DISCUSSION PAPER

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Inter-Charity Competition under Spatial Differentiation: Sorting, Crowding, and Spillovers

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Inter-charity competition under spatial differentiation: Sorting, Crowding, and Spillovers

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Abstract

We study spatially differentiated competition between charities by partnering with two foodbanks in two neighboring cities to conduct a field experiment with roughly 350 donation appeals. We induce spatial differentiation by varying the observability of charities' location such that each donor faces a socially close 'home' and a distant 'away' charity. We find that spatially differentiated competition is characterized by sorting, crowding-in, and an absence of spill-overs: Donors sort themselves by distance; fundraising (through matching) for one charity raises checkbook giving to that charity, irrespective of distance; but checkbook giving to the unmatched charity is not affected. For lead donors, this implies that the social distance between donors and charities is of limited strategic important. For spatially differentiated charities, matching 'home' donations maximizes overall charitable income. Across both charities, however, the additional funds raised fail to cover the cost of the match, despite harnessing social identity for giving.

1. Introduction

The so-called 'science of philanthropy' has been evolving rapidly over the last twenty years (see surveys by Bekkers and Wiepking, 2011; Andreoni and Payne, 2013). This interest reflects the size and importance of the charitable sector not only in the U.S., where charities received more than $400 billion in donations in 2018 (Giving USA, 2018), but also in European and Asian countries, which rank in the top 20 of givers (Charities Aid Foundation, 2018). The 'science of philanthropy' has substantially enlarged the evidence base for the most popular fundraising methods, such as subsidizing charitable donations by matching funds (e.g. Eckel and Grossman, 2008; Karlan and List, 2007; Huck and Rasul, 2011; Huck et al., 2015; Kesternich et al., 2016) and has also brought new techniques into focus.[1]

One area that has received greater attention only recently is how the market structure of the charitable sector itself affects the conclusions that can be drawn from the 'science of philanthropy'. The present paper adds to this emerging literature by examining the effect of matching donations when highly substitutable charitable goods are provided in a spatially differentiated charitable sector. Competition with spatial differentiation is a commonly encountered market structure in the non-profit sector. Analogous to its counterpart in the for-profit sector (Hurter and Lederer, 1985; Anderson and de Palma, 1988), spatial differentiated competition between charities implies that providers of nearly identical goods and services compete for donations and use their location as a distinguishing feature. Spatial differentiation is present, for example, in the food bank sector[2], but also in animal shelters, safe houses, and other charitable goods (Bilodeau and Slivinski, 1997). More than 900 local foodbanks in

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[1] Examples are the sharing of information about productivity characteristics of the non-profit (Chhaochharia and Ghosh, 2008; Brown et al., 2017), information about the donation behaviour of others (Frey and Meier, 2004; Shang and Croson, 2009; Kessler, 2013), social pressure (DellaVigna et al., 2012; Andreoni et al., 2017), combining fundraising drives for complementary charitable goods (Adena and Huck, 2017), and the sophisticated use of fundraising techniques such as providing seed money (List and Lucking-Reiley, 2002; Bracha et al., 2011), offering small gifts to donors (Falk, 2007; Alpizar et al., 2008; Eckel et al., 2016) or comparing institutional and non-institutional fundraising techniques (Landry et al., 2006). See Vesterlund (2016) for an overview on fundraising techniques and their experimental based effects.

[2] Taking the food bank sector in the London metropolitan area as a typical example, there are multiple food banks – independent operators or branches within a network (e.g. Trussel Trust Foodbanks) – competing for donations, both in kind and in money. Most do so with names that explicitly reference their area of operation (such as Vauxhall, or Hackney or the NW (North-West) postcode. This is the case both for independent operators (such as "Sufra NW London" or "Whitechapel Mission") and for food banks that are branches within a network (e.g. the Trussell Trust Foodbanks). In both cases, the location of the different charitable providers and the different branches is the distinguishing feature and is explicitly referenced vis-à-vis targeted donors. For example, gift aid forms for food banks affiliated with the Trussell Trust are specific to each location, with each local food bank, rather than the Trust, acting as direct recipient of the donation.

Germany, for instance, are organized under the joint umbrella organization of the 'Tafel Deutschland e.V' (Tafel Deutschland 2018). All cities with a population of more than 100.000 have at least one foodbank, 3 percent have more than one. For the average foodbank, there is at least one other foodbank within a distance of less than 13 km. For 41 percent, the closest competitor is within 10 km. This may explain important phenomena in the charitable sector such as its strong franchise network structure. About 60% of the foodbanks are projects within existing charitable organizations (e.g. Diakonie, Caritas, DRK, AWO), around 40% are registered associations (e.V.). All of the 947 foodbanks carry their location in their name. These foodbanks provide near complete substitute services. This makes the foodbank sector a promising environment for studying what happens when charities deploy modern fundraising techniques in a spatially differentiated market.

In the present paper, the fundraising device used by a charity competing for funds within a spatially differentiated market is the classic one-to-one (1:1) match. Among fundraising techniques, matching donations is one of the most intensely studied. Matching requires a lead donor who provides the lead gift, i.e. the funds used to match subsequent donations at a predetermined ratio (typically one-to-one) up to the limit of the lead gift. There are a number of findings in the literature about the effects of matches, with its own fundraising terminology (e.g. Karlan and List, 2007; Eckel and Grossman, 2008; Huck and Rasul, 2011; Kesternich et al., 2016). One is that matches are '*effective*': This means that the *receipts* of the matched charity, *inclusive* of the match, are higher in the presence than in the absence of the match. A second is that while effective, partial crowding-out of donations often leads to matches being '*inefficient*': *Checkbook giving* by donors to the matched charity, *exclusive* of the match, is often, but not always, lower in the presence of the match than in its absence. In case of an *efficient* match, checkbook giving is higher in the presence of the match. A third is that matches are generally not '*efficacious*': Even when efficient, the increase in checkbook giving (crowding-in) is almost always less than the costs of employing the match.

The richer market structure of spatial differentiation offers the opportunity to examine not only the *crowding* effect of a match, that is, its effect on the matched charity. We can also study its *spillover* effect, that is, its effect on an unmatched charity operating in the same market, and by extension its effects on total checkbook[3] giving in our 'market'. Examining crowding and spillover effects separately and jointly is of interest for a number of reasons:

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[3] On a point of terminology, we refer to 'total' checkbook giving as the sum of donations received by both charities from all donors. By 'aggregate' checkbook giving, we usually refer to a specific aggregation of donations either by charity or by donor location.

We conjecture, and establish early in our experiment, that in a spatially differentiated market with close substitutes, donors 'sort' spatially, i.e. they tend to give to charities spatially close to them. This 'home bias'[4] in donor behavior is a possible explanation for spatial differentiation in the charitable sector but also raises important questions for three stakeholders in the science of philanthropy: lead donors, charitable organizations, and the public economist. Lead donors, whose gift will be used for a matching scheme, will want to understand what is more effective in the presence of a home bias: Matching donations to donors' 'home' charities – or perhaps matching donations to an 'away' charity, located further away from potential donors? For charitable organizations in spatially differentiated markets, it raises the question of whether they get greater impact from using a lead donation to match subsequent donations by 'home donors' or by 'away donors'? Finally, both the spatially differentiated charity with branches in multiple locations and the public economist concerned with the private provision of public goods will be interested in whether the match is effective, efficient, and efficacious with respect to total outcomes: Does matching donations to one charity lead to negative or positive spillovers onto receipts by the other, unmatched charities? Do spillovers depend on whether it is the 'home' or the 'away' charity that is matched? And if so, are the spillovers sufficiently large to offset or augment the direct effect of the match?

Our approach to answering these questions is to partner with two foodbanks operating within the same region to conduct a field experiment in which the two foodbanks compete for donations. About 350 potential donors receive a funding appeal from these foodbanks after having participated, for a fixed reward, in a household survey on an unrelated topic. In this appeal, they are asked to donate all or part of their 15 Euro compensation to either or both of the charities. Unknown to the survey participants, the donation decision was taken under randomly assigned treatment conditions. Using treatments in which the observability of spatial differentiation is either switched on or off, our first result demonstrates the extent of the 'home bias': As expected, when donors can infer the location of a food bank by location-specific designators in the organization's name, their giving sorts spatially in favor of a charity spatially close to themselves.

