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Abstract

Public services that are tax funded, public goods are sometimes marketised by being delivered using private companies instead of public organisations. Additionally, marketisation reforms can entail service users being described as customers for the service rather than as citizens. We assess the effects of these aspects of marketisation reforms on users' willingness to coproduce public services. First, service delivery using private companies risks reducing users' willingness to coproduce because firms cannot commit ex-ante to not appropriate donated labour for private gain. Second, using customer-oriented language risks reductions by priming individualistic market-norms that lower prosocial motivation compared to citizen-oriented language priming citizenship duty. Using three survey experiments in the United States we find that delivery structures are not neutral. Private firms delivering local public services reduce users' willingness to coproduce, although similar effects are not evident from priming customer rather than citizenship thinking.

Keywords: Marketisation, Contracting, Public Service Delivery, Citizenship, Customers

Introduction

In recent years, there has been increasing marketisation of public service delivery even when services remain funded from taxation. Two elements of marketisation reforms have been particularly evident. First, the use of private, for-profit organisations as contractors for service delivery rather than local governments providing the service directly (Greve 2008; Osborne and Gaebler 1992; Pollitt and Bouckaert 2011). Second, the recasting of public service users as 'customers' of the organisations delivering the service rather than an emphasis on their role as local citizens (Box et al. 2001; Clarke et al. 2007; Thomas 2013).

Despite considerable interest in the potential effects of marketisation in reshaping how service users interact with those delivering services (Box et al. 2001; Clarke et al. 2007; Sandel 2013), there has been relatively little work assessing these effects empirically. We examine the effects of these two aspects of marketisation reforms on service users' willingness to coproduce. Coproduction is an important aspect of much local public service delivery, consisting of local people contributing knowledge, or undertaking effort, to help bring about services in a cooperative way as part of the service delivery process (Sharp 1980; Brudney and England 1983; Ostrom 1996; Bovaird 2007; Brandsen and Honingh 2016; van Eijk 2017; Brandsen, Steen and Verschuere 2018). Coproduction is synergistic between producers and users. Benefits from coproduction are often argued by proponents to include more and better services and, in this way, coproduction augments the capacity of local communities for public action (Bovaird 2007; Brandsen and Honingh 2016; Brandsen, Verschuere and Steen 2018).

Service users' willingness to volunteer time to coproduce is important in order to bring about coproduction of local public services, and marketisation of service delivery potentially affects this willingness. First, if the service delivering organisation is a private, for-profit firm this may

reduce willingness to volunteer time compared to a public, not for profit organisation. This expectation comes from evidence that employees of private, for-profit, companies are less willing to contribute unpaid overtime than those in not for profits because they fear that the organisation will appropriate their efforts and reduce its own contribution in order to boost profits (Francois 2000; Gregg et al. 2011). In addition, research has found higher pro-social attitudes and motivation by those working in public organisations to produce services in the public interest (Perry and Wise 1990; Perry 1996). On this basis, service users would expect those working in public organisations to work more effectively with them to improve services compared to private organisations because they share a mutual interest in the service provision, increasing users' willingness to volunteer time to coproduce.

Second, describing service users as customers in delivery invoking the language of market-type service provision has its own effects. Describing users as customers contrasts with users being labelled as citizens with the associated language of rights and duties connected to being members of a political community¹. Citizenship, especially republican and related concepts of active citizenship, require a duty of pro-social community-oriented action by citizens (Dalton 2006). Citizenship norms boost willingness to volunteer time to coproduce in contrast to a customer orientation that brings to users' minds market contexts and individual choice (Jilke 2015). In this way 'market metaphors' have the potential to weaken the civic engagement obligations of citizens (Fountain 2001; Sandel 2012; Falk and Szech 2013). Taken together, priming the context of service delivery to users by activating concepts of being a customer

¹ We acknowledge that alternative conceptions of 'citizen' involve being a legally recognized citizen of a state, and thereby excluding alien residents. Here, we use the term in the most encompassing manner, including all residents of a particular place.

rather than being a citizen is expected to reduce users' willingness to volunteer their time to coproduce.

The first section of this paper sets out the theory and empirical implications of the two aspects of marketisation (private as opposed to public ownership, and customer as opposed to citizen orientation) on service users' willingness to volunteer time to coproduce local public services. The second section describes three survey experiments to assess the empirical implications by estimating effects on willingness to coproduce from experimental manipulations of public/private delivery scenarios and priming citizen/customer differences. The third section reports the findings that the scenario of private providers undermines users' willingness to coproduce and the amount of time they would volunteer (compared public providers). Additionally, we find partial support for this finding in a behavioural measure of cooperation with an initiative facilitating coproduction. However, there is no evidence that priming to invoke customer rather than citizen-based thinking reduces people's willingness to coproduce. We then discuss how the effect sizes compare to other studies of coproduction, the generalizability of the results and limitations of the studies. The final section draws conclusions and develops implications for marketisation reforms and volunteering to coproduce local public services. We then set out an agenda for future research about the unintended consequences of marketising public service delivery.

Users volunteering their time to coproduce public services

We focus on the effects of two aspects of marketised delivery on users' willingness to volunteer time to coproduce local public services. Coproduction is important for the many

public services that require or otherwise benefit from mixing the contributory efforts of service providers and their users (Parks et al. 1981; Ostrom 1996; Alford, 2002; 2009; Jakobsen, 2013). Alford (2009: 2-4) notes that “[...] a lot of public sector activity (and for that matter, of private sector activity as well) entails client co-production.” He quotes Fuchs’ (1968) observation that the customer is an important co-operating agent in the production process and highlights his description of the customer as a ‘coproducer’ for some services in markets. Most work on coproduction to date, consistent with Alford’s (2009) book, have sought to examine the benefits that public sector organisations generate through coproduction, and/or have looked at what organisations have to do in order to encourage coproduction. We focus on user’ willingness to contribute their time to joint production of public services and situate our study in the mainstream of coproduction as reviewed and systematised by Brandsen and Honingh (2016). In this way, coproduction is a relationship between service users and employees of the service delivery organisation who work with them on the output, implementation, side of the policy cycle to produce the service.

