our empirical work.

¹²Other citizens continue to maximise (1), so offset their contributions accordingly. As the official's constraint bites, other citizens continue to invest in the public good at a lower level, and there is no increase in the aggregate level of the public good provided.

¹³If it was a common activity, the individual appointee would no longer be a dominant provider of public goods. Similarly, if everyone was mayor of their city, the role would no longer have meaning.

¹⁴A complication would also arise in modelling multiple appointments. Implicitly, the model laid out here considers a single government appointment. Once multiple appointments are made within the same community, we would have to be clear how each official valued the other's utility. Complications can arise from the circularity of u_j containing u_i and vice versa (see "war of gifts" in Mercier Ythier (2006)). Simple solutions in our setting could be that the m officials split the community into m parts and provide public goods within those subsets (for example, looking after one of two halves of a street).

To increase the optimal provision level of the appointee, the government can increase λ in equation 2. One mechanism to do this is to raise the salience or prestige of the appointment to the appointee, say through meetings with senior government officials. They identify more closely with the position, and therefore feel greater utility from public service. Raising the prestige of the appointment to other members of the community strengthens the connection between the benefit they receive and their positive association of that benefit with the official. Thus, whether citizens respond to appointments for altruistic or status reasons, prestige should drive an increased responsiveness.¹⁵ Empirically, we should therefore expect the appointment of citizens to increase the level of public good provision from autonomy, and this effect to be strengthened as we increase the prestige of the appointment.¹⁶

(iv) Financial incentives

Though likely cheaper than direct provision, appointments are not free. They require the trappings of state, and in our setting we offered appointees in the prestige treatment arm clothing, signage and ceremonies. A natural comparator with this arm is to offer a revenue-equivalent financial incentive of utility f to appointees.¹⁷ This changes the appointee's choice problem to become:

$$s_i^f = \underset{s_{ki} \text{ s.t. } s_i \in [0, \frac{w_i}{c}]}{\operatorname{argmax}} w_i - (c - f) s_i + \sum_k v_i^k \left(\sum_{j \neq i} s_{kj}^f + s_{ki} + s_{k0} \right) \quad (3)$$

By lowering the cost of providing public goods, this will unambiguously increase production of the public good. How does this compare with the appointment scheme? We would expect a one unit cost reduction to have equal effects with a one unit increase in marginal benefit in this model. If the financial incentives are provided to a single citizen, only the appointee will increase their marginal investment by the marginal reduction in cost. The inclusion of other member's marginal utilities from provision, as in equation (2), adds the *sum* of marginal utility gains to the investment tradeoff. The relative size of f and the sum of marginal utilities is an empirical question, and we add a treatment arm that provides appointees with financial incentives for undertaking public good provision specifically to test this. However, this model

¹⁵The appointee's constraint is that they only have an endowment of time w_i . The logic of increased provision under the appointment scheme is that $s_i^* > g^a$. However, the community may prefer to operate under the appointment scheme irrespective of the increase of public provision, as aggregate utility is higher. The official now gains from other's consumption of the public good, up to his endowment, which he rationally spends on public provision. Others reduce their investment in the public good and increase their consumption of the private good, whilst still benefiting equally from public provision.

¹⁶In the model, we assume that appointees are motivated by the welfare of other citizens in their community, and not their welfare derived from particular public goods (λ is constant across m). It is, however, possible that the weight placed on the welfare of others might vary across the public goods and this could skew the responses of appointees towards those goods. For instance, they might over-weight the welfare of others for public goods they themselves value the most. We acknowledge this potential response and examine whether satisfaction levels and perceptions of non-appointees in the community have improved in response to the appointment scheme.

¹⁷To be cost saving for the government to co-produce, the money equivalent of f has to be smaller than the cost of formally contracting street beautification to the private sector.

provides some logic to the possibility that appointments will have greater impacts on public good provision than individual financial incentives.¹⁸

Equation (3) could be the utility of appointed individual i or, if f was invested in community goods, of all members of the community. In other words, financial incentives could be provided at the *community* level, in the form of jointly shared benefits. This then reduces the net opportunity cost of effort for all members of the community, lowers the cost to the appointee of motivating other members of the community, and so raises the total level of public good provision. This naturally depends on being able to devise rewards that are equally valued by the community. In our context, these might be funds allocated to street activities, street plants and furniture, and so on.

The provision of community incentives has the added effect of creating a joint response by multiple members of the community, which may be something government values in itself, particularly if it leads to greater social cohesion. We can extend our empirical work to study whether incentives provided at the community level lead to higher social cohesion.

Whether individual appointments or community incentives have a larger aggregate effect on public good provision will be determined by the parameters of the specific utility functions in question. The increased effort of the appointee, and in the community incentive scheme, of all citizens, may be offset by the temptation to free ride. It is thus an empirical question to which we will turn in the next section.¹⁹

3 Experimental Design

3.1 Context and Sample

To investigate the empirical predictions of this model, we worked with a local government in the UK, the London Borough of Lambeth, to offer a new “Street Champions” scheme to its residents. This scheme appointed borough residents as ‘street leaders’ under a range of different incentive schemes directly targeted at the parameters of the choice problems laid out above.

The Borough of Lambeth is a largely residential district located just south of the river Thames in

¹⁸Note that the difference in the expected impact between prestige and pecuniary incentives has nothing to do with a ‘crowding out’ of intrinsic motivations. It arises from the multiplicativity of a more salient identity - a single unit of effort leads to benefits for multiple neighbours, the utilities of which are all in the appointee’s utility function.

¹⁹Whilst we have abstracted from selection issues here, plausible assumptions around self-selection into public service would strengthen the results of this model. Suppose individuals nominating themselves for work in public sector activities have higher pre-existing altruism or status concerns, or in our model higher λ s. The impact of appointments (introducing the λ s into their utility function) would increase their levels of public good provision under the appointment scheme even more than the general citizenry. The marginal impacts of incentives for a selected group would be an empirical issue. Though theory on the topic is ambiguous, scarce quantitative measures of the relationship between financial incentives and public service motivation, Ashraf, Bandiera and Jack (2014) and Rasul and Rogger (2015), find that they are complements. This implies that any results we find will be an upper bound on the responsiveness of the citizenry as a whole in the context of selection into service.

Central London. Roughly a third of a million people live in 136,000 households on 1,545 streets. Lambeth’s socio-economic indicators are similar to London as a whole, though it has a more diverse mix of incomes and ethnicities than most borough’s and a relatively high population density.

Our focus in this paper is residential streets, such that we exclude trunk roads, streets with greater than 5% of addresses or buildings used for commercial purposes, and self-managed housing estates. The dynamics of street leadership on non-residential roads are likely to be distinct to those on residential streets. These exclusions left us with 570 streets that came under council jurisdiction.

To ensure that each treatment street was sufficiently isolated from any neighbouring street, we ensured that a buffer of at least two connecting streets existed between each randomly chosen sample street. Figure A1 describes this process graphically and Figure A2 displays the distribution of streets in our sample.²⁰ This left us with 170 non-buffer streets.

Column 1 of Table 1 provides descriptive statistics of these 170 streets.²¹ The average sample street is 225m long and has 80 addresses, which for residential streets can be taken as households. This seems like a feasible geographic area for a street champion to cover. Other statistics indicate that Lambeth is relatively similar to Inner London as a whole. The mean age of residents (34 years old) and the proportion of residents who are White British (45%) in our study streets coincide with that of Inner London as a whole. The median house price and house sales per year are provided at the lower super output area level (corresponding to the relevant Census unit for which the data are available) and are very slightly above those for Inner London.²²

Like other London boroughs, Lambeth has responsibilities for the provision of social care, education, housing, transport, planning, cultural activities, recycling and waste services.²³ The council’s existing street cleansing and beautification activities were a tri-weekly litter pick by a council worker, a weekly rubbish and recycling collection service, and a sweeping of the road every two weeks. They also had a borough-wide campaign in place that requested citizens to become involved in looking after their com-

²⁰In field interviews during the design phase of the project, citizens universally identified their street as the focal community of their local area, with little to no mention of their neighbouring streets. We therefore denominated the street as the unit of observation and randomisation, and determined a buffer of two connecting streets to be sufficient given described commuter and pedestrian patterns in the Borough. To undertake the sampling, we chose a random eligible street within Lambeth, and then denoted as ineligible those streets connecting to it, and those streets connecting to the first level of connecting streets. We then randomly chose another street from the remaining eligible streets, continuing the process until all 570 initially eligible streets were denoted as either one of 170 sample streets or 400 buffer streets.

²¹Figure A3 provides some pictures of the streets we were working in to provide the reader with a clearer sense of the setting.

²²For a broader set of comparisons to London’s other borough’s, see <http://www.londonspovetryprofile.org.uk> and <http://data.london.gov.uk/dataset/average-house-prices-borough> for a range of statistics on socio-economic development related to those set out in Table 1.

²³Borough funding comes from three sources. Across local government as a whole in England, the main source of funding in 2014-15 was grants from central government (about 75% of revenues), with local property taxation forming the second largest source of funding. Since 2010, there have been significant falls in local government revenues and spending as a result of falls in grants from central government (Innes and Tetlow, 2015). Such cuts to local government revenue have forced councils to consider different ways of delivering services (and indeed, whether to continue to deliver all services).

munity. Titled ‘Do the Right Thing’ campaign, its aims were broadly similar to those of the scheme we experimented with, but abstained from appointments.