Our main treatment then varies whether it is the socially close 'home' or the socially more distant 'away' charity, from the donor's point of view, that is conducting a fundraising campaign through a 1:1 match. This gives rise to our second result: Under spatially

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[4] On another point of terminology, we are well aware that giving that favors local charities may simply reflect the donor's preference structure. 'Bias', therefore, is not meant to imply irrational behavior by donors, but simply an empirical regularity of spatial sorting.

differentiated competition, the presence of a lead gift raises checkbook giving to the charity applying the match. This demonstrates that results from non-competitive settings (e.g. Karlan and List, 2007; Gneezy et al., 2014; Huck et al., 2015; Eckel and Grossman, 2017) carry over to richer market structures. Importantly, this result holds for fundraising campaigns conducted by both 'home' and 'away' charity, with the highest impact for donations to the 'away' charity.

By design, the high substitutability between the two recipient organizations creates an unfavorable environment for total fundraising: Negative spillover effects should be maximal (Adena and Huck, 2017). Our third result is, however, that there are no significant negative spillovers from matching one charity to donations received by the unmatched one. We even find some evidence for positive spillovers: When a match is offered for donations to the socially close 'home' charity, donations to the socially more distant 'away' charity increase significantly. Jointly, the crowding-in of donations to the matched 'home' charity and a positive spillover effect on the amount given to the 'away' charity are the basis of result 4: Total donations to the 'market' of two charities reach the highest level when the 'home' charity is matched in a spatially differentiated charitable sector.

Our results have important and nuanced implications for different stakeholders in the science of philanthropy: For a lead donor whose favored charity is spatially differentiated, the results imply that if she is after the narrow productivity of her lead gift (additional funds raised per dollar of lead donation), she is likely to achieve this objective by matching 'away' donations. For a spatially differentiated charity, however, the presence of positive spillover effects between different branches within their network implies that matching 'home' donations is most effective in increasing their total charitable income. Yet even when the charity does so, this way of using the lead gift is not efficacious because the crowding-in is only partial: Total donations increase by less than the expenditures for the match. For the public economist, the results challenge inter-charity competition as a meaningful justification for the persistent popularity of matches in fundraising (Huck and Rasul, 2011): The absence of negative spill-over effects in our setting is inconsistent with the argument that a charity needs matches in order to prevail in inter-charity competition.

The results of the field experiment contribute to two different streams in the academic literature on charitable giving: One is the emerging literature in which charitable giving is examined in the context of richer market settings that involve inter-charity competition. The theoretical strand of literature builds on early work by Rose-Ackerman (1982), who examines

the claim that competition among charities leads to excessive fundraising. This has been refined by Aldashev and Verdier (2010) and Aldashev et al. (2014) and given more nuance by considering provider warm-glow (Scharf, 2014) and information asymmetries (Krasteva and Yildirim, 2015; Lange et al., 2017). The empirical strand features lab experiments[5] and observational data.[6] Closest to our paper are field experiments: Bekkers (2015) examines how an episode of matching donations to one charity affects giving to a natural disaster relief effort and finds no effect. Lange and Stocking (2012) look at the complementarities of giving money and giving time in a field experimental setting. Van Diepen et al. (2009b) analyze whether increasing the number of direct mailings of multiple charities effects donations. Donkers et al. (2017) study the impact of increased mailing of multiple charities, finding negative intra-charity spillovers over time but only weak short-term effects on other charities. Our paper contributes to this literature by conducting, to our knowledge, the first field experiment to disentangle intra-charity crowding and inter-charity spillovers of fundraising techniques in a competitive environment where charities are spatially differentiated.

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[5] In the laboratory, Harwell et al. (2015) find that a video promotion of one out of several charities does not raise total donations, but leads to a greater share allocated to the promoted charity. Brown et al. (2017) vary the information on quality ratings and location in a menu of ten charities and find that subjects preferentially donate to charities revealed as higher-quality, but not preferentially to local charities. Filiz-Ozbay and Uler (2019) introduce differentiated tax rebates in a multi-charity setting and find both an increase in total donations and a greater share of donations going to subsidized charities. In a setting where subjects have to allocate a budget between competing charities offering a variety of services, Deck and Murphy (2019) find a negative spillover from matching donations to one charity on the amounts received by unmatched charities. There is a related literature on the private provision of multiple public goods in laboratory settings. Corrazini et al. (2015) exogenously vary the number of threshold public goods. They find that aggregate donations fall in the number of public goods to be provided and that thresholds are less likely to be met. Krieg and Samek (2017) vary the price of giving in a two-public-goods setting and find that decreasing the price of providing one good increases aggregate donations and donations to the other good.

[6] Among the observational studies, Van Diepen et al. (2009a) show, in the short-run, negative intra-charity crowding from own fundraising drives, but positive inter-charity spillovers. On the other hand, a cross-sectional and time-series study using data of competing charities deploying matches on a crowd-funding platform finds neither positive nor negative spillovers (Meer, 2017). A related literature studies not only inter-charity spillover and intra-charity crowding effects from a spatial perspective, but also from an intertemporal perspective. Meier (2007) examines the effect of an episode of matching donations on later donations to the same charity. Castillo et al. (2017) conduct a natural field experiment to understand intertemporal inter-charity spillovers. They find that a matching episode increases aggregate donations and that negative spillovers wear off after one month. Cairns and Slonim (2011) study sequential church donations and find negative spillovers between the second and the first donation to the same charity. Scharf et al. (2017) investigate the effect of a fundraising appeal on donations received by the same charities and by different charities both immediately after the appeal and in a 20 week period after the appeal across a rich charity space. Immediately after the appeal, they find positive spillovers to other charities. This immediate increase is, however, offset by a decrease in donations in the weeks after the appeal. All in all, they find little evidence that non-fundraising charities are affected by negative spillover across time. Adena and Huck (2019) analyze whether beliefs about future fundraising campaigns effect intertemporal crowding, finding that donations for the same charity are intertemporal substitutes.

The other literature to which we contribute studies the importance of 'social distance' for fundraising outcomes. 'Social distance' speaks to the affinity between a potential donor's identity and the recipient organization. Through the lens of social identity theory (Akerlof and Kranton, 2002), a potential donor might be more inclined to give to a charity which she perceives as part of her own local community – even when she does not individually benefit from the charitable cause itself. In a field experiment, Kessler and Milkman (2016), for example, prime potential donors towards a shared local identity with the non-profit and find this increases donations to the charity. A lab experiment by Brown et al. (2017) provides information to subjects that some charities out of a menu of ten are located spatially close to the donor but does not find evidence that local charities are preferred. Our paper not only clearly identifies the presence of a 'home bias' of donors via exogenous treatment variations but also highlights that differences in social distance between donors and recipients have implications for the effects of common fundraising techniques in a competitive environment.[7]

The paper proceeds as follows: in the next section, we introduce a theoretical framework that incorporates the concept of social distance into the study of charitable donations under competition. In Section 3 we describe the experimental design and procedures. Section 4 presents the core results, starting with demonstrating the presence of a 'home bias' and then examining its implications. Section 5 concludes with a discussion of the results.

2. Theoretical considerations

To introduce the concept of social distance into the study of charitable donations under spatial competition, we extend a common model of impure altruism (Andreoni, 1990) to a situation in which both potential donors and potential recipient organizations can be characterized, among other dimensions, by their location in (physical) space. This section serves as a departure point for thinking about spatial dimensions of inter-charity competition. It demonstrates that sorting can be expexted for a general set of assumptions regarding donors' preferences. Predictions regarding crowding and spillover effects hinge on specific anssumptions regarding such preferences that will not be made in this section.

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[7] An example for a trade-off between identity considerations and efficiency has been described in Akerlof and Kranton (2002) in the context of alumni giving. Graduates are most likely to give to their own alma mater even if giving to another (potentially worse endowed) educational institution would yield a higher marginal return. Of course, alumni giving is not solely motivated by improving educational outcomes, but might also reflect a sense of giving back to a community.