, We focus on users’ contribution to the coproduction process in their willingness to donate their own time. Coproduction can involve several inputs including knowledge and cooperation, but volunteering time is an important aspect. We examine time users would volunteer to help implement core aspects of the service, rather than consultation in the development or design of the service. (This is a form of coproduction discussed by Brandsen and Honingh (2016: 431-2) where the inputs from users are important to enhance the quantities or quality of the service, but in principle some form of the service could be provided without their input. In this sense, the user’s contribution of time is a form of voluntary contribution to service delivery.

The local public services we examine for coproduction are publicly funded through taxes which is typical of many core services in local jurisdictions (Goodin 2003). The benefits from coproduction are enjoyed by a collective group of citizens which may not necessarily have to contribute themselves in order to enjoy them. This is the classic non-rival, non-excludable public good of economic theory (Samuelson 1954). Such goods contrast with coproduction of individual private goods where the benefits are rival and excludable. For example, doing physical exercise may be recommended by a doctor to someone in order to improve their health and, in cases of this kind, there is an incentive for the patient to respond because the coproduction directly benefits the person performing the action (Bovaird et al. 2015).

The role of marketisation reforms

Consistent with insights from psychology and behavioural approaches to public administration, we conceive willingness to contribute time as underpinned by motivation as a psychological process that directs, energizes, and sustains action and as an inner desire to make an effort (Dowling and Sayles 1978; Latham and Pinder 2005; Grimmelikhuisen et al. 2017). We focus on the effects of two elements of marketisation on individual service users' willingness to coproduce.

First, we examine the effects of whether users interact with a public or a private organisation delivering a public service. There has been a substantial rise in the use of private forms of delivery structure in many countries and service areas as part of the New Public Management in recent years (Hood 1991; Osborne and Gaebler 1992; Denhardt and Denhardt 2000). Publicness is often contrasted with privateness on multiple dimensions, notably those of

public ownership, public funding and/or public regulation of an activity (Bozeman 1987). However, the contrast between a publicly owned and a private, especially for-profit, organisation is a particularly salient form of difference in publicness affecting motivation to coproduce.

The literature on pro-social motivation of people working in organisations suggests public or private organisational ownership status would be likely to affect citizens' expectations about their involvement in coproduction. Weisbrod (1988) refers to the legal "nondistribution constraint" of not-for-profit organisations. Indeed, for-profit bodies typically distribute profits to defined groups including shareholders of listed-stock companies and other private owners including private equity funds (Francois 2000; Folkman 2009; Gregg et al. 2011). This contrasts with public organisations that cannot legally redistribute profits in this way, but instead keep them within the public realm with the expectation that they ought to use them to improve public goods. These differences create organisational incentive structures that lead private sector companies' employees to substitute public service standards with a for-profit logic and commercial service standards (Jilke, Van Dooren and Rys 2018). In this way, for-profit organisations have been argued to undermine mission-oriented, pro-social, behavior because these organisations cannot commit ex-ante not to appropriate donated labor (Francois 2000). Research on pro-social motivation in hospitals provides evidence in support of this view, showing that private sector ownership is associated with lower employee pro-social outcomes (Gregg et al. 2011). For this service area, 46% of those in the non-profit sector were doing unpaid overtime compared to 29% for-profit caring. In addition, individuals in non-profit caring supplied an average 1.25 more unpaid overtime hours per week compared to for-profit caring (Gregg et al. 2011, p.760). An analogous effect is that users' volunteering of

time for coproduction in public services is undermined because they, for the same reasons as employees, will be concerned that for-profit providers will appropriate their donations.

Public delivery organisations further encourage coproduction relative to privately owned organisations because of the public service motivation of the employees with whom service users would coproduce. Studies have found high pro-social attitudes and motivation to produce services in the public interest by those working in public organisations (Perry and Wise 1990; Perry 1996). Public organisations operate with a public mission and in an environment that encourages the socialisation of employees working in these organisations to develop this form of public service motivation (Kjeldsen and Jacobsen 2012; Moynihan and Pandey 2007). These findings suggest that users interacting with public organisations will have stronger reasons to think that their coproduction efforts will be matched by the efforts of public employees than if those users were to interact with employees of private, for-profit organisations, raising their willingness to contribute time to coproduce.

The difference between public and private service delivery structures is a potentially important addition to the list of other institutions that have been found to affect coproduction. For example, broader research has compared parental involvement in charter schools and that of public schools in the US and found that there are different outcomes (Bifulco and Ladd 2006). Rosentraub and Sharp (1981) have noted the role of information and incentives such as monetary rewards in facilitating coproduction. Several studies have examined the effects of different coproduction initiatives by public organisations (e.g., Ostrom 1996; Alford 2009; 2014; Thomas 2013; Jakobsen 2013; Voorberg et al. 2018). However, the effects of public compared to private ownership have not previously been addressed. This leads us to set out our first hypothesis: **There is a lower willingness to**

volunteer time to coproduce under a private company relative to public ownership of the delivery organisation.