3.2 Street Champions Scheme

The Street Champions Scheme focussed on the environmental and waste management service sector. Specifically, the scheme looked to involve citizens in the upkeep and beautification of their street.²⁴ Over the late summer and autumn of 2014, the council wrote to all residents on treatment streets and informed them that they could be appointed a ‘Street Champion’.²⁵ The intention was to have multiple street champions on a street. Street champions were expected to be responsible for efforts to help improve the cleanliness, beautification, and social cohesion of the street they lived on. This could include: coordinating neighbours to engage in street cleansing activities; picking up litter or campaigning for residents not to drop litter; clearing pavements of bins, detritus, and other debris; beautification activities such as painting walls, the creation of flower planters or communal gardens.²⁶ Importantly, street champions were encouraged to identify their own priorities for improving street cleanliness, based on the needs and interests of the residents of that street. These were activities that were costly to the individual but had street-wide benefits. They are non-rival, non-excludable local public goods.

The Street Champions Scheme is an ideal context for testing the role of public appointments. A beautified street is non-excludable to the neighbourhood and non-rivalrous to neighbours, thus exhibiting key characteristics of local public goods. Maintaining a beautified environment and building social capital on a residential street is an area of public policy in which individual citizens have a comparative advantage (as compared with local or central government) due to greater knowledge of their local neighborhood, lower costs of engaging with their neighbors and their proximity. The required activities are feasible for individuals or groups of citizens in a way that the creation or maintenance of large scale infrastructure such as roads or municipal waste treatment plants are not. Since citizens had free choice over their activities and priorities, the experiment provides an ideal testing ground for considering the impact of citizen action when decision-making is devolved.²⁷

²⁴The Environmental Protection Act 1990 imposes duties under section 89(1) and (2) on local authorities and the Secretary of State to keep clean public highways for which they are responsible. The “Code of Practice on Litter and Refuse”, available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221087/pb11577b-cop-litter.pdf, provides details of these responsibilities and what councils do to fulfill them. Lambeth’s street leader appointments were seen as a potential way to involve residents in the council fulfilling this duty of care.

²⁵See Appendix B for a copy of the control letter.

²⁶Figure A3 provides pictures of some of the street champion activities undertaken.

²⁷Lambeth Council’s pre-existing evidence base on co-production was based on one-off initiatives to engage citizens to clear heavy snowfall (Snow Wardens) or hold one-off events to improve the local street environment (Community Freshview). However, all of this evidence related to engaging citizens in one-off activities and there was limited evidence of how to engage citizens in co-production of public services on a sustained basis. In a review of the last 25 years of literature on co-production, Voorberg, Bekkers and Tummers (2014) argue that there is little quantitative, outcome-focussed research, a gap our paper aims to contribute to filling. In a review of the implementation of co-production, Bovaird (2007) calls for attention to the

This scheme added to Lambeth’s existing efforts to get citizens involved in the delivery of public services (the ‘Do the Right Thing’ campaign) but added the feature of public appointment. Though the council had done wide outreach (including corresponding with individual households) in the past, it was now offering a public position as the individual anointed by the local government to lead cleanliness, beautification and collaboration efforts on a street. Though Lambeth committed to provide street champions with on-going advice and support, they did not provide them with any additional authority over other citizens. Becoming a street champion was a pure public appointment.

To fully test the model of public appointments outlined in section 2, we randomly varied the incentive accompanying the invitation to become a street champion, ensuring cost-equivalence between treatments. The randomisation was undertaken at the street level, such that all citizens on a street received a letter with the same set of incentives as their neighbours. The incentives were all featured prominently in the initial letter inviting people to become street champions and conditional on their playing a substantive role as a street leader. Table A1 provides details of how the incentives varied in terms of materials, training and recognition.

One group of streets did not receive any communication beyond the ‘Do the Right Thing’ campaign (the control). This provides us with a set of study streets that reflect the status quo activities of Lambeth residents without appointment incentives. In the course of the one-year period on which we monitored such activities with the council, two Lambeth residents initiated street activities outside of our appointment treatments, but both were in buffer rather than control streets.

Residents of a second group of streets were invited to become street champions, but no further incentives were mentioned (pure appointment). The Council simply announced the scheme to them and invited participation. This is our baseline appointment treatment. It does not make salient the appointment beyond simply appointing the individual a street leader and supporting them to undertake street activities. This treatment was akin to shifting citizens preferences from equation (1) to equation (2).

Mirroring the treatments suggested by our model, a third group of streets were offered an appointment treatment with ‘prestige incentives’ that emphasised their position. They received clothing, business cards and personalised stationary advertising their position, were offered to meet with the mayor to discuss their activities, and invited to an awards ceremony. This was our effort to raise the salience of the position to other members of the street and to the street champion themselves, akin to increasing the λ s in equation (2). The advertisements were aimed at strengthening the salience of the position to neighbours in a way that the street champion would be aware of, and the high-profile engagements a way of strengthening the salience of the position to the street champion themselves.

extent of and motivations for co-production, the focus of this project.

Two more groups were offered pecuniary incentives, corresponding to f in equation (3). The size of these incentives were aimed at being roughly equal to the cost of the prestige treatment. The prestige and pecuniary appointment groups can therefore be seen as alternative mechanisms through which to additionally boost the baseline appointment incentive at cost f . We therefore present our results as relative to the baseline appointment treatment.

In the pecuniary appointment treatment, the incentives were targeted at the individual street champion, who was offered access to costly council services for free. These services were provided to the street champions household only. For example, street champions were given free garden waste services for their household only, access to a range of council training courses, and so on. The benefit of the full set of incentives to the individual was around £200. This is not sufficient to compensate the appointee for their intended efforts at market rates, but provided some form of financial compensation in kind.

In the social appointment treatment, the incentives were targeted at the street as a whole, where similar council services would be provided to the street as a whole. In this case, waste collection services were provided for any green waste created by gardening the public spaces of the street and training was targeted at community issues relevant to the street as a whole. Plants and seeds were offered for planting on the street, and so on. The expected cost to the council of treating a single street with the full set of services on offer was approximately the same as in the prestige and pecuniary appointment schemes.

We randomly distributed the 170 sample streets between these treatments. 30 streets were allocated each to the control and pure appointment arms. 37 streets were allocated to the pecuniary and social appointment treatments and the prestige appointment scheme was randomly chosen between the three additional incentives to receive 36 streets. The additional incentives were all allocated more streets than the controls to increase our power to detect differences amongst these groups.²⁸

Individuals who expressed an interest in becoming a street champion were then invited to a workshop to give them ideas on what they could do as a street champion and to share their own ideas with other street champions (these workshops were specific to each treatment group). A dedicated council officer was made available to street champions to provide advice and organise the loan of street cleansing and beautification equipment when it was requested. Street champions were then contacted quarterly with a treatment-specific newsletter to remind them of their positions and their incentives. Incentives were provided at discrete points during treatment so long as the street champion was still undertaking activities on their street.²⁹

²⁸The list of eligible streets were distributed across the treatments using the randomisation tools at <https://www.random.org/>.

²⁹Throughout the project we worked closely with the council to ensure that the intensity of council activity was ex-ante equal across treatment groups. Only a small core of council staff knew about the randomisation and which streets were in which treatment. Councillors were provided with no information on which streets in their ward were under which treatment. The Council team running the intervention were fully aware of the importance of maintaining experimental conditions at all

3.3 Data

We have collected data in collaboration with Lambeth Council on all parts of the appointment process, from the initial recruitment, through street champion activities, to impacts on street cleanliness, beautification, and changes in resident perceptions of their environment. We have detailed measures of each stage of the intervention from inputs to outcomes.

On street characteristics, we gathered existing administrative data to check for balance across our treatment groups and to act as controls in our regressions. Since the individual administrative statistics come from different sources, such as council records and the Census, the exact geographic focus differs slightly. Specifically, street length in metres, the number of addresses and buildings on each street, the proportion of the street that is estate and the number of anti-social crimes per year are measured at the street level. Mean age of residents, proportion of residents that are of White British ethnicity, and employment rate are measured at the output area level. Output area is the lowest geographical level at which Census estimates are provided, and encompasses approximately two streets. Median house price, house sales and multiple deprivation rankings are at lower super output area level. Lower super output area is a Census categorisation defined as an area which represents a socially homogeneous community. In rare cases where streets lay in multiple output areas or lower super output areas, the street-level variable is defined as the average of the output area or lower super output area observations.³⁰

Table 1 compares the streets in each treatment arm across these administrative statistics. We can see that the characteristics are largely balanced. The age of residents in the community extrinsic arm is significant at the five percent level, but the difference is less than a year younger than the average, which does not seem economically significant for the project at hand. There is a higher median house price in the letter only treatment arm, but given the other characteristics seem almost identical, it does not seem to represent a wider difference. We control for these characteristics in all the regressions we present.³¹

Our data on the experiment begins with the administrative data on the participation and level of activity by street champions. Lambeth Council documented the number of individuals who joined and their activities as street champions. From this data, we create three measure of participation: i) The number of people who joined the scheme on each street; ii) The number of follow-up meetings they had with the council; and, iii) Whether the street champions organised street clean-up events. We also

times, and seemed to have done so comprehensively.

³⁰All output area statistics are drawn from the most recent Census, which took place in 2011. Crime statistics are for June 2013 to June 2014, and were the most recent available at the time of analysis. House prices and sales numbers are for the calendar year 2013 and were the most recent available at the time of analysis.

³¹For 127 of the 170 streets in our sample, Lambeth had previously undertaken surveys of street cleanliness. In Table A2, we use this data to look at the balance of existing cleanliness across our streets. We see again that there is strong evidence of balance across our treatment groups. There is a small deviation from the average on the graffiti score for the extrinsic treatments, but the difference is small enough to have limited economic significance.

aggregate the number of activities per street, including street meetings, Freshview events (one-off events to improve the local street environment) and meetings with council officers as an aggregate measure of the intensity of activity.³²

Table 1 provides a preview of our main results using this data. It shows that simply setting up an appointment scheme increases the number of active street leaders on average from 0 to 2.5 per street. Public appointments matter. Providing pecuniary appointments raises that number to roughly 3, and providing identity incentives increases that number to 4. These results are fully in-line with the predictions of the model presented in section 2.