The simplest case is bi-locational: Each of two positions in space, A and B, contains both a set of potential donors, $i^A \in \{1, 2, \dots, N^A\}$ and $i^B \in \{1, 2, \dots, N^B\}$, and a charitable organization, A or B. Donor i at location A can give to the charity also located in A, g_{AA}^i (a 'home' donation) or to the one located in B, g_{AB}^i (an 'away' donation). Likewise, a donor i at location B can give to the 'away' charity located in A, g_{BA}^i, or to the 'home' charity located in B, g_{BB}^i. The total amount of giving to each charity, A and B, is therefore

$$A = \sum_{i^A=1}^{N^A} g_{AA}^i + \sum_{i^B=1}^{N^B} g_{BA}^i \text{ and } B = \sum_{i^A=1}^{N^A} g_{AB}^i + \sum_{i^B=1}^{N^B} g_{BB}^i$$

Under impure altruism, the utility of a donor at location A can be represented by a function that contains consumption x_i, the provision of the two public goods $G_A(A, B)$, and the warm glow of giving $g^i(g_{AA}^i, g_{AB}^i)$ as arguments. In the bi-locational case and under the assumption that location is the only relevant difference between individuals, this means that for a donor at location A, utility is given by

$$U_i\left(x_i, G_A(A, B), g^i\left(g_{AA}^i, g_{AB}^i\right)\right)$$

and for a donor at location B, utility is given by

$$U_i\left(x_i, G_B(A, B), g^i\left(g_{BA}^i, g_{BB}^i\right)\right),$$

which individuals maximize subject to the budget constraint given income y. We explicitly allow for different prices of giving: Individuals at location B face a price of giving to the charity at A, p_{BA}, and a price of giving to the charity at B, p_{BB}. In the absence of any fundraising activities by either charity, these prices both equal 1. Fundraising through a match by one charity affects the respective price of giving to this charity. For instance, by offering a match, charity A can lower its price of giving such that now her donors from B face $p_{BA} < 1$ and likewise her donors from A face $p_{AA} < 1$. We can therefore define the budget constraint for donors such that for a donor at - for example - location B, this is

$$y - x_i - p_{BA}g_{BA}^i - p_{BB}g_{BB}^i = 0$$

To capture social distance, we can extend the workhorse model of impure altruism, augmented with explicit prices of giving as above, in at least two ways. In both, we capture that individuals do not derive the same utility from providing otherwise identical public goods at locations A and B. One way is to consider how social distance affects the altruistic part of

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the utility function $G_A(A, B)$. For example, under assumptions of a constant elasticity of substitution between identical public goods produced by a charity located at A and another located at B, the altruistic part for a donor at A becomes

$$G_A(A, B) = \left(\frac{1}{2\delta_{AA}} A^\mu + \frac{1}{2\delta_{AB}} B^\mu \right)^{1/\mu}$$

where $\sigma = 1/(1 - \mu)$ denotes the elasticity of substitution between the public good provided at A and that provided at B and $\delta_{AA} < \delta_{AB}$ denote measures of social distance between a donor at A and charities at the same or the other location. For the special case of perfect substitutability, altruistic benefits become simply $G_A(A, B) = A/\delta_{AA} + B/\delta_{AB}$ and at equal prices of giving, $p_{AA} = p_{AB}$, the model predicts that an individual maximizes altruistic utility by donating to the socially closer charity only. In other words, there is perfect donor sorting according to social distance.

The other approach is to focus on the warm glow part $g^i(g_{AA}^i, g_{AB}^i)$ of the utility function in order to capture social distance. Hewing closely to the altruistic channel above, the warm glow component can be modelled in a similar way such that

$$g^i \left(g_{AA}^i, g_{AB}^i \right) = \left(\frac{1}{2\gamma_{AA}} \left(g_{AA}^i \right)^\nu + \frac{1}{2\gamma_{AB}} \left(g_{AB}^i \right)^\nu \right)^{1/\nu}$$

where $\theta = 1/(1 - \nu)$ denotes the elasticity of substitution between the warm glow of giving to A and that of giving to B and $\gamma_{AA} < \gamma_{AB}$ denote measures of social distance between a donor at A and charities at the same or the other location, respectively. For the special case of perfect substitutability, warm glow benefits reduce to $g^i \left(g_{AA}^i, g_{AB}^i \right) = g_{AA}^i / \delta_{AA} + g_{AB}^i / \delta_{AB}$. $g^i(g_{AA}^i, g_{AB}^i) = g_{AA}^i / \delta_{AA} + g_{AB}^i / \delta_{AB}$. As in the approach centered on the altruism component, spillover is perfect when prices of giving are equal: Individuals maximize their utility by donating to the socially closer charity only.

Given the general set-up above, changes in the social distance and changes in the price of donating can have different impacts on total giving by an individual and on the relative shares going to the charity at the 'home' location and the 'away' location. This has implications for the ability of the impure altruism model to generate tight theoretical predictions. As the limit case of perfect substitutability illustrates, the model generally predicts sorting when social

distance matters: Donors in a spatially differentiated market for charitable giving will favor the socially close 'home' location, independent from whether social distance affects the warm glow component or the altruistic component of the donors' utility function, or both. Predictions beyond sorting are considerably more involved. For example, whether donations to the 'home' charity or the 'away' charity increase in absolute terms after a price change depends, as Scharf et al. (2017) show, in subtle ways on at least four factors: The respective shares going to both charities at the time of the change, the price elasticity of warm glow and/or altruism, and the elasticity of substitution between altruism and warm glow, and the elasticities of substitution of altruism and warm glow between the 'home' and the 'away' charity. Theory provides little guidance on the magnitude of these parameters. This, and the complex interaction between the factors, frustrates attempts to make tight theoretical predictions on the effects of exogenous variations in the price of giving on total giving, crowding effects within charities, and spillover effects across charities. The same holds for the effect of changes in social distance, beyond that of sorting.

To make headway in a situation where we cannot advance on the basis of theorizing alone, we set up an experimental design that instead provides empirical measurements of the important linkages between social distance and charitable giving. On this basis, we then examine whether relative differences in social distance affect the pattern of giving and how these patterns interact with the price of giving.

3. Experimental design and procedures

Our experimental design features treatment variations motivated by the theoretical considerations above and implemented in a field setting of donation appeals. In this setting, we test for the presence of crowding and spillover effects when charities compete for donations in a spatially differentiated sector. As a stepping stone to establishing these relationships, we first aim at identifying the extent of donor sorting i.e. the presence of a 'home bias'. We embed our experiment in an online fundraising drive of two foodbanks simultaneously asking for donations from the same donor.[8] To clearly identify the presence and scope of a possible 'home bias', the two foodbanks we partner with for our experiment

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[8] This allows us to exploit the advantages of a framed field experiment (Harrison and List, 2004) such as observing decision behavior in a specific but natural environment while maintaining a high level of control and providing detailed information about all relevant outcome variables. We use an anonymous online setting to avoid confounding factors such as social image concerns which have shown to play a role in fundraising campaigns that operate via door-to-door collections (DellaVigna et al., 2012).

fulfill a number of desirable criteria: They operate in the same metropolitan region, offer highly substitutable services, and belong to the same umbrella organization, yet are run by different charitable providers. The potential donors targeted in the fundraising appeals live in the same region the charities operate in. This metropolitan region consists of two large German cities, Heidelberg and Mannheim (A and B, from now on) that are located within 25 km of each other. One of the charities is located in A and the other in B. Their exact location within the region does not appear in their officially registered names [9] but is highly visible in their public displays (*Tafel Heidelberg e.V.* and *Tafel Mannheim e.V.*).

Before the actual experiment, participants received a fixed reward of €15 for completing a household survey that was thematically unrelated to the experiment. Participants accessed the survey via an online link and a personal participation code provided in the recruiting email in the appendix. This code could only be used once, thus ensuring that there was no possibility for multiple participations or treatment spillover. After logging in, participants were informed about the duration of the survey and the payment. Only after completing the unrelated household survey, subjects were, for the first time, confronted with the possibility to donate their remuneration earned in the survey. They could choose whether to donate all or a share of their effort remuneration (€15) to one or both of two charities mentioned in the fundraising drive. Unknown to the potential donors, subjects were at this stage randomly allocated to one of five treatment conditions (between-subjects). These five conditions resulted from varying two treatment dimensions (see table 1). One dimension varied the relative price of giving between the charities through the presence or absence of 1:1 matches for donations to one charity. The other dimension varied whether the charities' location, and hence the social distance to the potential donor, was disclosed in the name. This variation allows to study the same charities in two competition settings, once with and once without spatial differentiation, and to detect, as a preliminary step, the presence of a potential 'home bias' in giving.

At equal relative prices between the two charities (no match), the treatments T1 and T2 manipulate social distance. In *T1: Neutral*, charities are referred to by their official names which do not disclose their location. In the *T2: CityLabel* condition, charities are referred to by their publicly displayed names, which contain a locational designator.[10] Both *T1: Neutral* and *T2: CityLabel*, therefore, feature competition between the same two charities with an

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[9] They are registered as 'Caritas Food Bank Shop' and 'Foodbank of the German Red Cross'.

[10] In both conditions potential donors are informed that both charities provide foodbank services within the region but only in the *CityLabel* conditions charities' exact locations are observable.