A second important aspect of marketisation of public service delivery is the shift of how service users are treated by those delivering the service (Clarke et al. 2007). New Public Management reforms have emphasized organisations delivering public services treating their users as ‘customers’. The use of this language emphasises interaction understood as based on self-interest and involving transactions similar to those occurring in the marketplace (Denhardt and Denhardt 2000; 2015; Rys 2018). Customer focused provision has the aim of satisfying individual preferences and facilitating user choice, a fundamentally different conception to republican and active citizenship (Thomas 2013; Jilke 2015, p. 155; Rys 2018).

Concepts of citizenship allocate rights and duties to citizens to pay taxes to fund public activities and to undertake pro-social behaviour including a concern with societal welfare. For example, there is a strong and explicit value placed on the role of the citizen in American democratic thought that places an emphasis on active participation (Denhardt and Denhardt 2015). Citizen responsibilities under the welfare state include, for example, the responsibility to be available for work (Rothstein 1998). Relatedly, it is increasingly recognized that obeying the law is highly dependent on citizenship in the form of the legitimacy of the laws as reflected in citizens’ observations about procedural justice as it operates in the practice of the police and others who are tasked with implementing it (Tyler 2006). In addition, prosocial behaviour such as volunteering is influenced by whether people are ascribed an identity whose traits correspond with that prosocial behaviour (Rogers, Goldstein and Fox 2018, p. 371; Tybout and Yalch 1980). However, despite the potential importance of citizens’ social identities and

their corresponding rights and duties for their attitudes and behaviour the issue has so far received relatively little attention in the literature on coproduction.

Citizens' pro-social motivation is one way of getting people to recognize coproduction duties across a range of local services, as well as their rights to receive such services. Willingness to contribute to coproduction is potentially reduced when relationships between service recipients and service providers are defined in terms of a customer model with a market logic of individual self-interest and individual utility maximization. Falk and Szech (2013) show that people are more likely to act against their own moral standards of public duty when they engage in market interactions. Similarly, Sandel (2012) argues that market norms can crowd out pro-social, non-market, norms, creating a need to limit the scope of markets. This evidence highlights the potentially corrosive effects of market- and customer-based models on people's pro-social efforts. Consequently, we expect that service users being made aware of this market-dominant logic through priming using the language of being a customer (versus being a citizen) would be less inclined to volunteer their time to coproduce public services. The primes do not seek to change identity, which is a difficult thing to do, but instead bring to mind and activate particular concepts that affect thinking and behaviour (Higgins, 1996; Kay and Ross 2003). In this way, people primed through a series of prompts or tasks to think as a customer will tend to be less willing to coproduce local public services than those primed to think as a citizen. This leads to our second hypothesis: **There is a lower willingness to volunteer time to coproduce under customer relative to citizen primed thinking.**

Experiments about effects on willingness to coproduce

We evaluate the empirical expectations through a series of three survey experiments. In all the experiments, participants were presented with realistic scenarios about the delivery of local public services. We focused on coproduction responses to there being a failure of the service in the sense of the performance of the service clearly requiring improvement. Such situations are important for public services and are commonly occurring. Research has found that people have stronger reactions to negative events in public services, triggering a search to make sense and try to respond to them (DeHoog, Lowry, Lyons, 1992; James et al. 2015; Van de Walle 2017). In this context they are more likely than at other times to pay attention to details of delivery structures, such as the ownership arrangements we describe. Services requiring improvement also make the need for coproduction of the local public good salient such that people would consider coming forward as coproducers.

Experiment 1

The first experiment presented participants with three scenarios about different local public goods, followed by questions about their willingness to contribute time to coproduce. The scenarios encompass a set of local services typically provided by a municipality: 1) a local park and picnic area, 2) local security and 3) local street cleanliness. The services were presented in random order to control for order effects. Each scenario provided details of the service's performance coupled with the treatments set out below, including an appeal to improve the situation by volunteering their own time to coproduce. Drawing on measures used in laboratory experiments about real-time donations by participants in a lab-based task (Linardi and McConnell 2011) we used a metric of willingness to volunteer time to make the measure meaningful to participants.

Participants

We conducted the experiment online, using a set of US participants recruited via Amazon's Mechanical Turk (AMT). We gathered a set of variables for the sample to check against the broader US population. After excluding those who did not finish the survey, we were left with 528 respondents in total. To make sure that participants did not engage in survey satisficing, rushing through the questionnaire without paying attention, we added an instructional manipulation check (IMC). IMCs reliably screen-out satisficers, thereby increasing statistical power (Oppenheimer, Meyvis and Davidenko 2009), and increase respondents' attention (Hauser and Schwartz 2015). A total of 7 respondents (21 scenario-observations) failed the test and were excluded from the analysis (our results are robust to including those additional respondents). In addition, four respondents did not provide information on our dependent variable. We were left with a total 517 respondents and 1,550 scenario-observations in the models reported here (for one respondent we have only responses to two of the scenarios).

Material and Procedure

We implemented a 2-by-3 factorial design. As a first treatment, the organisation delivering the service was presented as either a public municipality delivering the service itself or as a private, for-profit company (contracted through a municipality). This information served as an information cue about the type of organisation people coproduce with. Cues are summary shortcuts that help people economize on information and interpret what is appropriate or the best form of action in a particular situation. Such cues have been found influential in similar contexts, for example summary information about the performance of local services influence citizens' evaluations of the public bodies providing those services and cues affect blame of politicians following service failure (James 2011a; James et al. 2016; Jilke et al. 2017;

Marvel and Girth 2016; Piatak et al. 2017). The cues of a public organisation contrasting with a private company convey different concepts of the publicness of service delivery to citizens.