Our primary outcome for measuring street cleanliness came from surveys of our sample streets by Keep Britain Tidy, an independent environmental charity. Keep Britain Tidy was contracted by Lambeth as an extension of their existing environmental assessment regime. The surveys were based on the national benchmark environmental cleanliness reporting, the NI195 methodology.³³ A surveyor went to each street and a randomly chosen portion of that street was graded in terms of its cleanliness along four dimensions: litter, detritus, graffiti and fly-posting. For each dimension a street is defined as ‘acceptably clean’ or otherwise. In addition, surveyors counted the total number of items of different types of litter on the street (cigarettes, confectionery, non-alcoholic drinks, fast food, snackpacks, alcoholic drinks, packaging, paper tissue, and other). We also asked the enumerators to look for efforts of beautification of the street, deciding that a count of the number of planter boxes was the most reliable way to measure this. The surveys were repeated at 13 different points between September 2014 and May 2015. Streets were randomly surveyed on a different day of the week each time to ensure we got a picture of the whole week. Data was collected by trained enumerators who were blind to the allocation of streets to treatment and control groups.

³²We also sought to measure the characteristics of street champions to see what sorts of individuals came forward, how they differed across groups and how they differed from Lambeth as a whole. This was intended to be measured by three short online surveys that measured their characteristics, prior experience of volunteering, perceptions of their neighbourhood, motivations, personality type and willingness to contribute to public goods. Unfortunately, responses to these surveys were very low across our treatments. Given the small numbers of respondents, we cannot use this data to capture differences across treatment and control groups. However, we are able to document the characteristics and motivations of street champions as a whole with the caveat that this is likely to be a selected sample of street champions. The descriptive tables are available on request, but we give a flavour of the results here. In terms of individual characteristics, street champions were more likely to come from a White-British background (66% for street champions compared with 45% for Lambeth as a whole), much more likely to be owner-occupiers and more likely to have a degree. Their employment rate was similar to Lambeth as a whole though. In terms of satisfaction levels, street champions had similar levels of satisfaction with their local area as the country as a whole, suggesting there were not particularly motivated by dissatisfaction. They were, however, much more likely to have volunteered in the past or demonstrated civic engagement. This suggests that street champions were, unsurprisingly, a selected sample of individuals pre-disposed to public and voluntary engagement. Relatively large numbers knew their neighbours by face or name, though we were unable to find national comparison for this. We were also able to measure personality type according to the Big 5 criteria of openness, conscientiousness, extraversion, agreeableness and neuroticism. As compared with a recent national benchmark, street champions were similar in terms of openness, conscientiousness and neuroticism. However, they showed greater levels of extraversion, which is probably unsurprising for a scheme that explicitly seeks individuals to engage with their neighbours. They were also less agreeable, which suggests they may be more demanding and/or stubborn.

³³More information on the NI195 methodology can be found at <http://kb.keepbritaintidy.org/litterv5/FactsandFigures/ni195.pdf>

Based on this data, we defined the following primary measures of street cleanliness based on data collected after November 2014 (when the scheme was fully initiated): i) overall street cleanliness – proportion of occasions on which the the street was deemed acceptable across the four dimensions on the the nationally utilised NI195 standard (litter, detritus, graffiti, flyposting); ii) total litter count, averaged across observations; iii) plant litter acceptability score – proportion of occasions on which the street was deemed acceptable; iv) fly-tipping acceptability score – proportion of occasions on which the street was deemed acceptable; and, v) the maximum number of planter boxes observed on a street during the survey period.

It is notable that the baseline levels of street cleanliness were relatively high. For all the streets in our sample, the proportion of first-round surveys rating the total cleanliness grade (indicating whether the four dimensions of the NI195 were ‘acceptably clean’ on average) was 82%. This implies both that the cost of being a street champion would not on average be overwhelming in terms of physical cleaning. At the same time, there was certainly room for improvement in areas such as detritus and litter, where only 66% and 67% of visits were graded as acceptably clean respectively.

Finally, Lambeth extended their regular residents survey to a randomly chosen set of roughly 4% of residents on 139 of our sample streets and a number of questions on street champions were added. Budgetary constraints restricted us from extending the residents survey to all sample streets. This enabled us to look at an additional set of outcomes: i) whether randomly chosen residents had heard of the Street Champion scheme; ii) whether they were satisfied with their local area; iii) an index of social capital - defined as the proportion of statements in the community survey that were targeted at measuring social capital that the respondent strongly agreed or agreed with³⁴; iv) targeted anti-social behaviours – how many of the following the resident agreed are problems (rubbish or litter, vandalism or graffiti, dog mess); and, v) non-targeted anti-social behaviours - how many of the following the resident agreed are problems (noisy neighbours, rowdy teenagers, people using or dealing drugs, people being drunk, unwanted door knockers).

Resident’s baseline levels of satisfaction with Lambeth were also relatively high at baseline. In the last six resident’s surveys, roughly 80% of residents stated they were ‘satisfied with the local area’. However, the importance of clean streets has been repeatedly emphasised as the second most important determinant of whether Lambeth is a ‘good place to live’ behind crime, and with the cleanliness of streets the area most in need of improvement (Lambeth Council, 2014).

³⁴These statements were: ‘I feel like I belong to this neighbourhood’; ‘The friendships and associations I have with other people in my neighbourhood mean a lot to me’; ‘If I needed advice about something I could go to someone in my neighbourhood’; ‘Neighbours around here help each other’; ‘I would be willing to work together with others on something to improve my neighbourhood’; ‘Community events that I would like to get involved with happen in my area’; ‘I regularly stop and talk with people in my neighbourhood’; ‘I would speak highly of my neighbourhood if asked’; and, ‘My neighbourhood is changing for the better’.

Within the residents survey, we collected a set of respondent characteristics to act as additional controls for the regressions in Table 4. These were the gender, age, disability status and the number of years the respondent had lived in Lambeth.

It is noteworthy that all of the data collected was made available by tweaking Lambeth’s existing systems of data collection. Contracting out data collection to nationally recognised independent survey agencies has ensured the independence and validity of the data. Using existing indicators of outputs and outcomes also makes them directly policy relevant.

4 Results

Our main estimates of the impact of the street champions initiative and the varying incentive schemes under which their appointments were made was undertaken using an OLS regression of the following form,

$$y_s = \mathbf{1} \{ \mathbf{Treatment} = \mathbf{1} \} + X_s + \epsilon_s \quad (4)$$

where y_s is a dependent variable at the street level, such as the number of street champions or the litter count, $\mathbf{1} \{ \}$ is a vector of treatment dummies that excludes the pure appointment dummy, and X_s is the set of control variables described in section 3.3. Street level controls are included across the specifications, though results are similar without them. We use robust standard errors in Tables 1 to 3. In Table 4, the analysis is at the level of the individual resident, so that resident characteristics are included as controls and the errors are clustered at the street level.

In all tables, we exclude the pure appointment dummy, such that all results presented are relative to the pure appointment scheme. Relative to the control dummy, they describe the impacts of pure appointment schemes. Relative to the incentive dummies, the results describe the impact of additional incentives in the appointment offer. All estimates are calculated on an intention-to-treat (ITT) basis. In this context, this means we are examining the offer of the scheme to streets, rather than the impact amongst those who took up the offer.

4.1 Effects of Appointments on Street Activities

We begin our analysis by looking at the impact of appointments on the likelihood that a street has a volunteer street champion. Column 1 of Table 2 regresses treatment dummies on a dummy that takes the value 1 if any resident volunteered to become a street champion. We see that every treated street has at least one resident volunteer to take up the position of street champion. This is true across the treatments. In not one control street that the council monitored did a resident start engaging organically in street

cleansing or beautification, despite the existence and publicisation of the ‘Do the Right Thing Campaign’.

The coefficient on the control dummy relative to the pure appointment implies that the impact of simply setting up an appointments scheme is substantial. Residents volunteered to become street champions in every single street with the pure appointment treatment. This is evidence of the power of public appointments.

Where the nature of appointments begin to play a role is in the number of residents that volunteered to become street champions. Column 2 of Table 2 runs specification (4) on a count of the number of residents who volunteered to become street champions. Once again, simply initiating the scheme caused 2 residents per street to come forward and commit to cleansing and beautifying the street. However, prestige appointments double the number of street champions to 4 per street, a difference with the pure appointment scheme significant at the 1% level. The pecuniary and social appointments also have positive impacts on uptake, but they are weaker, increasing the number of street champions to approximately 3 per street. These differences in numbers may be economically meaningful if individuals find it easier to sustain their roles in groups due to commitment devices or the lower cost of effort.

So what do these street champions do? As an aggregate measure of the intensity of activity, we count the number of activities per street that is a sum of the number of street meetings, meetings with council officers, and Freshview events. The results from this count variable are presented in Column 3. We see that relative to the pure control, the appointment only scheme gets residents working towards cleaner, more beautified streets. The coefficient on the pure control is negative and significant at the 1% level. Once again, the nature of the appointment matters, with both the prestige and social appointments raising the level of activities significantly, at the 10% and 5% levels respectively. The prestige appointment roughly doubles the number of activities from 1 substantive activity per street to 2 per street.

Do the different incentives associated with the different appointments nudge street champions towards different profiles of activity? It does not seem so. Columns 4 and 5 of Table 2 present results from regressions on the the raw numbers of formal meetings with the Council and whether Freshview events were organised. We see a similar pattern across the incentives, with the prestige appointment having the largest effect, social appointments having an impact significant at the usual levels, and individual pecuniary incentives having little additional impact at all.