Table 1: Summary of experimental design

No.	Match	Label	Treatment	Observations
T1	No	Neutral	T1: *Neutral*	76
T2	No	City label	T2: *CityLabel*	73
T3	Yes	Neutral	T3: *NeutralMatch*	53
T4	Yes (home)	City label	T4: *HomeMatch*	78
T5	Yes (away)	City label	T5: *AwayMatch*	67
TOTAL				347

Note: Description of treatment conditions T1 to T5 and the corresponding number of observations available for analysis.

equal price of giving. But only T2: *CityLabel* features spatially differentiated competition: Donors, themselves located in A or B, are asked to donate to a 'home' (A to A or B to B) and an 'away' (A to B or B to A) charity.

Treatment conditions (T3 – T5) vary the relative prices of giving through either one of the two competing charities offering to match donations as a fundraising tool. The tool is always a 1:1 match, i.e. each donation made will be doubled before the charity receives it.[11] Condition *T3: NeutralMatch* examines the baseline case of undifferentiated competition. As in treatment *T1: Neutral*, the charities lack spatial designators and can only compete on the price of giving. In conditions *T4: HomeMatch* and *T5: AwayMatch*, competition is spatially differentiated: Charities are referred to by spatial designators as in treatment *T2*. In *T4: HomeMatch*, donations to the donor's socially close 'home' charity are matched. In *T5: AwayMatch*, the offer is to match donations to a donor's socially more distant 'away' charity. Table 1 shows the five between-subjects treatment conditions and displays their name used in the main text in column 4. Figure A1 of the appendix provides a schematic diagram of the experimental procedure.

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[11] As common in the literature on matching (Karlan and List, 2007; Huck and Rasul, 2011), the match was casually introduced: The donation screen simply informed participants that – thanks to a campaign – one euro would be added to each euro donated to the matched charity. A match of 1:1 is the most common matching rate in the literature, possibly reflecting the observation that higher matching rates are typically not more effective (Karlan and List, 2007; Kesternich et al. 2016).

A total of 347 individuals from Heidelberg (168) and Mannheim (179) took part in the experiment to the end.[12] On average participants completed the household survey and the subsequent experiment in approximately 13 minutes. After the experiment participants received the parts of their remuneration not donated in form of a voucher (Edenred payment card) which is redeemable for purchases at most major retail chains, petrol stations, and online shops.[13] Amounts donated were passed on the respective charities including matches. The initial survey collected information on core demographics, i.e., age, sex, income, and education. We provide summary statistics of these demographics in Table A1 of the appendix. In our sample of potential donors, there is a slight majority of males (58.5%) and the average age is 40 years. The age of our sample matches that in the population of the respective cities and there are slightly fewer females in our sample than in the population. The income in our sample is higher than the population average and we oversample individuals with high education levels. Importantly, as shown in table A2 of the appendix, our treatment randomization resulted in balanced conditions with respect to these observable outcomes.
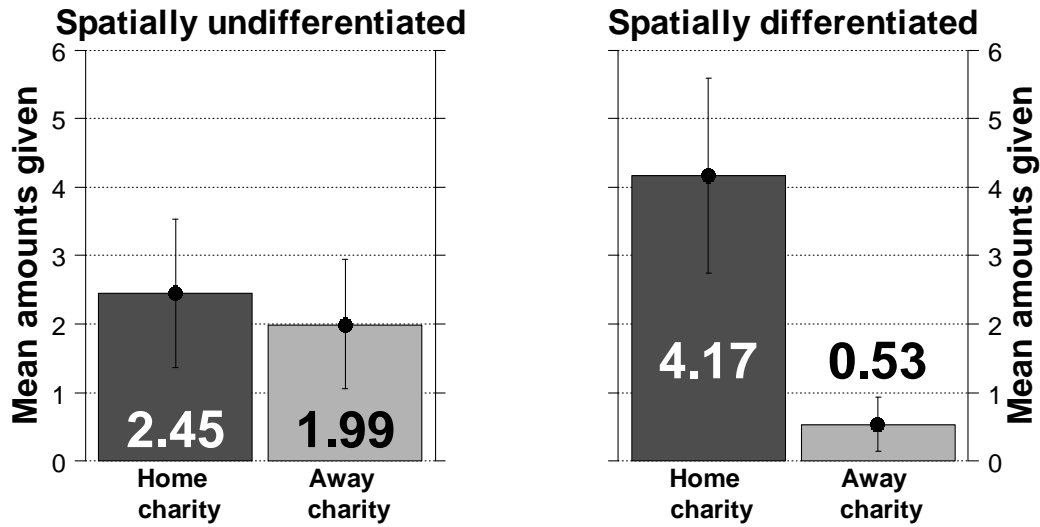
4. Results

As a preliminary step towards our main target - the crowding and spillover effects of matching donations in spatially differentiated competition - we first validate a core prediction of our theoretical considerations in section 2. This prediction was that charities that provide substantially substitutable services in a spatially differentiated market face spatially sorted donors. In other words, we expect donors to give preferentially to the charity located relatively closer to them when this is observable through a spatial designator. By the same logic, potential donors are predicted to be less inclined to give to charities they identify with less.

We test for spatial sorting at three levels of aggregation. First, we simply compare *T1: Neutral*, in which charities' names do not reveal their location, and hence their social distance to the potential donor, with *T2:CityLabel*, in which they do. We first pool data across charity and donor location – thus ignoring any location-specific effects – and ask if giving to the

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[12] There are further participants (55) who did not complete the study or did not clearly identify as inhabitants of the respective cities and thus had to be dropped from the final analysis.

[13] The participants were already familiar with this kind of payment procedures from a previous study and were reminded of procedures in detail in the recruiting email. This procedure has the large advantage that payments can be made without personal contact and without exchanging bank details.

Figure 1: Sorting effect

Note: Average checkbook donations to a donor's 'home' and 'away' charity under a spatially undifferentiated market structure T1 (left) and a spatially differentiated market structure T2 (right). Confidence intervals at the 95%-level.

'home' charity (from A to A or B to B) differs from giving to the 'away' charity (from A to B or B to A) in *T1:Neutral* and *T2:CityLabel* (see figure 1). In *T1:Neutral*, donors give approximately the same amount on average to the charity in their 'home' location (2.45) as they give to the charity in their 'away' location (1.99); i.e. there is no statistically significant sorting (Sign-Rank Test; p=0.74). In *T2:CityLabel*, however, there is a significant (Sign-Rank Test; p<0.001) preference for giving higher amounts to the 'home' charity (4.17) than to the 'away' charity (0.53). A closer investigation of the entire distribution of giving (see Section A1.1 of the appendix) reemphasizes these patterns of giving. Furthermore, this analysis reveals that the observed sorting effects occur mainly at the extensive margin: while the propensity to give zero to the home charity decreases by 10 percentage points, in *T2:CityLabel,* the propensity to give zero to the away charity increases by 15 percentage points. This provides strong evidence for the presence of a 'home bias' in giving.

In a second step, we disaggregate this analysis further to account for the possibility that there could be location specific effects through unobserved charity or donor characteristics. Such effects would be expected to imply systematic differences in whether and how much subjects donate to charity A or B. Table 2 shows, at different levels of aggregation, the average flow of donations from donors to charities for a spatially undifferentiated charity sector and a differentiated charity sector, respectively.

Table 2: Average donations by donor and charity type

		Donor Location		
		A	**B**	**Average amount received (from donor location A and B) by charity**
Charity Location	**A**	2.08; 4.31 (T1) (T2)	2.31; 0.14 (T1) (T2)	2.19; 2.25 (T1) (T2)
	B	1.69; 0.93 (T1) (T2)	2.85; 4.03 (T1) (T2)	2.26; 2.48 (T1) (T2)
Average amount given (i.e. to A and B) by donor		1.88; 2.61 (T1) (T2)	2.58; 2.08 (T1) (T2)	2.22; 2.35 (T1) (T2)

Note: Cells report average donation in €per subject in each treatment. Left-hand entries in each cell indicate checkbook giving when charity locations are not observable (T1); right-hand entries indicate checkbook giving when charity locations are observable. The average checkbook donations to a donor's 'home' charity seen in figure 1 are the treatment-wise average along the core cells diagonal (AA, BB); the average checkbook donations to a donor's 'away' charity are the treatment-wise averages on the diagonal (BA, AB).