As a second treatment, we engaged the participants in a priming task to bring to the fore either citizen or customer-based thinking. This task was implemented before and separate from the scenarios. Priming consists of manipulations that subtly activate and increase the cognitive accessibility of some particular concept (for a review, see Higgins, 1996). We used a priming method adapted from Kay and Ross (2013) to establish contexts that subsequently affected cooperation in playing prisoners dilemma games. This task was presented to participants as unrelated to the scenario descriptions that followed in a separate section of the survey.

The priming tasks operate by bringing to mind the concepts of customer or citizen and, in turn, particular norms affecting thinking in a situation (in our case being asked to coproduce). Priming does not seek to change people's identities but instead makes salient particular concepts from a broader set that they have in mind. The method of priming by presenting participants with short jumbled word sequences and the task of re-ordering them to make them coherent, if not grammatically fully correct, sentences is a well-established technique in psychological research. The same technique was used in a previous study to affect experimental participants' construal of a situation of playing an experimental game (Kay and Ross 2003). Our priming task involved participants being randomly allocated to reordering a set of seven lists of four words to make sense of them, with the set invoking either 1) citizen-based thinking or 2) customer-based thinking, with 3) a neutral control condition that did not include such a task. In our experiment, the citizen-based set of seven lists included reordering a list of the words like "undertake people their duties", interpretable as "people undertake

their duties”. In contrast, the customer based set of seven lists included reordering the words like “decide consumers themselves for” as “consumers decide for themselves”. The priming effect consists of the activation of customer-based thinking decreasing willingness to coproduce than the citizen-based thinking which brings to mind more pro-social norms of behaviour.

Randomization into one of the six experimental conditions was independently determined for each of the three scenarios (i.e., a local park and picnic area, local security and local street cleanliness). A full description of the used materials for each of the three services can be found in the online appendix. However, we include the full scenario as follows for the example of a local park and picnic area:

Imagine you are a resident of Middletown, a normal municipality in the United States. In the past few months, the local park and picnic area has got into a poor state of repair with broken benches and damaged facilities.

To investigate who is responsible for maintaining the park and picnic area you visit the website of the municipality (to whom you pay local taxes to provide the patrols).

It says that [*Middletown Department of Recreation, part of local government/ Middletown Recreation Company, a private firm*] is paid to deliver these services.

We measured the outcome of willingness to coproduce for each scenario by asking: “*How much time would you donate to assist [Middletown Department of Recreation/ Middletown Recreation Company] within the next month as a one off initiative to improve the situation by helping them to fix the space?*” Respondents were provided a slider scale ranging from 0 hours to 100. Our first outcome of interest is whether users stated they would coproduce at all (or not), by dichotomizing the measure (i.e., 0 hours versus 1-100 hours). Our second outcome of interest makes use of the full scale of the response to the question to examine the amount (within the provided time scale) participants would be willing to coproduce.

Results

We pool scenario-observations for each of the three scenarios respondents were exposed to, in order to estimate the average treatment effect of our experimental manipulations on people's willingness to contribute time. This means that we have a nested data structure with scenario-observations (individuals completed multiple scenarios) nested in respondents. Therefore, our estimation strategy involves clustering respondents' standard errors because scenario-observations are not independent of each other.²

We assessed effects on whether respondents would be willing to contribute any time versus not contributing time at all. To do this we dichotomized the measure of time contribution so that it displays "1" for any time contribution, and zero otherwise (first measure). Second, we examined how much time they would be willing to give (second measure).

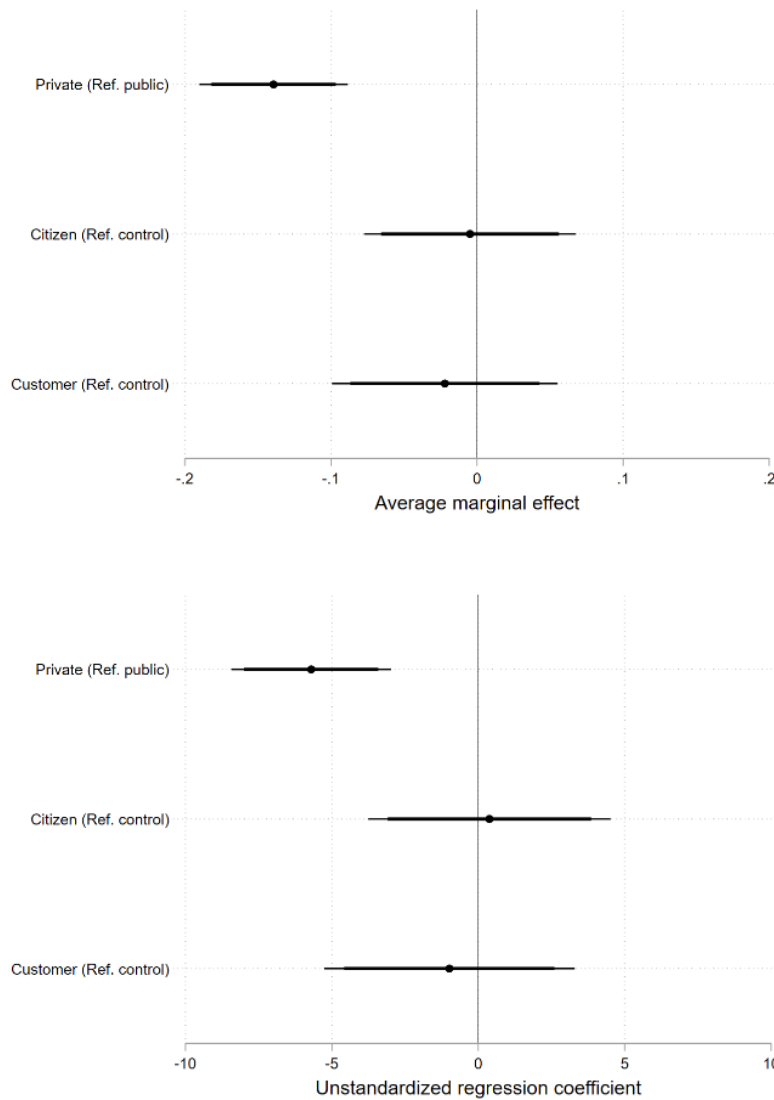
We estimated a logistic regression model for our primary outcome and a Tobit regression model for our secondary measure to account for its censored nature (29% zeros and an upper boundary of 100 hours). Results are graphically represented in Figure 1, with full results being available in the Appendix (table A1). The top and bottom panels (first and second outcome, respectively) of Figure 1 include dot plots which represent parameter estimates (i.e., average marginal effects for the top and unstandardized regression coefficients for the bottom panel) and their respective 95% confidence intervals, with the thick inner lines representing 90% confidence intervals.