Across the treatments, the absolute numbers of activities are not large, and it seems only the incentivised street champions actually achieve community activities. Appointment only street champions have a meeting with the Council about their plans, but are no more likely than the pure control to sustain that effort into organising a clean up event. The incentivised street champions, however, both organise meetings with the council and are then substantially more likely to sustain that effort into a clean up event.

The scale of the impacts on clean up events are very large in relative terms, increasing the likelihood of an event by over 10 times. Thus, whilst appointments are generally attractive to citizens, for them to be effective in terms of public good provision, they must be formulated appropriately.³⁵

A joint Wald test of the coefficients in columns 2 to 4 reflect an overall assessment of whether the appointment scheme has had an impact on citizen behaviour. For the set of prestige, pecuniary, social and pure appointment coefficients, the corresponding p-values from such a test are 0.00, 0.03, 0.08 and 0.00. Thus, there is strong evidence that the set of appointment schemes had a substantive impact on citizen activity.

These results closely track the predictions from the model in section 2. We see that simply appointing members of the citizenry to public positions raises their efforts towards public good provision. Increasing the salience of those positions has a significant impact on their effort levels and the degree to which their efforts are sustained. We also see some evidence that social appointments have a larger impact on take up and activity than pecuniary appointments, as suggested by the model. This empirical exercise has also allowed us to make a claim that the impact of shifting the opportunity cost function by f (equation (3)) has a similar magnitude of effect on group clean up activities as increasing the salience of the appointment (strengthening the λ s in equation (2)). The impacts of the prestige and social appointments are not significantly different at the 1% level. Thus, incentives of different types can empower appointments to be effective.

4.2 Effects of Appointments on Environmental Outcomes

The next question that remains is whether these efforts had any effects on cleanliness, beautification, or community satisfaction and cohesion. We begin by using the Keep Britain Tidy data to assess the impact on cleanliness and beautification. Table 3 presents results from regressions of form of (4) where the dependent variables are various measures of street cleanliness and beautification.³⁶

Column 1 is based on an overall index of street cleanliness, defined as the proportion of surveys in which the NI195 elements were graded as ‘acceptably clean’. We see no evidence of an impact across any of the treatments relative to the pure control. A similar pattern can be seen in Column 2, which presents the raw litter count (all types of litter) from a random transect (50m stretch of road) on the sample street. Again, there are no clear reductions in litter, and if anything the litter count is higher in treatment streets (though the differences are insignificant at the usual levels). The same is true for plant litter in Column

³⁵We can also estimate the total impact of being an incentivised street versus a pure appointment street by regressing a binary variable that takes the value 1 if incentives were offered to residents of a street on the outcomes described above. We find that incentivised streets are more likely to undertake clean up events, a difference significant at the 1% level.

³⁶Table A3 presents corresponding results for each of the measures of cleanliness collected by the Keep Britain Tidy enumerators.

3, and flytipping in Column 4. Thus, across multiple measures of street cleanliness, there is no evidence that the activities documented in Table 2 led to any changes in street cleanliness.

As argued in the model presented in section 2, street champions will free-ride on existing government provision. This would be consistent with the equilibrium observed here, with the scale of government cleansing and corresponding levels of cleanliness relatively high. In response, street champions may have substituted their efforts to other margins of street beautification.³⁷

We therefore asked the Keep Britain Tidy enumerators to extend their normal surveys to include an indicator of beautification - whether there were planter boxes found on the street. Planter boxes are a traditional way for residents to beautify their street in Lambeth and more generally London (see Figure A3 for photos of examples). Column 5 presents results to support the view that street champions targeted beautification. Appointments on their own (the pure appointment treatment) do not have significant impacts on the extent of beautification. However, streets with prestige appointments were six times more likely to have planter boxes on their street relative to the pure appointment. This effect is significant at the 5% level. We also see a smaller but still substantial impact of community incentives, echoing the results in Table 2. These results would suggest that incentives were a necessary addition to a simple appointment scheme for it to have sustainable impact on beautification.

One interpretation of the above results is that street champions were focussing their efforts on beautification and the development of social capital because these goods were under-provided by government. Another is that the limited impact on cleanliness is a reflection of street champions' efforts crowding out the efforts of their neighbours. Unless a street champion raises their provision of a good above g^a , they will simply swap their neighbours efforts for their own. These efforts still increase aggregate utility, since their neighbours can consume more private good/time but enjoy the fruits of the utility maximising activities of the street champion. In both of these cases, citizens should report increased utility. On the other hand, if street champions focused their contributions on goods they personally valued the most despite the interests of the wider community, we should see limited or even negative effects on aggregate welfare. We therefore now turn to whether streets exhibited increased satisfaction with the community and greater social cohesion.

4.3 Effects of Appointments on Resident Satisfaction

The second set of outcome data we collected was the survey of residents by Lambeth Council that recorded residents' perceptions of the scheme and their neighbourhood. The primary purpose of this survey was to

³⁷Whilst cleaner streets was flagged as one of the top priorities for the council in recent residents' surveys, citizens may have rather meant more beautified streets, cleaner in the sense of clean painted walls, pavement planter boxes and more attractive front gardens.

understand the views and perceptions of Lambeth residents with regards their immediate area and how the Borough as a whole was run. Due to budget constraints, the extension of the survey to sample streets was limited to a random subset of 139 (with an even likelihood of inclusion across treatments).

Table 4 shows the impact of the Street Champions Scheme on the perceptions of the 498 residents surveyed. In these regressions the unit of observation is the resident, we include respondent characteristics as additional controls, and we cluster standard errors at the street level. To ensure consistency with our previous tables that took the street as the unit of analysis, observations are weighted by the inverse of the number of respondents on their street.

This is a relatively demanding exercise in terms of identifying an effect. We are questioning approximately 3 randomly chosen residents per street (out of an average of 80 households) on their perceptions of the local environment. These views will be determined by a wide range of factors, and so the hypothesis that a small-scale program of public appointments has significant impacts on their views could be seen as ambitious.

We begin by looking at whether residents were aware of the Street Champions Scheme. This relates to how the scheme was rolled out under the different treatments. Where street champions were given individual incentives for activity, they may focus on their own efforts at the cost of general participation and awareness. Where the incentives were at the community level, the model of section 2 indicated this was most likely to raise the engagement of multiple residents with the Street Champions Scheme since it reduced the opportunity cost of involvement for all.

We see evidence of this pattern in Column 1 of Table 4, with social appointments having the highest impact of all the treatments on the likelihood that a randomly chosen resident will have heard of the Street Champions Scheme. Relative to the pure appointment, this effect is significant at the 5% level.

A key objective of the Street Champions Scheme was to have positive impacts on social capital in treatment communities. Levels of civic participation in Lambeth are similar to the UK as a whole, at around 30% of citizens involved in some form of community activity at some point in the year.³⁸ The policy intended for street beautification activities to act as a foundation for improved relationships between neighbours, in a similar way to the building of social capital through participation in microfinance groups reported in Feigenberg, Field and Pande (2010).³⁹

In Column 2 we use the social capital index outlined in section 3.3 to assess the impact of the Street

³⁸Figures for civic participation across the UK as a whole, as well as in our areas of focus can be found at the Community Life Survey 2014-15 web site (<https://www.gov.uk/government/publications/community-life-survey-2014-to-2015-data>).

³⁹Glaeser, Laibson and Sacerdote (2002) treat the decision to invest in social capital as a standard investment decision, with investment rising in the time a citizen expects to spend in the community, falling with the discount and depreciation rates, and falling with respect to the opportunity cost of time. Given that homeowners expect to spend longer in their communities and can benefit from capitalisation effects when selling their house (Hoff and Sen, 2005), they unsurprisingly find that homeowners are more likely to invest in social capital, echoing the findings of Glaeser and Sacerdote (1999).

Champions Scheme on social capital in Lambeth. We find that in streets with social appointments, the social capital index is substantially higher, and almost 50% higher than in control streets. Though the measure is relatively noisy, this coefficient stands out from the others, and the coefficients on community and prestige appointments are significantly different at the 5% level.

To put the impact on social capital in streets with social appointments in context, we can compare the coefficient on the social appointments treatment to the coefficient on the index of multiple deprivation that we are using as a control. Though better off streets do have a higher level of social capital on average, the impact of having a Street Champion with a social appointment on a street is akin to moving that street from the median level of multiple deprivation to the 99th percentile.

Jointly, the first two columns present evidence that social appointments create a communal response led by the street champions. If enhanced social capital is an aim of government, this provides supportive evidence to the provision of social appointments having beneficial impacts.

Beyond social capital, the Street Champions Scheme was intended to improve resident's perception of their local area. The residents survey also asked respondents whether they were satisfied with their local area, and whether they believed that particular 'anti-social' behaviours were prevalent. Column 3 presents results from a regression on a dummy that takes the value 1 if residents state they are 'very satisfied' or 'fairly satisfied' with their local area. This regression could be said to be looking at the overall efficacy of the scheme, and in particular which appointments scheme translates into higher resident utility.

The results are clearly in-line with those in Table 2, which implied that prestige appointments induced the most significant effort from street champions. We see that those residents living in streets under the identity scheme were 10 percentage points more likely to claim they were satisfied with their local area, and the coefficient is significantly different from that of the community scheme at the 5% level. We find no substantive effect in any of the other appointment schemes.

The measurement of satisfaction allows us to investigate the concern outlined in our model that differences between appointees preferences and other citizens might make them focus on goods that were not of value to the wider community. Though satisfaction does not equate to social welfare, it is an effective proxy in this setting. In line with the above results, we can reject the null of a negative impact of the appointment scheme on citizen satisfaction when accompanied by prestige appointments at the 3% level. However, when we test whether any appointment scheme has a negative impact on satisfaction, we can only reject this at the 19% level.