First, the cell in the southeast corner of the table reports the grand average amounts given by the average donor to the average charity, which by construction corresponds to the average amount received by the average charity. These flows are statistically indistinguishable between *T1: Neutral* (2.22) and *T2: CityLabel* (2.35) (M.W. Rank Sum; p= 0.76). Repeating this kind of analysis by charity (far-right column), we similarly see that each charity (i.e. averaging donations from donor location A and B), receives the same amount of donations, irrespective of the market structure (Charity A – *T1: Neutral*: 2.19 vs. *T2: CityLabel*: 2.25, p=0.76, M.W. Rank Sum; Charity B – *T1: Neutral*: 2.26 vs. *T2: CityLabel*: 2.48, p= 0.98, M.W. Rank Sum). Third, looking at the average by donor location (bottom row), subjects' average giving to both charities does not differ in a statistically significant way between the two market structures (Donor A – *T1: Neutral*: 1.88 vs. *T2: CityLabel*: 2.61, p=0.35, M.W. Rank Sum; Donor B – T1: 2.58 vs. 2.08, 0.60, M.W. Rank Sum). Taken together, the disaggregated analysis provides no evidence that the headline sorting effect shown in figure 1 can be explained by strong donor specific (i.e. differences between donors in A and B) or strong charity specific (i.e. differences between charities A and B) heterogeneities in giving.

At the third and most disaggregated level (central four cells), the evidence also aligns with the sorting prediction. Comparing donation streams under *T1: Neutral* (first column entries) and *T2: CityLabel* (second column entries), we find significant differences. In *T1: Neutral,* donors located at city A or city B give similar amounts to charities A and B (Donor A – 2.08 vs. 1.69,

p=0.65, Sign-Rank Test; Donor B – 2.31 vs. 2.85, p=0.93, Sign-Rank Test). This pattern changes markedly in *T2: CityLabel*. Donations to subjects' socially close 'home' charity are now significantly higher than to their socially more distant 'away' charity for both charity and donor types: donations from persons located in A flow preferentially to charity A rather than to charity B (4.31 vs. 0.93, p=0.001, Sign-Rank Test) and likewise for donations from donors located in B, who give preferentially to charity B (0.14 vs. 4.03, p<0.001, Sign-Rank Test). Thus, after accounting for location-specific idiosyncrasies, we continue to find consistent evidence for a 'home bias'. We summarize these observations in our first Result.[14]

Result 1

In a spatially differentiated market for charitable giving, overall giving and charity receipts were the same as in a spatially undifferentiated one. However, donors sorted spatially in the sense that they preferentially gave to charities in the socially close 'home' location and not preferentially to charities in the socially more distant 'away' location.

The demonstration that spatial differentiation in a charitable sector causes no change in overall giving, but causes donor sorting not only sheds light on the particular donor environment in which the main treatment intervenes. It also provides two additional insights. One is that this significant shift in underlying donor behavior can be induced by a rather subtle change in the fundraising environment that moves the same charity from a spatially undifferentiated market into a differentiated market by disclosing their locations. Small changes in the market structure may, therefore, lead to big changes in patterns of giving among the potential donor population, and therefore in the context in which fundraising tools are studied. This also implies that charities need to carefully think about the spatial distribution of their donor population before they decide to partake in spatially differentiated competition. The second insight is that when fundraising methods are studied, the conclusions can differ significantly, depending on the specific donor-charity flow under investigation. Comparing local donations, i.e. where donor and charity are in the same location, in the undifferentiated and the differentiated setting, we see that differentiation raises local donations considerably. This mirrors the results of a recent paper (Kessler and Milkman, 2016) that finds that charities can attract additional local donations by emphasizing close

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[14] We find equivalent results when focussing at extensive margin giving i.e. the decision to give. In *T1: Neutral* donors are as likely to give a positive amount to charity A as to charity B (Sign-Rank Test; Location A: p=1, Location B: p=1). In *T2: CityLabel* there is, however, strong sorting towards the 'home' charity (Sign-Rank Test; Location A: p<0.01, Location B: p<0.001).

social distance. However, once either 'away' contributors to the local charity or 'away' donations from the local donors are taken into account, local differentiation has no impact on total donations received by the sector as a whole. Spatial differentiation, donor sorting, and the joint effects of crowding and spillovers in such a setting, therefore, merit further investigation through the main treatment.

4.2. Crowding and spillover effects of matches in a spatially differentiated charitable sector

Against the background of spatially sorted donors, we now turn to the core interest of this paper. This is to assess the full impacts of one charity deploying the classic fundraising tool of a match for donations in such a market setting. We first study the presence and magnitude of crowding effects, i.e. the effect of the match on the matched charity. Following these intra-charity effects, we continue with the spillover effects, i.e. the presence and magnitude of inter-charity effects of the match on the unmatched charity. Finally, we look at the sector-wide effects, i.e. the effects of the match by one charity on total checkbook giving.
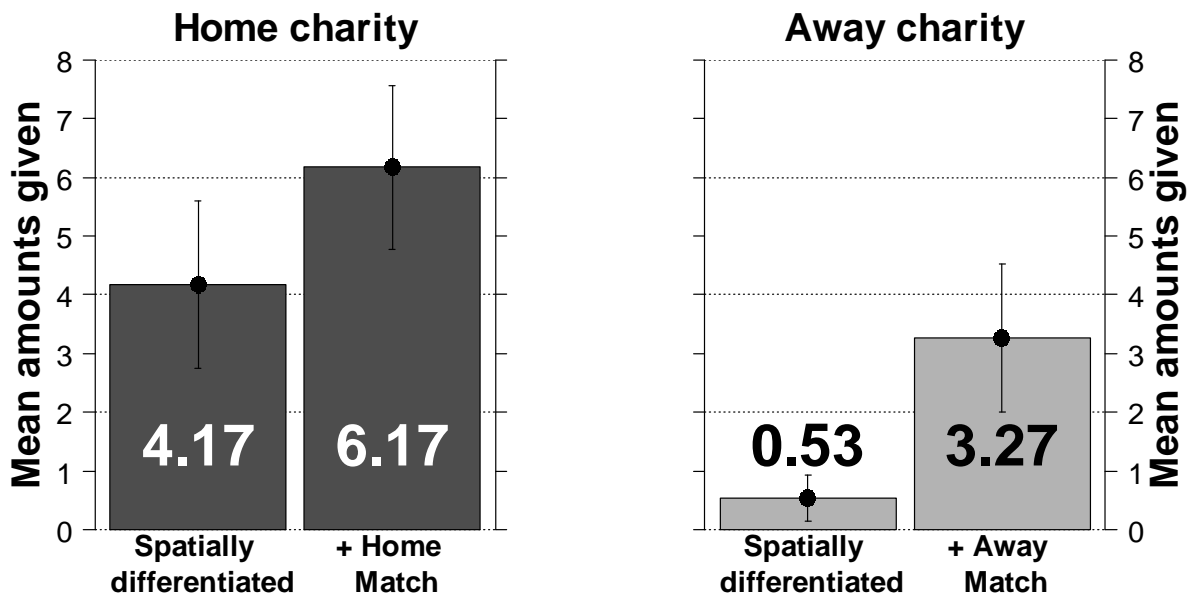
4.2.1. Intra-charity effects: crowding

Starting with the intra-charity effects of a match, the main results are summarized in figure 2. This figure shows the grand total effect of a 1:1 match for the average donation flowing to the charity applying the match. This ignores any location-specific effects and simply compares donation flows from 'home' donors to 'home' charities in the absence (*T2: Neutral*) and presence (*T4: HomeMatch*) of a match (left panel). Likewise, the right panel illustrates the effects of a match on donations flows from 'away' donors to 'away' charities.

Both comparisons deliver consistent evidence for (partial) crowding-in or, conversely, strong evidence against crowding-out. For 'home' charities, the presence of a match increases checkbook giving from 4.17 to 6.17 (p=0.017, M.W. Rank Sum Test). For the 'away' charities we observe complete crowding-in: when a match is applied to the 'away' charity, checkbook giving increases from 0.53 to 3.27 (p<0.001, M.W. Rank Sum Test).

These results continue to hold if we control for a set of donor characteristics and city-fixed effects as shown in table A3 of the appendix. Comparing the strength of the crowding effects for a 'home' and an 'away' match by comparing the coefficients in table 3, we do not find a significant difference in the overall strength of the crowding effect (2.00 vs. 2.73, p=0.529, comparing the size of coefficients in column (1) and (3)). For the different margins of giving (column (2) vs. column (4)), we find no significant differences at the extensive margin (0.59

Figure 2: Crowding effects on the matched charity

Note: Average checkbook donations to the matched charity in the absence (left bar) or presence of a match (right bar). The left panel shows this comparison for a match applied to the 'home' charity (T2 vs T4) and the right panel shows the same comparison for a match applied to the 'away' charity (T2 vs T5). Confidence intervals at the 95%-level.

vs. 0.97, p=0.185) but significant differences at the intensive margin (-1.13 vs. 4.70, p<0.001).