² Analysing each scenario separately, our results are consistent: The average treatment effect of private vs public provision is 19 percentage points for scenario 1 (street cleaning), 10 percentage points for scenario 2 (local security), and 13 percentage points for scenario 3 (local park). All ATEs are statically significant at <0.05, and all coefficients are statistically indistinguishable from each other.

We find that the information cue about private provision has a substantively meaningful and statistically significant effect. Model 1 shows that private ownership, compared to public, reduces willingness to engage in coproduction. Respondents were about 14 percentage points less likely to coproduce with a private, for-profit, service provider compared to a public service provider. The citizen versus customer prime, however, did not have an effect on the probability of whether somebody would give their time, and no significant interaction effect between both treatments could be detected.

The findings for Model 2 (using the second measure of number of hours volunteered) show that providing respondents with a cue about private provision of services decreases the amount of time they would volunteer to coproduce. The effect is not only statistically significant but also non-trivial in size, accounting for a loss of about 5.7 hours on average. This means that respondents stated that they would coproduce for notably less time with a private for-profit provider compared to a public organisation. If we look at the citizen/customer primes, however, we conclude that they did not alter respondents' willingness to give time in a substantively important way. While the direction of the effects is as anticipated (with citizen primed participants being more likely to donate time compared to the customer prime), the effects do not meet conventional thresholds of statistical significance. In this model, no interaction effect between the experimental factors could be detected. We can, therefore, conclude that the publicness of the service provider, but not the service user priming, matters for users' willingness to coproduce.

Figure 1: Results from Experiment 1 (95% confidence intervals)



Note: The top panel displays results from a logistic regression model (first DV; no coproduction versus coproduction) and the bottom panel comes from a tobit regression model (second DV; 0 to 100 hours coproduction). The thick inner lines of the confidence intervals represent 90% confidence intervals.

Experiment 2

Experiment 1 provided evidence in support of the expectation that private service delivery undermines people’s willingness to coproduce to help remedy a problem with local public services. However, we found no support for a citizen/customer priming effect on

coproduction. This may be because of several reasons but two are particularly important. On the one side, it may be that our theoretical predictions were not supported empirically, and encouraging citizens to think like citizens/customers does not affect their willingness to coproduce. On the other side, it could also be that features of the way we undertook the priming treatment made it ineffective in activating citizen/customer type thinking. To reduce the risk of the latter, we replicated experiment 1 (using the dirty streets scenario) but with an alternative form of priming to assess if the particular way of priming was the reason behind the null result in Experiment 1.

Experiment 2 was further conceived of as a way to increase the external validity of findings to broader populations by using a general population sample (in contrast to Experiment 1 which used participants recruited via Amazon's Mechanical Turk). We therefore used a general population panel for Experiment 2 which allows the empirical expectations to be assessed on a more diverse sample.

Participants, Materials and Procedures

In Experiment 2 we used Qualtrics' general population panel to recruit a total of 1,043 US respondents, who all completed the study's tasks. We implemented a 2-by-2 factorial, between subjects design. The first part of the experiment manipulated the ownership cues (public vs. private provision) of the same scenario about street cleaning. The same wording as in Experiment 1 was used. However, unlike Experiment 1, the second experimental manipulation used a reflexive recall priming technique to activate people's citizen or customer modes of thinking. We included several elements for each of the customer or citizen primes. Respondents were randomly assigned into one of these two experimental conditions. Unlike in Experiment 1, we did not use a neutral control category this time in order to focus

on the explicit contrast between a customer versus citizen mode of thinking which had the benefit of being able to detect smaller effects through a modest increase in statistical power.