If the above correlation was causal, we would expect to find a clear link between the appointment scheme and targeted areas of citizen behaviour. We therefore create an index denoting the proportion of the following issues residents agree are problems in their local area: rubbish or litter, vandalism or graffiti,

and dog mess. Column 4 indicates that relative to the control, all of the incentivised appointment schemes generate reductions in the perception of targeted anti-social behaviours that are significant at the usual levels.⁴⁰ These results indicate that the efforts of all appointees, as reflected in Table 2, are having an affect on neighbourhood perceptions of beautification, but that they are strongest in the prestige treatment. Relative to pure appointment, the prestige treatment generates the largest reduction in perceived negative perceptions of targeted issues, with the reduction significant at the 10% level.

As a ‘falsification’ test, we can look at those behaviours that were not targeted by the Street Champions scheme. We should see substantially weaker effects on these issues (though potentially non-zero effects due to the possibility of positive spillovers from the activities of street champions). We create an index like that of Column 4 that focuses on whether residents perceived the following as issues in their local area: noisy neighbours, rowdy teenagers, people using or dealing drugs, people being drunk, and unwanted door knockers. Column 5 presents the results from the regression on this index, and we see a much more muted effect than in Column 4 across all treatments.

Together, Columns 3, 4 and 5 indicate that all appointment schemes are having positive impacts on the perception of community beautification, and most clearly in the areas targeted by the Street Champions Scheme. However, the prestige appointment scheme seems to be the most effective in delivering local public goods, and it is only in this case that we see the scheme have detectable effects on neighbours total satisfaction with their local area.

A more systematic approach to evaluating the results in Table 4 is to perform a joint Wald test on all of the coefficients associated with a treatment arm. We find p-values that reject the null of zero joint significance of the prestige, pecuniary, social and pure appointment schemes to be 0.10, 0.36, 0.01 and 0.77 respectively. Summarising our wider results, we see that the prestige and social appointments have impacts significant at the usual levels whilst the pure and pecuniary appointments do not.

Taken together, the results from the residents surveys imply that the nature of the incentives that accompany a public appointment matter for the impacts of the actions taken by the appointee. We find some evidence that prestige appointments have the largest impacts on the street champions efficacy and that social appointments have the largest impacts on social capital and community engagement with the scheme.⁴¹

⁴⁰Specifically, the coefficients on the prestige, pecuniary and social appointments relative to the pure control are -0.13, -0.11 and -0.07 significant at the 1%, 5% and 10% levels respectively.

⁴¹The consistency of our results with a model that emphasises the increased benefits of different appointment schemes also provides evidence against the notion that appointments are simply lowering the cost of interaction with a street champion’s neighbours. If appointment simply made a street champion feel entitled to reach out to their neighbours, reducing the marginal cost of provision, we would not expect to see differential results by the nature of incentive.

5 Conclusions and Further Research

This paper investigates the power of public appointments to motivate citizens to undertake costly activities towards the provision of local public goods. It experiments with multiple appointment schemes that emphasise different incentives accompanying the public appointment. It does so in a local government in London, UK, in the context of environmental and social local public goods.

The results across all tables closely mirror the predictions of the canonical model of public good provision when small refinements are made to the basic utility functions that correspond to the nature of the appointment process. All appointment schemes improve resident's perceptions of targeted anti-social behaviours in the community. We find that making salient aspects of the appointment to the appointee and their neighbours generates the most significant degree of activity and the largest impacts on citizen satisfaction and perception of reductions in anti-social behaviour. We also find that providing incentives at the community (street) level, though having more muted effects on resident satisfaction, does increase the breadth of citizens who are aware of the scheme and the social capital on that street. The collection of data from across the chain of service delivery allows us to trace the predictions of our model from appointment all the way through to impacts on citizen satisfaction.

It is worth emphasising the link between the public appointment scheme and the positive impacts on our index of social capital. As Feigenberg, Field and Pande (2010) argue, there is little empirical literature on what policy tools are available to build social capital. A key benefit of experimenting with contracts between the state and citizens is that it may extend the range of areas in which public policy can effectively intervene. If authors such as Putnam (2000) are correct about the long term decline in social capital, public appointments of street champions may be a key mechanism with which the government can encourage citizens to build relationships.

We do not find substantive effects of the appointments on the cleanliness of the streets, one of the key outcomes the council we worked with were interested in. This could be because the baseline cleanliness was simply too high for us to detect an effect in the sample of 170 streets we experimented on, because citizens were rationally focussing their efforts on other public goods targeted by the scheme such as social capital, or that the local government is simply cleaning too much.

We have dealt with the second interpretation in the body of the paper. Broadly, appointees will focus their efforts on goods that they perceive having a comparative advantage in the production of. They will continue to free-ride on the efforts of the government for all other goods.

The last interpretation highlights a potential strength of appointing citizens to quasi-official public posts. The government may be mis-interpreting residents call for cleaner streets as litter picking. Residents may in fact prefer beautification, such as the cleaning and painting of walls, the provision of planters in

place of weed-filled pavements, and the improvement of public facing gardens. This could partly explain why appropriately incentivised appointee street champions increase the beautification activities on their street. The power of appointments may be as much in creating channels for better communication of citizen preferences as in the delegation of costly cleansing and beautification activities to residents. Rather than a substitute, it seems more likely that public appointments may be an effective complement to direct intervention by centralised government officials.

This paper has found that appointment schemes that use resources on the trappings of state have distinct impacts to those that provide direct incentives. Both the prestige and social appointment sets of schemes had benefits on resident experience of their local area, but in distinct areas. Thus, there is an important research agenda to be explored around the links between the particular design of public appointment schemes and different margins of public policy (such as cleanliness and social capital).⁴² Similarly, the paper hints at a much broader agenda on the incentive effects of various appointments, public or private. The paper provides some of the first evidence of the incentive regimes that might underlie long-term service contracts between citizens and the state. How to structure appointments so to yield the maximum social (or private) benefits is a relatively open question.

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⁴²There are important areas of appointments that this paper has not been able to touch on. Importantly, it would be important to understand how we can optimally structure public appointments to minimise any negative consequences of such schemes, such as the abuse of power. Conversely, effectively designed co-production arrangements may be a mechanism for improved public accountability that limits abuses by government employees. As citizen public officials gain access to more information about public policy, they may be one method for constraining abuses of power in the wider public sector.

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Table 1: Balance Table for Street Champion Streets

Means and standard deviations

	(1) All	(2) Control	(3) Pure	(4) Prestige	(5) Pecuniary	(6) Social
Baseline Characteristics						
Street Length (m)	224.53 [132.69]	222.05 [134.83]	258.91 [160.36]	230.52 [135.33]	200.21 [110.78]	217.16 [124.59]
Number of Addresses	79.69 [68.94]	77.1 [80.59]	78.63 [64.40]	81.47 [51.26]	69.41 [62.61]	91.22 [83.70]
Number of Buildings	57.14 [41.23]	53.83 [43.79]	60.9 [39.26]	57.36 [38.49]	51.62 [37.59]	62.05 [47.56]
Proportion of Street Estate	0.01 [0.02]	0.01 [0.01]	0.01 [0.02]	0.01 [0.02]	0.01 [0.01]	0.01 [0.02]
Mean Age of Residents	34.46 [2.89]	35.22 [3.33]	34.18 [2.50]	34.64 [2.72]	34.7 [3.58]	33.67** [2.01]
Proportion of Residents White British	0.45 [0.14]	0.44 [0.13]	0.48 [0.16]	0.48 [0.15]	0.44 [0.12]	0.44 [0.12]
Employment Rate	0.92 [0.04]	0.91 [0.04]	0.92 [0.04]	0.92 [0.05]	0.92 [0.05]	0.91 [0.04]
Median House Price	384.32 [126.12]	357.04 [132.85]	414.76* [120.37]	376.22 [113.95]	407.16 [156.30]	366.79 [97.03]
House Sales Per Year	27.03 [12.55]	27.98 [11.34]	25.44 [11.52]	30.95 [16.59]	25.32 [11.76]	25.46 [9.97]
Number of Anti-Social Crimes Per Year	4.18 [10.88]	3.83 [7.87]	3.13 [6.84]	2.14 [4.40]	3.35 [8.21]	8.14 [18.97]
Index of Multiple Deprivation Ranking	30.35 [11.04]	30.26 [12.30]	30.96 [12.79]	29.56 [10.40]	30.78 [8.76]	30.26 [11.65]
Total Cleanliness Grade (pre-SCS)	0.88 [0.11]	0.9 [0.13]	0.89 [0.10]	0.88 [0.11]	0.86 [0.10]	0.85 [0.13]
Scheme Outcomes						
Number of Street Champions Across All Streets	467	0	75	154	117	121
Average Number of Street Champions Per Street	2.75	0	2.50	4.28	3.16	3.27
Number of streets	170	30	30	36	37	37

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level, where differences are computed relative to the control sample. Standard deviations are in parentheses. Street length measured in metres, number of (non-estate) addresses, number of (non-estate) buildings, proportion of the street that is estate, number of anti-social crimes per year and total cleanliness grade are measured at the street level. Total Cleanliness Grade is an index of street cleanliness scores based on the NI195 measures collected nationally by Keep Britain Tidy. The index aggregates gradings of the cleanliness of a section of the street (a randomly chosen transect) along four dimensions: litter, detritus, graffiti and fly-posting. For each dimension a street is defined as 'acceptably clean' or otherwise. The index used is the proportion of dimensions across all pre-scheme surveys for which the street was acceptably clean. Mean age of residents, proportion of residents that are of White British ethnicity, and employment rate are measured at the output area level. Output area is the lowest geographical level at which Census estimates are provided. Median house price, house sales and multiple deprivation rankings are at lower super output area level. Lower super output area is a Census categorisation defined as an area which represents a socially homogeneous community. In cases where streets lay in multiple output areas or lower super output areas, the street-level variable is defined as the average of the output area or lower super output area observations. All output area statistics are drawn from the most recent Census, which took place in 2011. Crime statistics are for June 2013 to June 2014, and were the most recent available at the time of analysis. House prices and sales numbers are for the calendar year 2013 and were the most recent available at the time of analysis. Figures are rounded to two decimal places.