Table 3 summarizes the results of a set of regression models that provide further evidence for the presence of (partial) crowding-in. Models 1 and 3 show the results of a simple OLS regression in which the amount given is regressed on a treatment dummy indicating the presence of a match in T4 or T5 respectively. For both the 'home' charities (model 1) and 'away' charities (model 3) the match significantly increases checkbook giving by 2.00 and 2.73, respectively. Models 2 and 4 follow Huck and Rasul (2011) in using a two-step estimation procedure of a hurdle model to estimate treatment effects on participants' propensity to donate and the amount donated conditional on a positive donation being made.

The first stage accounts for the fact that the decision to donate (i.e. the extensive margin choice) may react differently to the presence of a match than the decision of how much to donate (i.e. the intensive margin choice). This conditional choice is derived in the second stage of the hurdle model. At the extensive margin, we find for both 'home' and 'away' charities a significant increase in the propensity to give if a match is applied: The propensity

Table 3: Regression results crowding effect

	Home Charity			Away Charity		
	(1) **OLS** Donation	**(2)** **Hurdle** Two stage		**(3)** **OLS** Donation	**(4)** **Hurdle** Two stage	
		Extensive Margin	Intensive Margin		Extensive Margin	Intensive Margin
MATCH (1=Yes)	2.00** (1.002)	0.59*** (0.207)	-1.13 (1.188)	2.73*** (0.644)	0.97*** (0.265)	4.70* (2.776)
CONSTANT	4.17*** (0.720)	-0.33** (0.150)	11.16*** (0.943)	0.53 (0.447)	-1.30*** (0.203)	3.59*** (1.817)
Obs.	151	151	151	139	139	139

Notes: Models (1) and (3) OLS regression coefficients, with standard errors in parentheses; models (2) and (4) coefficients of a hurdle model. $*p < 0.1$, $**p < 0.05$ and $***p < 0.01$.

to give increases from 37 percent to 60 percent for the 'home' charity and from 10 percent to 38 percent for the 'away' charity. At the intensive margin, by contrast, results differ between a match applied to the 'home' charity and a match applied to the 'away' charity. For the 'home' charity, we do not find that conditional giving increases if a match is applied. For the 'away' charity, donors give significantly more conditional on giving a positive amount. These differences imply that the full crowding-in observed for the 'away' charity is driven both by a significant increase in the number of donors and a significant increase in the average gift size by each donor while for the 'home' charity, the full crowding effect is driven by the extensive margin only.

Adding more nuance to the grand total, we also report the disaggregated effects for the matched charity across charities and by donor location in table 4. The left entry in each cell reports the average checkbook donations in the spatially differentiated sector in the absence of a match. This is the baseline for the comparison and the same as reported in table 1, *T2: CityLabel*. The right-hand entry in each cell now reports average checkbook donations in the spatially differentiated sector, when donations to that charity are matched 1:1. Comparing the left-hand and the right-hand entry gives the intra-charity effect of a match at the cell-specific level of aggregation.

Table 4: Crowding effects of a match for spatially differentiated competition

		Donor Location		
		A	**B**	*Average by charity*
Charity Location	**A**	4.31; **5.57** (T2) (T4)	0.13; *4.72* (T2) (T5)	2.25; 5.19 (T2) (T4/T5)
	B	0.93; *1.77* (T2) (T5)	4.03; **6.90** (T2) (T4)	2.47; 4.41 (T2) (T4/T5)

Note: Cells report average donation in €per subject in each treatment. Left-hand entries in each cell indicate unmatched checkbook giving; right-hand entries indicate checkbook giving when donations to that charity were matched 1:1. For central cells, boldface indicates a match of donations to the 'home' charity (T4), italics a match of donations to the 'away' charity (T5).

The central message of figure 2 that no crowding-out is present is robust to a more disaggregated perspective. First, disaggregating the average donation data by location, i.e. by charity, as reported in the rightmost column, we find that a match to charity A increases giving from €2.25 to €5.19 (M.W. Rank sum test, p<0.001) and a match to B, from €2.47 to €4.41 (p=0.024). Second, further disaggregation points towards some location specific idiosyncrasies in the strength, but not in the direction of the crowding effect. For charity A, we find that its 'home' donors (located at A) who increase average giving from €4.31 to €5.57 (p=0.224, M.W. Rank Sum Test). Its 'away' donors (located at B), however, who increase giving from €0.13 to €4.72 (p< .001, M.W. Rank sum test,). For charity B, its 'home' donors (located at B) who give €4.03 without and €6.90 with a match (p=0.034, M.W. Rank sum test,). Its 'away' donors (located at A) who also increase average giving from €0.93 without to €1.77 with a match, however, the effect does not reach the conventional levels of significance and is substantially smaller than for charity A (p=0.543, M.W. Rank Sum Test). We sum up these observations in the following result[15]

Result 2

In a setting of competition with spatial differentiation, a match-based fundraising instrument crowds-in giving to the matched charity i.e. there are higher average donations to the charity

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[15] The gist of result 2 is also borne out when focusing on the cumulative distribution function (see Figure A1.1) and particularly on the effects on giving at the extensive margin. Overall, this suggests that the match operates both at the intensive and extensive margin but also that the size of these effects differs depending on the kind of match ('home' or 'away') as well as location and charity specific idiosyncrasies. The 'away' match increases giving at both margins while the 'home' match mainly operates at the extensive margin.

applying the match. Relative to the baseline, crowding-in tends to be larger for the socially distant charity.
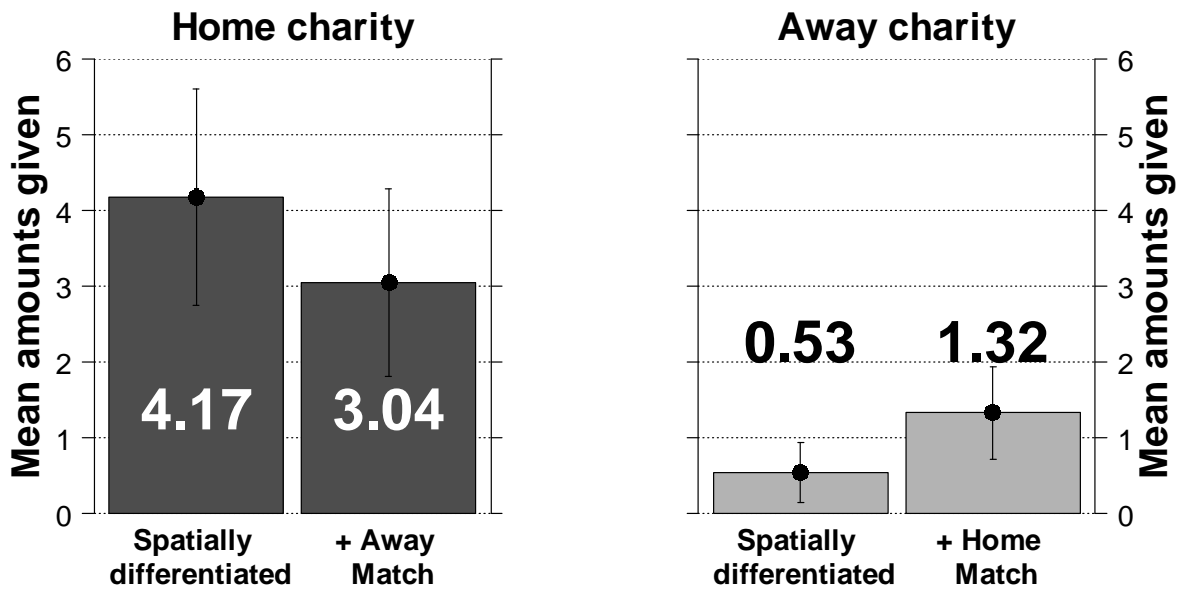
4.2.2. Inter-charity effects: spillovers

Do the match-based fundraising activities of one charity cannibalize giving to the other charity that also competes for donations? In other words, are there negative spillover effects of one charity's match to another, spatially differentiated charity that provides the same charitable good? This question is of particular interest for the public economist trying to understand the sector-wide implications of different fundraising strategies or for a spatially differentiated charity with multiple branches across several locations.