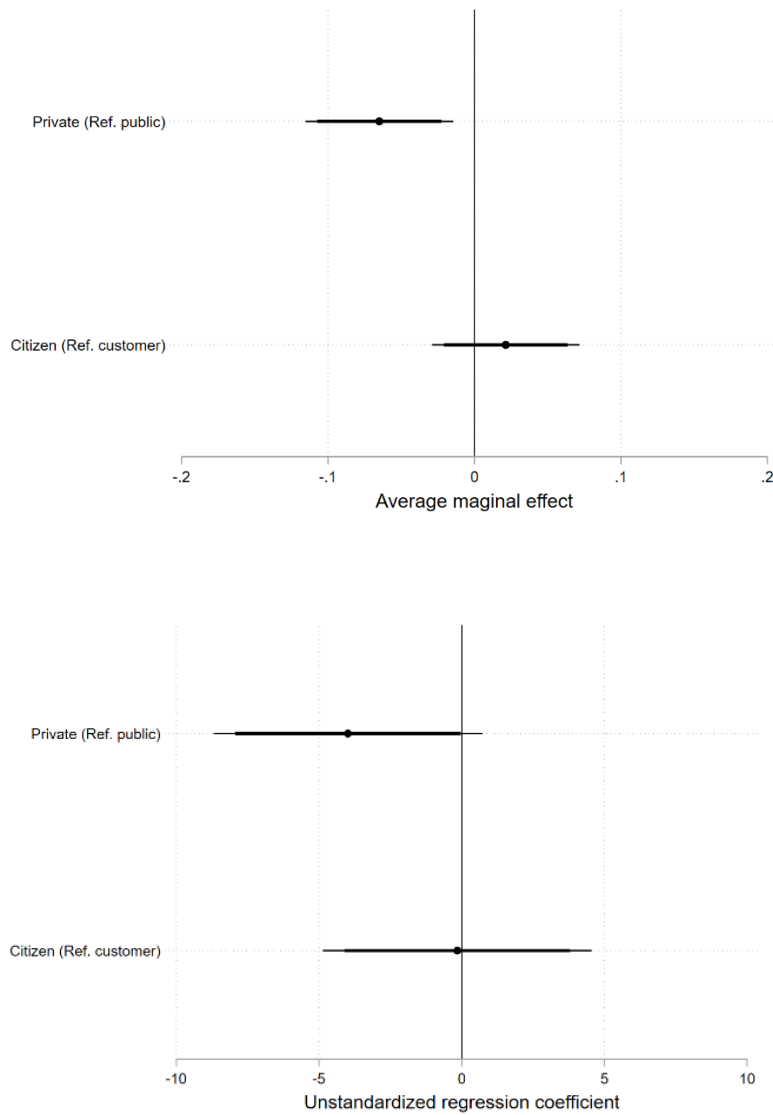
In either of the priming conditions respondents had first to rate their baseline conceptions of what it means to be a citizen or customer. Three attributes representing citizenship/customer behaviour respectively were presented to them, and respondents had to indicate how important they find each of the attributes for either being a citizen or customer (using a 7 point scale ranging from “not at all important” to “Extremely important”). The attributes for the customer prime were: Customers choose between different options (1); Customers negotiate with suppliers (2); Customers pay for the products they buy (3). The attributes for the citizen prime were: Citizens vote (1); Citizens support their community (2); Citizens serve their country (3). These attributes tap into latent conceptions of being a customer, or being a citizen.

After assessing respondents’ baseline conceptions, which aimed to make salient in respondents’ mind the concept we aimed to prime, the actual priming took place. Here subjects were asked to recall the last time they themselves acted as a citizen, or customer depending on experimental condition, for at least two of the three listed attributes from the baseline assessment. They had to provide a short, written description of their memory. This method of priming seeks to draw out previous experience in order to activate particular concepts from memory (Higgins 1996). This task is different from the word order task used in Experiment 1 in that it capitalizes on individual’s own personal experiences to activate modes of citizen versus customer type thinking. The priming task and the actual scenario were, like in Experiment 1, clearly separated from each other and the presentation suggested them to be unconnected tasks.

Results

The results are presented in Figure 2. Model 1 (i.e., top panel of Figure 2) reports respondents' willingness to coproduce, while model 2 (i.e., bottom panel of Figure 2) examines the amount they would be willing to coproduce – full regression tables are in the Appendix (table A2). Respondents in the private ownership condition were about 7 percentage points less willing to coproduce than those in the public condition. This decreased the percentage of respondents reporting their willingness to coproduce from 81 per cent to 74 per cent. In the second manipulation, being primed to think in a citizen/ customer mode, these factors did not alter respondents' willingness to coproduce. Interacting both experimental factors did not produce a statistically significant effect. When examining our second outcome, time contributions, the private ownership cue reduced hours volunteered by 3.99 (statistically significant at the 10% level) and the citizenship/customer primes did not have significant effects on the time people are willing to coproduce.

Figure 2: Results from Experiment 2 (95% confidence intervals)



Note: The top panel display results from a logistic regression model (first DV; no coproduction versus coproduction) and the bottom panel comes from a tobit regression model (second DV; 0 to 100 hours coproduction). The thick inner lines of the confidence intervals represent 90% confidence intervals.

Experiment 3

Having found support for the first hypothesis about public versus private delivery but not the second hypothesis about citizen/consumer differences, we undertook a third experiment to

see if the first finding extends to an indicative behavioural measure of coproduction. To do this, we replicated the street cleaning scenario from experiments 1 and 2, and the public/private service delivery information cue manipulation. However, as an extension, we incorporate a measure that, whilst not actual coproduction, is a behavioural outcome, to assess if findings about stated preferences (i.e., people's willingness to coproduce) also apply in findings about revealed preferences (where they take an action). We used the outcome variable of asking respondents to provide an email address that could be used to contact them about potentially becoming involved in actual tasks of coproduction in their local area. This is an action with potential consequences for the participants although we caution that, whilst indicative, the measure should not be equated with actual coproduction behaviour.

The experiment further extended the findings in seeking to separate out the effect of publicness from private-ness by including a neutral control group. In the control group the ownership cue was omitted enabling us not only to compare public and private cues but also to compare those cues with this absence of cue benchmark.

Participants, Materials and Procedures

We used Qualtrics' general population panel (as for experiment 2) to recruit a new, separate, sample of 1,051 US respondents. As in the prior Qualtrics experiment, all respondents were included in the analysis, and none of the participants were identified as satisficing as revealed by our instructional manipulation check. We used the same scenario and measures as utilized in experiment 2 that focused on coproduction to ameliorate the condition of dirty streets.