Table 2: Outputs of Street Champion Scheme

Dependent Variable Column 1: Indicator of Any Volunteer in Street [Champion=1]; Column 2: Number of Street Champions; Column 3: Total Activities of Street Champions; Column 4: Number of Meetings With Council; Column 5: Indicator of Whether Any Street 'Clean Up' Events Held [Yes=1]
Robust Standard Errors
OLS Estimates

	(1) Any Street Champion	(2) Number of Street Champions	(3) Street Champions Activities	(4) Meetings With Council	(5) Street 'Clean Up' Events
Prestige Appointment	0.00*** (0)	1.80*** (0.63)	1.24** (0.52)	0.88** (0.41)	0.15** (0.07)
Pecuniary Appointment	0.00*** (0)	0.95* (0.57)	0.39 (0.35)	0.39 (0.28)	0.07 (0.05)
Social Appointment	0.00*** (0)	0.77 (0.54)	0.74* (0.39)	0.48* (0.29)	0.12** (0.06)
Control	-1.00*** (0)	-2.39*** (0.43)	-1.22*** (0.27)	-1.11*** (0.22)	0.01 (0.02)
Mean of Dependent Variable	0.82	2.75	1.52	1.27	0.06
Street Controls			Yes		
Adjusted R-squared	1.00	0.32	0.16	0.18	0.00
Observations	170	170	170	170	170

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in parentheses. All columns report OLS estimates. The unit of analysis in all columns is the street. The dependent variable in column 1 is a binary variable reflecting whether at least one Street Champion was recruited on a street, which takes the value 1 when the road has a single Street Champion. The dependent variable in column 2 is the total number of street champions recruited on a street. The dependent variable in column 3 is a measure of the number of 'activities' the Street Champions on the street were involved in. It is a sum of the number of the number of street meetings, meetings with the Council and street 'clean up' parties the street held. The dependent variable in column 4 is a count of the number of meetings the street held with the Council. The dependent variable in column 5 is a dummy of whether the street held any 'Clean Up' events during the study period. Street controls are made up of measures at three levels of aggregation. The length of the street in metres, number of non-estate addresses, number of non-estate buildings, proportion of the street that is estate and the number of anti-social crimes per year are all measured at the street level. The mean age of residents, proportion of residents that are of White British ethnicity, and employment rate are measured at the output area level. Output area is the lowest geographical level at which Census estimates are provided. Median house price, house sales and multiple deprivation rankings are at lower super output area level. Lower super output area is a Census categorisation defined as an area which represents a socially homogeneous community. In cases where streets lie in multiple output areas or lower super output areas, the street-level variable is defined as the average of the output area or lower super output area observations. All output area statistics are drawn from the most recent Census, which took place in 2011. Crime statistics are for June 2013 to June 2014, and were the most recent available at the time of analysis. House prices and sales numbers are for the calendar year 2013 and were the most recent available at the time of analysis. Figures are rounded to two decimal places.

Table 3: Outcomes of Street Champion Scheme

Dependent Variable Column 1: Aggregate cleanliness index [0-1 scale]; Column 2: Number of Pieces of Litter Observed; Column 3: Proportion of Surveys Observing 'Acceptable' Levels of Plant Litter; Column 4: Proportion of Surveys Observing 'Acceptable' Levels of Flytipping; Column 5: Number of Planters
Robust Standard Errors
OLS Estimates

	(1) Total Cleanliness Grade (SCS)	(2) Litter Count	(3) Plant litter	(4) Flytipping	(5) Beautification
Prestige Appointment	0.00 (0.02)	8.32 (5.35)	-0.01 (0.03)	-0.03 (0.03)	0.17** (0.08)
Pecuniary Appointment	-0.01 (0.02)	4.04 (5.11)	-0.01 (0.03)	0.01 (0.02)	-0.05 (0.06)
Social Appointment	0.01 (0.02)	4.41 (4.71)	-0.01 (0.03)	0.01 (0.02)	0.12 (0.08)
Control	0.01 (0.02)	-2.54 (4.5)	0.02 (0.02)	0.00 (0.02)	0.04 (0.07)
Mean of Dependent Variable	0.93	48	0.88	0.96	0.11
Street Controls			Yes		
Adjusted R-squared	0.03	0.08	0.00	0.07	0.02
Observations	170	170	170	170	170

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in parentheses. All columns report OLS estimates. The unit of analysis in all columns is the street. The dependent variable in column 1 is an index of street cleanliness scores based on the NI195 measures collected nationally by Keep Britain Tidy. The index aggregates gradings of the cleanliness of a section of the street (a randomly chosen transect) along four dimensions: litter, detritus, graffiti and fly-posting. For each dimension a street is defined as 'acceptably clean' or otherwise. The index used in column 1 is the proportion of dimensions across all pre-scheme surveys for which the street was acceptably clean. The dependent variable in column 2 is an average raw litter count within the transect studied over the study period. The dependent variables in columns 3 and 4 are the proportion of Keep Britain Tidy surveys in which the amount and distribution of plant litter or the amount of fly-tipping respectively was deemed to be 'acceptable' (graded B or above). The dependent variable in column 5 is a count of the maximum number of planter boxes observed on a street over the study period. Street controls are made up of measures at three levels of aggregation. The length of the street in metres, number of non-estate addresses, number of non-estate buildings, proportion of the street that is estate and the number of anti-social crimes per year are all measured at the street level. The mean age of residents, proportion of residents that are of White British ethnicity, and employment rate are measured at the output area level. Output area is the lowest geographical level at which Census estimates are provided. Median house price, house sales and multiple deprivation rankings are at lower super output area level. Lower super output area is a Census categorisation defined as an area which represents a socially homogeneous community. In cases where streets lie in multiple output areas or lower super output areas, the street-level variable is defined as the average of the output area or lower super output area observations. All output area statistics are drawn from the most recent Census, which took place in 2011. Crime statistics are for June 2013 to June 2014, and were the most recent available at the time of analysis. House prices and sales numbers are for the calendar year 2013 and were the most recent available at the time of analysis. Figures are rounded to two decimal places.

Table 4: Impacts of Street Champion Scheme

Dependent Variable Column 1: Indicator of Whether Respondent Has Heard of Street Champions Scheme [Has Heard=1]; Column 2: Aggregate Social Capital Index [0-1 scale]; Column 3: Indicator of Whether Respondent is Satisfied With Their Local Area [Fairly or Very Satisfied=1]; Column 4: Proportion of Respondents Observing 'Anti-Social Behaviours' Targeted by Scheme; Column 5: Proportion of Surveys Observing 'Anti-Social Behaviours' Not Targeted by Scheme.

**Standard Errors: Clustered by Street
OLS Estimates**

	(1) Heard of Street Champions Scheme	(2) Social capital index	(3) Satisfied with local area	(4) Perception of targeted anti-social behaviours	(5) Perception of non-targeted anti-social behaviours
Prestige Appointment	0.08 (0.08)	-0.01 (0.18)	0.09* (0.05)	-0.33* (0.18)	-0.12 (0.16)
Pecuniary Appointment	0.11 (0.08)	0.01 (0.18)	0.00 (0.05)	-0.23 (0.18)	-0.15 (0.15)
Social Appointment	0.16** (0.08)	0.33* (0.17)	-0.03 (0.07)	-0.14 (0.17)	0.11 (0.17)
Control	0.08 (0.08)	-0.01 (0.22)	-0.02 (0.06)	0.16 (0.17)	-0.04 (0.15)
Mean of Dependent Variable	0.19	0.75	0.90	0.25	0.12
Respondent Controls			Yes		
Street Controls			Yes		
Adjusted R-squared	0.05	0.12	0.05	0.07	0.08
Observations	498 (139)	498 (139)	498 (139)	498 (139)	498 (139)

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Standard errors clustered at the street level are in parentheses. All columns report OLS estimates. The unit of analysis in all columns is the citizen. The dependent variable in column 1 is a binary variable reflecting whether the citizen has heard of the Street Champions Scheme, which takes the value 1 if they have heard of the scheme. The dependent variable in column 2 is an index of social capital that is the sum of nine binary indicators reflecting different aspects of social capital on the street, such as 'Neighbours around here help each other'. The dependant variable in column 3 is a binary variable reflecting the degree of satisfaction the citizen expresses about their local area, which takes the value 1 if they state that they are 'very satisfied' or 'fairly satisfied' with their local area as a place to live. The dependant variable in column 4 is an index of anti-social behaviour targeted by the Street Champions Scheme that is the sum of three binary indicators that reflect anti-social behaviour the scheme targeted such as rubbish or litter lying around. The dependant variable in column 5 is an index of anti-social behaviour that was not targeted by the Street Champions Scheme that is the sum of five binary indicators that reflect anti-social behaviour the scheme did not target such as noisy neighbours. Observations are weighted by the inverse of the number of respondents on their street. Respondent controls are made up of indicators of gender, age, disability status and the number of years the respondent has lived in Lambeth. Street controls are made up of measures at three levels of aggregation. The length of the street in metres, number of non-estate addresses, number of non-estate buildings, proportion of the street that is estate and the number of anti-social crimes per year are all measured at the street level. The mean age of residents, proportion of residents that are of White British ethnicity, and employment rate are measured at the output area level. Output area is the lowest geographical level at which Census estimates are provided. Median house price, house sales and multiple deprivation rankings are at lower super output area level. Lower super output area is a Census categorisation defined as an area which represents a socially homogeneous community. In cases where streets lie in multiple output areas or lower super output areas, the street-level variable is defined as the average of the output area or lower super output area observations. All output area statistics are drawn from the most recent Census, which took place in 2011. Crime statistics are for June 2013 to June 2014, and were the most recent available at the time of analysis. House prices and sales numbers are for the calendar year 2013 and were the most recent available at the time of analysis. Figures are rounded to two decimal places.