The spillover effects, i.e. the inter-charity effects of a match, can be derived from the experimental evidence reported in figure 3. As in the previous section, figure 3 displays the grand total spillover effect from applying a match to the competing charity, ignoring any location or charity specific effects. The left panel hence displays how the presence of a match for the 'away' charity (*T5: AwayMatch*) impacts giving to the (unmatched) 'home' charity compared to a situation without applying any matches for either charity (*T2: CityLabel*). Giving to the (unmatched) 'home' charity decreases insignificantly from 4.17 to 3.04 (-27 percent; p=0.56, M.W. Rank Sum Test). This is consistent with no spillover effects as well as weak negative spillover effects. For the 'away' charity, on the other hand, checkbook giving increases when the competing 'home' charity applies a match (*T4: HomeMatch*) compared to *T2: CityLabel* without a match. This positive spillover effect significantly increases checkbook giving from 0.53 to 1.32 (149 percent, p=0.037, M.W. Rank Sum Test). In sum, we find no evidence for negative spillover effects. To the contrary, we even find evidence that a match applied to subjects' socially close 'home' charity leads to additional donations flowing to the socially more distant 'away' charity i.e. a positive spillover effect.[16]

The results of a set of regression models, which we summarize in table 5, provide further evidence for the absence of a clear negative spillover effect. We follow the same estimation strategy as for table 3, now taking giving to the unmatched charity as the depended variable. Models 1 and 3 thus show results for the size and direction of the average spillover effect on giving to the unmatched charity. Offering a match on donations to the 'away' charity does reduce giving to the 'home' charity non-significantly by 1.13 (model 1). A match on

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[16] This result is even more surprising when considering that participants have a fixed budget for donations. This fixed budget should enhance negative spillover effects while limiting positive spillover effects.

Figure 3: Spillover effects on the unmatched charity

Note: Average checkbook donations to the unmatched charity in the absence (left bar) or presence of a match offered by the competing charity (right bar). The left panel shows this comparison for a match offered by the competing 'away' charity (T2 vs. T5) on giving to the 'home' charity and the right panel shows the same comparison for giving to the unmatched 'away' charity when a match is offered by the competing 'home' charity (T2 vs. T4). Confidence intervals at the 95%-level.

donations to the 'home' charity, however, significantly increases donations to the unmatched socially more distant 'away' charity by 0.79 (model 3). Investigating the results of a hurdle model again reveals subtle differences for the two possible margins of giving (models 2 and 4).

Conditional on giving at all, donations to the unmatched 'home' charity are significantly lower when the 'away' charity offers a match (i.e. a significant reduction and the intensive margin), while the propensity to give is unaffected (i.e. no extensive margin effect). For the unmatched 'away' charity this pattern reverses. Here, the overall positive spillover effect results from a significant increase in extensive margin giving, while giving at the intensive margin also increases but only by an insignificant amount. That is the unmatched charity benefits from the match of another charity mainly through (passively) attracting new donors.

This grand total effect carries through all further ways of disaggregating the data produced by our experiment summarized in table 6. As in table 4, the left entry in each cell reports the average checkbook donations in the spatially differentiated sector in the absence of a match (*T2: CityLabel*). In contrast to table 4, right-hand entries now report average checkbook donations to the charity when donations *to its competitor* are matched 1:1 (*T4: HomeMatch*

Table 5: Regression analysis spillover effects

	Home Charity			Away Charity		
	(1) **OLS** **Donation**	**(2)** **Hurdle** **Two stage**		**(3)** **OLS** **Donation**	**(4)** **Hurdle** **Two stage**	
		Extensive Margin	Intensive Margin		Extensive Margin	Intensive Margin
Match	-1.13 (0.953)	-0.03 (0.217)	-3.22** (1.538)	0.79** (0.372)	0.52** (0.258)	0.57 (0.864)
Constant	4.17*** (0.659)	-0.33** (0.150)	11.11*** (1.012)	0.53** (0.268)	-1.30*** (0.203)	5.49*** (0.728)
Obs.	140	140	140	150	150	150

Notes: Models (1) and (3) OLS regression coefficients, with standard errors in parentheses; models (2) and (4) coefficients of a hurdle model. $*p < 0.1$, $**p < 0.05$ and $***p < 0.01$.

and *T5: AwayMatch*). The absence of negative spillovers is robust to disaggregation by charity, reported in the rightmost column. Introducing a 1:1 match for charity B leaves overall checkbook giving to charity A roughly unchanged at €2.25 compared to €2.31 (M.W. Rank Sum Test; p=0.53). The same is true for charity B (€2.47 compared to €1.95, M.W. Rank Sum Test; p=0.85).

Spatial sorting by donors raises the question whether the absence of spillovers at more aggregated levels hides important heterogeneities at the spatially most disaggregated level. The question is answered by the core cells of table 6. There, we find that when charity B introduces a match, donations to charity A from its 'home' donors (located at A) do indeed decrease from an average of 4.31 to 3.29, but not in a statistically significant way (p=0.496, M.W. Rank Sum Test). Its 'away' donors (located at B), however, significantly increase giving to charity A from 0.13 to 1.39 (p=0.011, M.W. Rank Sum Test). Charity B's 'home' donors (located at B) give 4.03 when charity A is not and 2.81 when it is matched, a statistically insignificant decrease (p=0.880, M.W. Rank Sum Test). Its 'away' donors (located at A) donate 0.93 without and 1.27 with a match applied to charity A, a statistically insignificant increase (p=0.575, M.W. Rank Sum Test). The disaggregated level of analysis, therefore, adds nuance to the picture at more aggregated levels: While there is only weak evidence for a negative spillover on donations from socially close donors when the socially more distant charity is matched (*T5:AwayMatch*), there is stronger evidence for positive

Table 6: Spillover effects of a match in the competing location

		Donor Location		Average by charity
		A	**B**	
Charity Location	**A**	4.31; *3.29* (T2) (T5)	0.13; **1.39** (T2) (T4)	2.25; 2.31 (T2) (T4/T5)
	B	0.93; **1.27** (T2) (T4)	4.03; *2.81* (T2) (T5)	2.47; 1.95 (T2) (T4/T5)

Note: Cells report average donation in € per subject in each treatment. Left-hand entries in each cell indicate unmatched checkbook giving; right-hand entries indicate checkbook giving when donations to its competing charity were matched 1:1. For central cells, boldface indicates a match of donations to the 'home' charity (treatment 4), italics a match of donations to the 'away' charity (treatment 5).

spillovers on donations from socially distant donors when the socially close charity is matched ('home' match).[17]
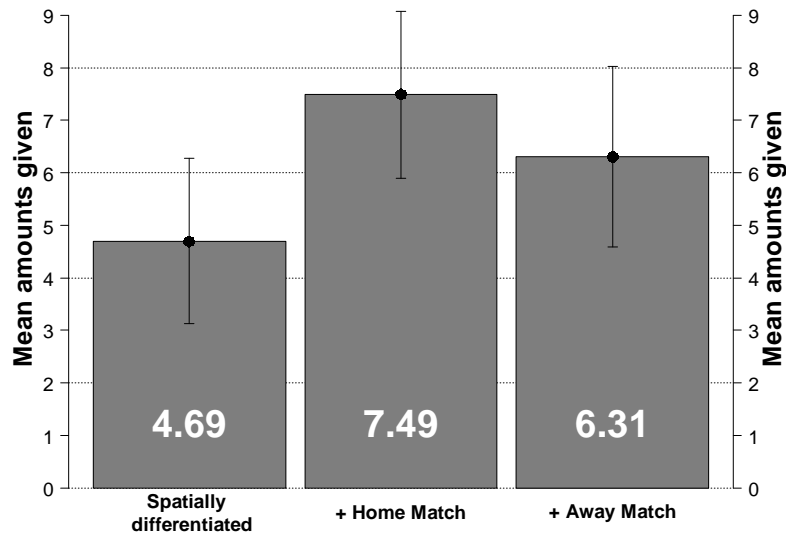
Result 3

In a setting of competition with spatial differentiation, there is no compelling evidence that a match-based fundraising instrument used by one charity results in negative spillovers on giving to the unmatched charity.