The behavioral outcome measure was measured through the following question: "*Would you allow us to forward your email to your local street cleaning service*

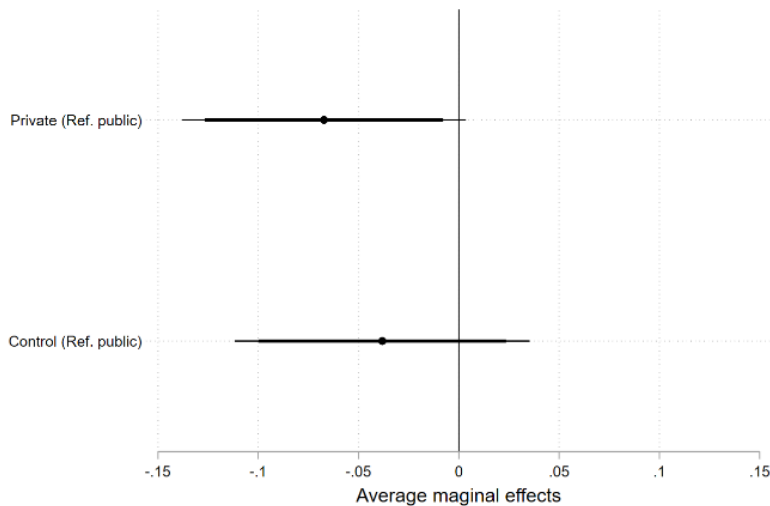
[provider/department/company], so that they can contact you in case they are in need of any help?" Depending on experimental condition, respondents were prompted to agree leaving their contact email for their local service provider (i.e., neutral control group), department (i.e., public cue), or private company (i.e., private cue). In this way, agreeing to provide the email to facilitate coproduction is a measure of action by participants to facilitate coproduction.

Results

The effects of the ownership cues on respondents' intended coproducing behaviour was assessed using a logistic regression model and the results are reported in Figure 3 (with full results in the Appendix in Table A3). We estimated the model with the respective information cue conditions as independent variables – the public provision information cue was used as reference category. We find that, consistent with our prior experiments about willingness to coproduce, being exposed to a private sector cue (relative to the public sector cue) decreases the probability that respondents would be willing to provide their email addresses to local service providers by about 6.7 percentage points. This corresponds to a decrease in respondents' predicted probability to providing their email from 43.3 percent in the public delivery condition to 36.6 per cent in the private delivery condition. We note the p-value of 0.063 for this difference between groups is statistically significant at the 10 per cent level. Comparing the neutral control condition to both ownership cues, we find that the publicness effect (3.8%) is slightly stronger than the private-ness effect (-2.9%). These differences are reflected in the control group condition probability of providing their email address being between the two other groups (at 39.50 percent). However, by themselves, each of the

differences between the control condition and the publicness and private-ness conditions are statistically indistinguishable.

Figure 3: Results from Experiment 3 (95% confidence intervals)



Note: The thick inner lines of the confidence intervals represent 90% confidence intervals.

Discussion

Before setting out the implications of this study's findings, we discuss some features of the results. First, we note the high levels of respondents' willingness to coproduce overall. Indeed, in experiments 1 and 2 the overall levels of willingness were above 70% (70.1% in experiments 1 and 77.7% in experiment 2). It is possible that a number of respondents over reported their willingness in light of this being a socially desirable topic with contributing generally being seen as a good thing to do. However, there is no reason to believe that respondents' socially desirable reporting is in any way systematically different across experimental conditions.

Thus, while we experience some high baseline levels of willingness to coproduce, they do not affect the identification of our experimental manipulations. Second, the effect sizes range from 7 to 14 percentage points change in willingness to coproduce (experiments 2 and 1 respectively). Substantively this would mean that, if we extrapolate these results to a local community of about 10,000 inhabitants, it would mean between an additional 700 to 1,400 people expressing willingness to coproduce. The findings of the third experiment provide some partial support that the findings extend to a behavioural measure. This suggests that the increase of 6.7 percentage points translates to, in a community of 10,000 inhabitants, an extra 670 people who would provide their email to help facilitate coproduction initiatives. These effect sizes are similar to those in a study by Jakobsen (2013) who found an overall treatment effect of 8.8 percentage points on a knowledge outcome from providing resources to facilitate coproduction in an education initiative. Of course, this simplified extrapolation operates under the *ceteris paribus* assumption of all other important factors being equal to the experimental conditions in such a scenario. Hence, we would argue that future research should tease-out the boundary conditions of when the effects of institutional service delivery arrangement are most and least effective in increasing people's willingness to coproduce.

We have established an ownership effect on willingness to coproduce. As with any research design, there are limitations which have implications for the broader relevance of our findings beyond the confines of the study. The generalizability of findings beyond the specific context is something that needs to be evaluated in future empirical research. However, because we study not just one but a range of three different local public services that are widely found in different jurisdiction it is reasonable to assume that our findings are of broader relevance. Indeed, there are a numerous local services with similar public good characteristics including

other local environmental services, community activities (such as local public entertainment events), or public library services where the findings should apply.

Following standard survey experimental methods, we experimentally manipulated a set of factors to estimate causal effects. It would be also be a useful extension of the findings to examine actual choices in situations of real coproduction, and to compare and contrast volunteering to coproduce in local contexts where both public and private organisations operate. One aspect of realism refers to whether relevant subjects are included; on this dimension, our study exhibits realism because we use samples of citizens from the general US population (as opposed, for example, to generalising from student participants who differ on a range of educational and socio-demographic variables). Still, naturalistic field experiments would be a useful research design to generate other aspects of realism. Here, our findings provide initial evidence for the expectation that service ownership affects coproduction and thus lay a credible fundament for designing field experimental trials on this basis (but see also the below discussion of the ethics and feasibility of field experiments in this space).