Table A1: Incentive Schemes in Different Treatment Arms

Treatment Arm	Incentives					Cost (GBP)
	Appointment	Materials	Training	Council Recognition	Public Recognition	
Control	-	-	-	-	-	0
Pure Public Appointment	Appointed to a public role	-	-	-	-	0
Prestige Appointment	Appointed to a public role	Street Champion pack to identify you as a street champion (including hi-vis vest and polo shirt)	Free access to normally costly council training for the individual	Membership of the council's Do The Right Thing campaign	Public recognition for your contribution with a Meet the Mayor day and recognition at the Lambeth Country Show	~200/street
Social Appointment	Appointed to a public role	Free access to normally costly council services, tools and garden inputs tailored to the street (such as plants and seeds for the street)	Free access to normally costly council training targeted at the street as a whole (such as with 'Grimebuster officer')	Membership of the council's Do The Right Thing campaign	Street accreditation on Borough web site	~200/street
Pecuniary Appointment	Appointed to a public role	Free access to normally costly council services, tools and garden inputs tailored to the individual household	Free access to normally costly council training for the individual	Membership of the council's Do The Right Thing campaign	Street accreditation on Borough web site	~200/street

Table A2: Using Administrative Data to Assess Randomisation Balance

Means and standard deviations

	(1) All	(2) Pure Control	(3) Letter Only	(4) identity	(5) Individual Extrinsic	(6) Community Extrinsic
Detritus score	4.75 [0.61]	4.82 [0.55]	4.66 [0.65]	4.74 [0.76]	4.75 [0.58]	4.77 [0.53]
Litter score	5.12 [0.53]	5.15 [0.52]	5.13 [0.50]	5.2 [0.46]	5.13 [0.51]	5.02 [0.63]
Flyposting score	6.76 [0.45]	6.85 [0.33]	6.75 [0.34]	6.65 [0.68]	6.82 [0.37]	6.77 [0.39]
Graffiti score	6.73 [0.10]	6.92 [0.00]	6.72 [0.00]	6.84 [0.19]	6.62** [0.07]	6.61*** [0.05]
Proportion of streets with acceptable detritus	0.71 [0.37]	0.72 [0.36]	0.74 [0.34]	0.68 [0.37]	0.67 [0.42]	0.74 [0.36]
Proportion of streets with acceptable litter	0.88 [0.27]	0.9 [0.30]	0.91 [0.26]	0.92 [0.21]	0.88 [0.25]	0.79 [0.33]
Proportion of streets with acceptable flyposting	0.99 [0.09]	1 [0.00]	0.99 [0.04]	0.97 [0.19]	1 [0.00]	0.99 [0.03]
Proportion of streets with acceptable graffiti	0.99 [0.10]	1 [0.00]	1 [0.00]	0.97 [0.19]	0.99 [0.07]	0.99 [0.05]
Observations	127	21	22	29	26	29

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Standard deviations are in parentheses. All scores are increasing in cleanliness. The unit of analysis in all columns is the street. The number of observations is lower than the total number of experimental streets as not all experimental streets had existing cleanliness data available. Scores were derived from a national grading system for street cleanliness. A score of 7 equates to a grade A, a score of 1 equates to a grade D, with stepped grades at B+, B, B-, C and C-. Acceptability is defined as achieving a score greater than or equal to 5 (grade B or above). Baseline cleanliness data was collected over the period 2007-2013. In cases where streets were observed in multiple years, the street-level variable is defined as the average of all observations for that street. Figures are rounded to two decimal places.

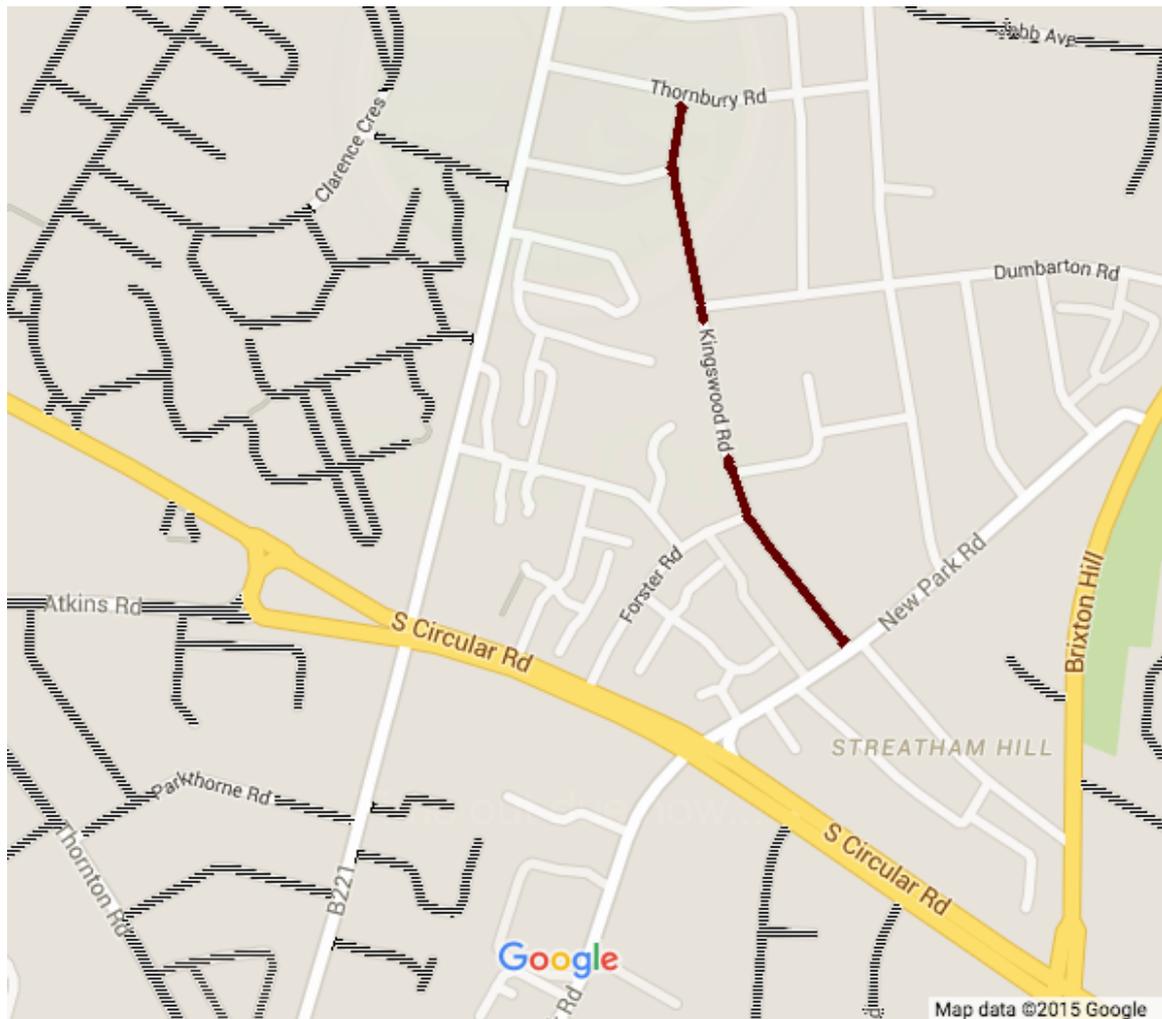
Table A3: Outcomes of Street Champion Scheme

Dependent Variable Columns 1 to 8: NI195 cleanliness grade [1-7 scale]; Columns 9 to 17: Number of Pieces of Litter Observed of Requisite Type (As Specified By Column Heading); Column 18: Number of Planters
Robust Standard Errors
OLS Estimates

	(1) Litter Grade	(2) Dog Fouling Grade	(3) Detritus Grade	(4) Graffiti Grade	(5) Flyposting Grade	(6) Weed Grade	(7) Leaf Blossom Grade	(8) Flytipping Grade	(9) Smokers	(10) Confectionery	(11) Non-Alcoholic	(12) Fast Food	(13) Snack Packs	(14) Alcoholic	(15) Packaging	(16) Paper Tissue	(17) Other Litter	(18) Planters
Prestige Appointment	-0.04 (0.03)	-0.01 (0.01)	0.05 (0.04)	0.00 (0.26)	0.00 (0)	0.02 (0.03)	-0.05 (0.05)	-0.03 (0.03)	5.12 (3.73)	0.17 (0.36)	0.21 (0.28)	0.23 (0.26)	-0.05 (0.11)	0.17 (0.2)	0.14 (0.1)	0.05 (0.18)	2.29 (1.76)	0.17** (0.08)
Pecuniary Appointment	-0.03 (0.04)	0.00 (0.01)	-0.02 (0.06)	-0.02 (0.79)	0.00 (0)	-0.01 (0.04)	-0.02 (0.04)	0.01 (0.02)	1.80 (3.4)	0.28 (0.3)	0.14 (0.26)	0.19 (0.2)	-0.09 (0.11)	0.11 (0.19)	0.08 (0.1)	0.02 (0.16)	1.51 (1.68)	-0.05 (0.06)
Social Appointment	-0.07* (0.04)	0.01 (0.01)	0.08* (0.04)	0.01 (0.06)	-0.01 (0)	0.02 (0.03)	-0.03 (0.05)	0.01 (0.02)	1.62 (3.34)	0.14 (0.27)	0.12 (0.23)	0.23 (0.16)	0.01 (0.11)	0.16 (0.16)	0.03 (0.1)	0.26 (0.17)	1.83 (1.74)	0.12 (0.08)
Control	-0.01 (0.03)	0.01 (0.01)	0.04 (0.05)	0.00 (0.48)	0.00 (0)	0.04 (0.03)	0.01 (0.04)	0.00 (0.02)	-1.19 (2.85)	-0.29 (0.3)	-0.13 (0.25)	0.08 (0.17)	0.19 (0.33)	-0.08 (0.16)	0.06 (0.11)	0.08 (0.17)	-1.25 (1.73)	0.04 (0.07)
Mean of Dependent Variable	0.90	0.99	0.88	0.97	1.00	0.90	0.85	0.96	25.03	2.95	1.88	1.29	0.51	0.90	0.75	1.39	13.09	0.11
Street Controls									Yes									
Adjusted R-squared	-0.01	0.01	0.09	0.08	-0.06	0.05	0.08	0.07	0.08	0.02	0.02	0.05	-0.03	0.01	0.06	0.00	0.04	0.02
Observations	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in parentheses. All columns report OLS estimates. The unit of analysis in all columns is the street. The dependent variable in columns 1 to 8 is an indicator of street cleanliness scores based on the NI195 measures collected nationally by Keep Britain Tidy. The variable is the proportion of surveys in which the street is 'acceptably clean' (scores greater than 4) or otherwise and cleanliness is defined respectively as the amount of litter, the degree of dog fouling, the amount of detritus, of graffiti, and of flyposting. The dependent variable in columns 9 to 17 is an average raw litter count within the transect studied over the study period where litter is defined respectively as litter associated with smoking, with confectionery, with non-alcoholic drinks, with fast food, with snack packs, with alcoholic drinks, with general packaging, with paper tissue, and with other litter. The dependent variable in column 18 is a count of the maximum number of planter boxes observed on a street over the study period. Street controls are made up of measures at three levels of aggregation. The length of the street in metres, number of non-estate addresses, number of non-estate buildings, proportion of the street that is estate and the number of anti-social crimes per year are all measured at the street level. The mean age of residents, proportion of residents that are of White British ethnicity, and employment rate are measured at the output area level. Output area is the lowest geographical level at which Census estimates are provided. Median house price, house sales and multiple deprivation rankings are at lower super output area level. Lower super output area is a Census categorisation defined as an area which represents a socially homogeneous community. In cases where streets lie in multiple output areas or lower super output areas, the street-level variable is defined as the average of the output area or lower super output area observations. All output area statistics are drawn from the most recent Census, which took place in 2011. Crime statistics are for June 2013 to June 2014, and were the most recent available at the time of analysis. House prices and sales numbers are for the calendar year 2013 and were the most recent available at the time of analysis. Figures are rounded to two decimal

Figure A1: Selection of Sample Streets Using a Buffer



To protect against contamination between two sample streets, we employed a strategy of defining any street physically connected to a sample street as a 'buffer' street, and any street physically connected to a buffer street as a 'secondary buffer street'. These buffer streets were ineligible for inclusion in the sample. As an example, the above diagram shows Kingswood Road (shaded in a solid colour) chosen to be a sample street. Since Thornbury and Dunbarton Roads connect directly with Kingswood Road, they are buffer streets. All streets physically connected to these buffer streets are secondary buffer streets. With Kingswood Road nominated as a sample street, all ineligible streets are shaded in white. The set of potentially eligible streets in the above map are shaded with black stripes.

Figure A2: Distribution of Sample Streets

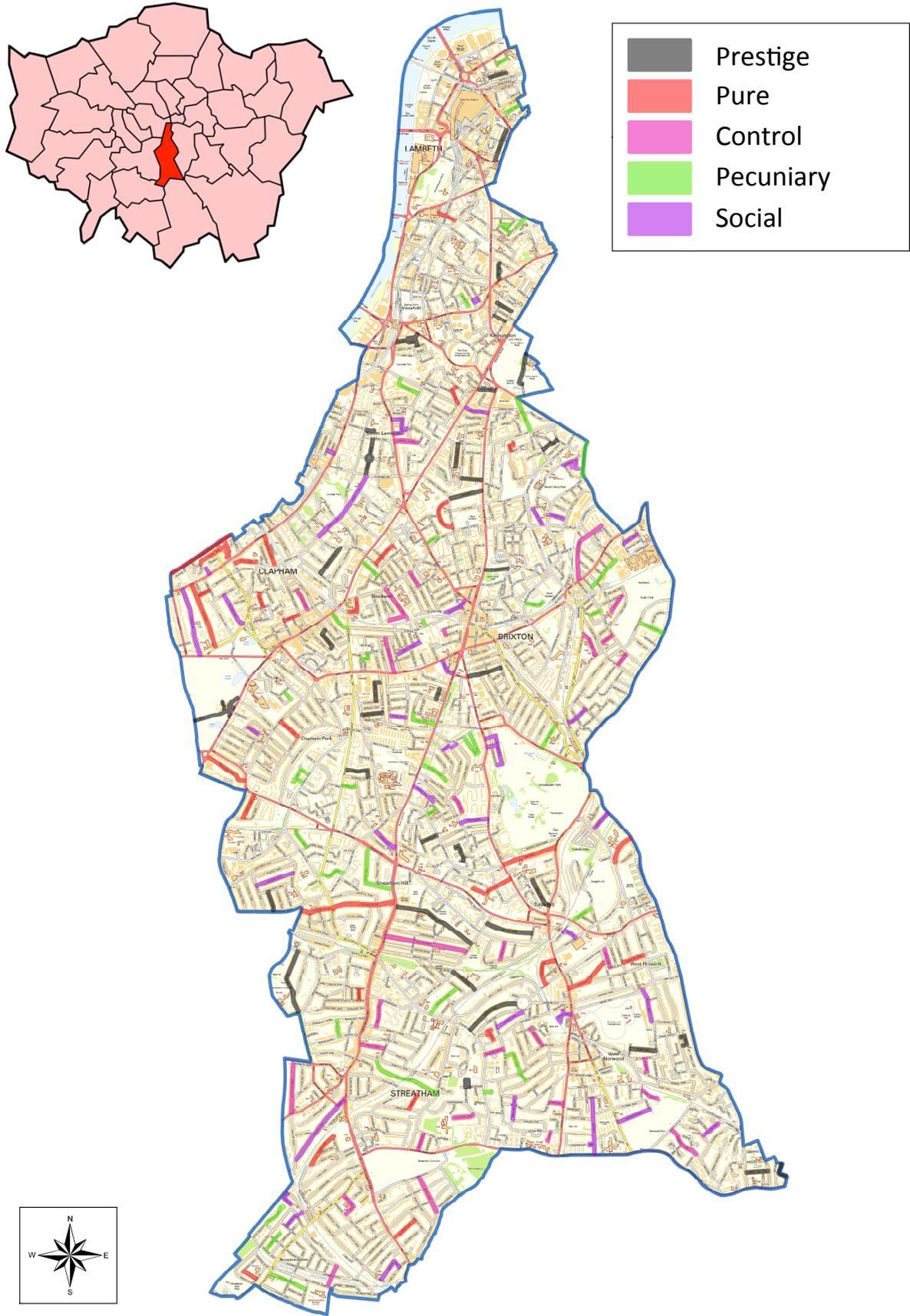


Figure A3: Images of Streets Champion Activities



Captions (clockwise from top left): A Street Champion displays her Street Champions vest and mug; Neighbours work together to clean up their street; Planters provide beautification of the public space on the street. **Overleaf:** A Street Champion communicates with his/her neighbours over the tidying of bins after waste collection; Neighbours work together to create street planters.

Hello neighbours!

Let's work together to make our road an even better place.

Putting our bins in after they've been emptied would make the street look nicer, and easier to walk down too!

If we could all make an effort to do this over the coming weeks it would really make a difference to the way our street looks.

This is hopefully just the start of us working together (and getting to know each other too!) to make our road a nicer place to live.

If you'd like to take part or have any comments/ideas/suggestions join us on Facebook and let us know what you think.

<https://www.facebook.com/groups>

Or search for on
Facebook



Appendix B: Control Group Street Champion Letter

Do you want to be a Street Champion?

A message from Councillor Jennifer Brathwaite
Cabinet Member for Environment and Sustainability



July 2014

Dear Resident,

Does your street suffer from litter, dumped waste or dog fouling? Would you be willing to work with the council to put a stop to it?

We know from speaking to residents all over Lambeth that living in a clean street that encourages a sense of belonging and pride is important to lots of people. Lambeth is committed to maintaining clean streets and we want to work with you to raise the standard of cleansing and ensure you can be proud of where you live.

Research has provided much evidence that community-led solutions are often more effective than traditional methods. By becoming a **Street Champion** you can have a direct impact on these issues by working with your neighbours and the council to find the best solutions for your street. We're looking for people who care about their area and are keen to take action and get things done to improve the environment for everyone.

We've got the expertise but you've got the local knowledge, so we'll offer advice and you'll choose what you want to do and how you do it. If you've never done this sort of thing before, that's fine; you'll have the full support of a council officer who'll provide you with lots of help, information, training and equipment to get you started. If you don't have much time to spare, that's fine too; it will only take a small amount of time to make a real difference.

Getting involved in your community can bring real benefits. Valcie, one of our Do the Right Thing campaign poster stars, said 'When I organised a Community Freshview, the council helped us to build planters at the end of the road. There's so much we can all do to make a difference.'

If you'd like to sign up or find out more, please email streetchampions@lambeth.gov.uk or call us on 020 7926 3069 and a skilled officer will be able to discuss the programme in more detail. We look forward to hearing from you.

Best wishes,

Councillor Jennifer Brathwaite,
Cabinet Member for Environment and Sustainability

P.S. We'll be visiting your street within the next couple of weeks to talk about this. Please get in touch to find out when, so you don't miss us.

Lambeth