The scenarios in our study are hypothetical because they focus on willingness to contribute. Whilst this motivation is important for actual coproduction activity the findings could be extended by studies of actual coproduction behaviour, as noted above. The current study already includes a step in this direction by including a behavioural measure revealing that people were more willing to cooperate under a public compared to a private delivery organisation. Whilst they have advantages, using a field experiment to address the research questions of this study may raise some difficulties in research design. Adopting a field experiment would have required to mis-describe actual organisations as public or private to generate the necessary treatment variation. Additionally, there would potentially be ethical

problems in introducing a private sector description and consumer priming in a field context when these treatments are expected to reduce actual volunteering, potentially harming service outcomes.

Conclusion

The experiments reported here show that public service delivery structures are not neutral technology but instead affect fundamental aspects of users' interaction with service delivery organisations. The findings show that willingness to coproduce tax funded local public services with collective benefits are affected by whether a public or private sector organisation delivers the service. Both the experiments that focused on participants' willingness to coproduce found that private firm delivery decreased the probability of volunteering to coproduce, and reduced the amount of time participants were willing to contribute (compared to a public organisation delivering the service). The third experiment provides some support for extending the findings to a behavioural measure showing reduced cooperation in taking action to facilitate local coproduction when working with a private, for-profit, company compared to a public delivery organisation.

The findings are important because much research on contracting of services to private companies has focused narrowly on comparing the costs of service or limited aspects of economic efficiency under public versus private delivery (Petersen et al. 2018). Our findings show that private delivery companies may reduce the capacity for public action through lost coproduction opportunities. Public organisations may also benefit from drawing citizens' attention to their public ownership status when soliciting users to become engaged in

coproduction activities. This means that increasing coproduction is useful for policy because it is an action that can be taken by public bodies, in contrast to the demographic or socio-economic factors often noted as affecting volunteering in general that are more difficult for them to influence (Reed and Selbee 2000; Parrado et al. 2013). Such an informational strategy to publicise their public ownership, for example in promotional or explanatory materials that are routinely produce for interacting with service users, is a low-cost way for public organisations to implement in order to boost coproduction.

In a wider sense, the findings have important implications for normative debates about the unintended consequences of market-based public sector reforms (Box et al. 2001; Christensen and Laegreid 2002; see also Gottfried 2001). Our study suggests that privatisation and contracting government provided services out to private, for-profit providers has negative effects on citizens' willingness to contribute to public goods. This crowding-out is consistent with citizens-as-service-users perceiving for-profit delivery organisations as capitalizing on their pro-social contributions. It is also consistent with public organisations being seen, in contrast, as using donated labour for the public good. The findings provide empirical support for benefits of public organisations developing relationships with service users as an alternative to the 'New Public Management' approach of using private firms for the delivery of services (Denhardt and Denhardt 2000; 2015).

In contrast to the evidence about public versus private service delivery organisations, the experiments did not find an effect of citizen versus customer priming. This finding could point towards a lack of support for the differences in contextual use of language or might, despite using recognised methods for priming from the psychology literature, reflect some of the limits of being able straightforwardly to prime on this issue. The role of citizenship attitudes

and behaviour as an influence on coproduction more generally should be further addressed by techniques that do not rely on priming.

Future studies could look at the dynamic aspects of willingness to volunteer time to assess how repeated requests to volunteer time would be received, perhaps varying whether the service improved following initial coproduction volunteering. The mechanism at work in citizens being less likely to contribute when services are provided by private, for-profit organisations are also worthy of more study. Our research sought to assess whether an effect was evident and future studies could examine users' perceptions of the delivery organisations and how they differ between public and private providers. Studies could also examine the effect of the use of more complex hybrid public/private structures, for example where users contribute through additional payments or public organisations engage in joint ownership ventures, or where there are a range of different forms of public/private delivery structure used for services in a local area. Such hybridity could reduce the effect of sector differences by making the differences less evident to service users.

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APPENDIX

Table A1: Results from Experiment 1

	First DV (no coproduction vs. coproduction) <i>Logit</i>	Second DV (0 vs 100 hours coproduction) <i>Tobit</i>
Private ownership (Ref. public)	-0.140*** (0.026)	-5.706*** (1.390)
Customer prime (Ref. control)	-0.021 (0.039)	-0.989 (2.182)
Citizen prime (Ref. control)	-0.005 (0.037)	0.380 (2.111)
Constant	1.281 (0.161)	8.956 (1.522)
Scenario-Observations	1,550	1,550
Individual-observations	517	517
Pseudo R-squared	0.02	0.02

Robust standard errors in parentheses (clustered by individual-observation)
 *** p<0.01, ** p<0.05, + p<0.10

Table A2: Results from Experiment 2

	First DV (no coproduction vs coproduction) <i>Logit</i>	Second DV (0-100 hours coproduction) <i>Tobit</i>
Private ownership (Ref. public)	-0.065** (0.026)	-3.989+ (2.400)
Citizen prime (Ref. customer)	0.021 (0.026)	-.157 (2.399)
Constant	1.005 (0.149)	18.59 (2.11)
Observations	1,043	1,043
Pseudo R-squared	0.01	0.00

*** p<0.01, ** p<0.05, + p<0.10

Table A3: Results from Experiment 3

	Email provided <i>Logit</i>
Control condition (Ref. public)	-0.157 (0.155)
Private ownership (Ref. public)	-0.281+ (0.151)
Constant	-0.269 (0.104)
Observations	1,051
Pseudo R-squared	0.00

*** p<0.01, ** p<0.05, + p<0.1