4.2.3.   Sector-wide charitable giving

Section 4.2.1 has already concluded that in the absence of matches to donations, the charities jointly do not raise more funding in a spatially differentiated market than in an undifferentiated one. Spatial differentiation simply leads to sorting among donors. We complement this discussion of the main results with a look at additional results at the 'sector' level. This involves comparing total giving to both spatially differentiated charities in *T2: CityLabel* with total giving in *T4: HomeMatch*, and with total giving in *T5: AwayMatch*. This perspective thus complements the analysis of individual crowding (see Section 4.2.1) and spillover effects (see Section 4.2.2) by examining the effectiveness and efficacy of match-based fundraising by one charity for total giving to the sector as a whole.

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[17] The extensive margin decision whether to donate or not follows similar patterns like the average results reported in result 3. We summarize and discuss these results in appendix A1.1.

Figure 4: Total donations

Note: Average total checkbook donations to both charities in a spatially differentiated sector in the absence (T2: left bar) or the presence of a home match (T4: middle bar) or an 'away' match (T5: right bar). Confidence intervals at the 95%-level.

Figure 4 displays the average of total charitable donations made to both charities by each donor across the three main treatment conditions. As expected per result 2, the positive crowding-in effect on the matched charity in combination with the absence of significant negative spillovers on the unmatched charity (result 3) raises total donations to both charities above the baseline of a spatially differentiated charitable sector. However, for the unmatched 'away' charity we do not only observe the absence of a negative spillover effect, but rather a positive spillover effect when the 'home' charity receives a match. In sum, this significantly increases total donations from 4.69 to 7.49 in case the match targets charities' 'home' donors (p=0.007, M.W. Rank Sum Test). In case the match targets charities' 'away' donors, it also increases total giving from 4.69 to 6.31, this increase, however, does not reach the conventional levels of significance (p=0.114, M.W. Rank Sum Test). These observations are summarized as result 4.

Result 4:

In a setting of competition with spatial differentiation, total charitable donations made to both charities are significantly higher in the presences of a 'home' match. Total donations are also higher under an 'away' match, but not significantly so.

From the vantage point of a spatially differentiated charity with multiple branches, result 4 implies that match-based fundraising targeting charities' socially close 'home' donors raises its charitable income by the highest amount. Donors respond to such fundraising activities by giving more to the matched 'home' charity (result 2), but also by giving more to the unmatched 'away' charity (result 3). From the perspective of the public economist, none of the matching schemes under investigation can be called efficacious in the sense that total checkbook giving more than doubles through the presence of the 1:1 match.

4.2.4. Generalizing results to a setting without spatial differentiation

Result 2 adds to those studies that find a crowding-in effect of matching donations (e.g. Karlan and List, 2007; Gneezy et al., 2014; Huck et al., 2015). Yet, the disaggregated evidence also adds nuance by raising the possibility that in the spatially differentiated charity sector, crowding-in increases, in relative terms, with social distance. Result 3, on the other hand, shows that despite high substitutability between the competing charities, there is no clear evidence of negative spillovers from the matched fundraising campaign of one charity to the donations given to its unmatched competitor. Again, at the spatially disaggregated level, evidence suggests that spillovers vary by social distance: Socially distant donors responded positively to the 'away' match, thus compensating for some negative spillovers affecting donations from socially close donors. The potential role of social distance in crowding and spillover effects raises the question whether result 3 is specific to a competitive setting of spatial differentiation, in which donors' 'home bias' can play out, or whether it generalizes to settings without spatial differentiation, such as in *T1: Neutral*. To answer this question, we conducted a control treatment (*T3: NeutralMatch*). This shares with treatment *T1:Neutral* a setting without spatial differentiation, but differs from it by featuring one charity (A or B) for which donations are matched 1:1 while those for its competitor are not.

As a corollary to result 2, we examine crowding first. Comparing *T1:Neutral* and *T3: NeutralMatch*, the evidence for crowding-in is weak for charity A (€2.19 vs. €3.88, p=0.093, M.W. Rank sum test) and even weaker for charity B (€2.25 vs. €3.38, p=0.262, M.W. Rank Sum Test). The effects are weak at all levels of aggregation, including when further disaggregating by donor location (p>0.25 for all four possible comparisons, M.W. Rank Sum Test). As in result 2, statistically significant evidence for crowding-out is absent, but so is the clear evidence for crowding-in that was observed in a spatially differentiated market.

In contrast to result 3, a comparison of *T1: Neutral* and *T3: NeutralMatch* finds no strong

evidence for either negative or positive spillover effects from match-based fundraising of one charity to unmatched donations to its competitor. This holds true for each charity (charity A, €2.19 vs. €2.67, p=0.69; charity B, €2.25 vs. €1.74, p=0.71, M.W. Rank Sum Test) and when further disaggregating by donor location (p>0.2 for all four possible comparisons, M.W. Rank Sum Test).[18] In a spatially undifferentiated market, we therefore do not find similar patterns of positive spillovers observed in a spatially differentiated market.

Finally, in contrast to result 4, total donations in a spatially undifferentiated charity sector are not significantly higher when donations to one charity are matched. Comparing total giving to both charities in *T1: Neutral* with total giving in *T3: NeutralMatch*. In *T3: NeutralMatch*, total donations only slightly increase from 4.44 to 5.85 in the presence of a matched charity (p-value=0.169, M.W. Rank Sum Test).

In sum, under spatially undifferentiated competition between charities offering the same charitable good, clear patterns of fundraising activities on crowding, spillovers and total donations are difficult to detect. Spatially differentiated competition makes patterns detectable because donors' preferences for charity location can be said to affect the direction and size of crowding effects and spillovers effects.

5. Discussion and conclusion

Given the major advances in the 'science of philanthropy' that have given fundraising activities a new evidence base, a natural question for lead donors, charitable organizations, and the public economist is how the applications of these insights play out in richer market structures in the charitable sector. We introduce spatially differentiated competition, a commonly encountered market structure in the charitable sector, into the literature, and connect it on the theoretical side with the concept of social distance between charities and their donors. To make headway in the absence of tight theoretical predictions, we partner with two foodbanks in neighboring cities to run a field experiment that investigates the effects of matching in a charitable sector in which there is spatial differentiation.

As predicted by theory, we establish as a first result that donors display 'home bias' that leads to spatial sorting. Against the background of this 'home bias', the match-based fundraising drive by one charity results, at the intra-charity level, in crowding-in effects, but fails to

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[18] There are also no spill-over effects on the propensity receive a donation, neither for charity A (0.25 vs. 0.29, p-value 0.740, Chi2 Test) nor for charity B (0.25 vs. 0.41, p-value 0.104, Chi2 Test).

generate negative spillovers at the inter-charity level. Matching the donations of 'away' donors leads to particularly strong crowding-in effects while matching the donations of 'home' donors leads to positive spillover effects on donations of the 'away' charity. On aggregate, a 'home' match is most effective in raising donation income. One result, which is fully in line with the existing literature, is that even when optimally configured for a spatially sorted donor landscape, matching still fails the efficacy test.

Should further studies confirm these results, they have important implications for the different stakeholders in the 'science of philanthropy'. For a lead donor, they suggest that his matching strategy does not have to be overly sensitive to the social distance between potential donors and his preferred charity. For a spatially differentiated charity with branches at multiple locations, the results suggest that matching 'home' donations will maximize their overall charitable income. To the public economist, who is interested in the provision of public goods, they suggest that matching in a spatially differentiated sector – just as its counterpart in a spatially non-differentiated sector – is not efficacious despite harnessing social identity, raising questions as to the popularity of matching in the fundraiser trade. In our experiment, competition cannot explain its popularity.

Our theoretical considerations unequivocally predict that spatial differentiation will lead to spatial sorting if social distance affects either the warm-glow or altruistic component of a donor's utility function. This prediction finds strong support in the observed donor behavior in our experiment. To further refine our deliberately general theoretical considerations, a future model of charitable giving could specify more precisely how social distance could enter the utility function and interact with other determinants of giving such as the price of giving and the substitutability between different charitable goods as well as between charitable goods and consumption. Our experiment provides at least three stylized facts that such future theory would need to be able to rationalize. First, we find crowding-in effects that depend, at least in their strength, on social distance. Second, for both crowding and spillover effects, we find subtle differences in extensive or intensive margin giving depending on whether the match applies to 'home' or 'away' donations. Third, we find positive spillovers from giving to the matched 'home' charity to the unmatched 'away' charity. More sophisticated experimental designs can narrow down the number of candidate models. For instance, a design that switches of different components of the utility function could provide insights into which of its components are affected by the presence of spatial differentiation (Crumpler and Grossman, 2008). We leave such possible extensions for future research.

6. Literature

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7. Supplementary material

A1 Additional Results

A1.0 Sample characteristics and randomization

Table A1: Sample characteristics

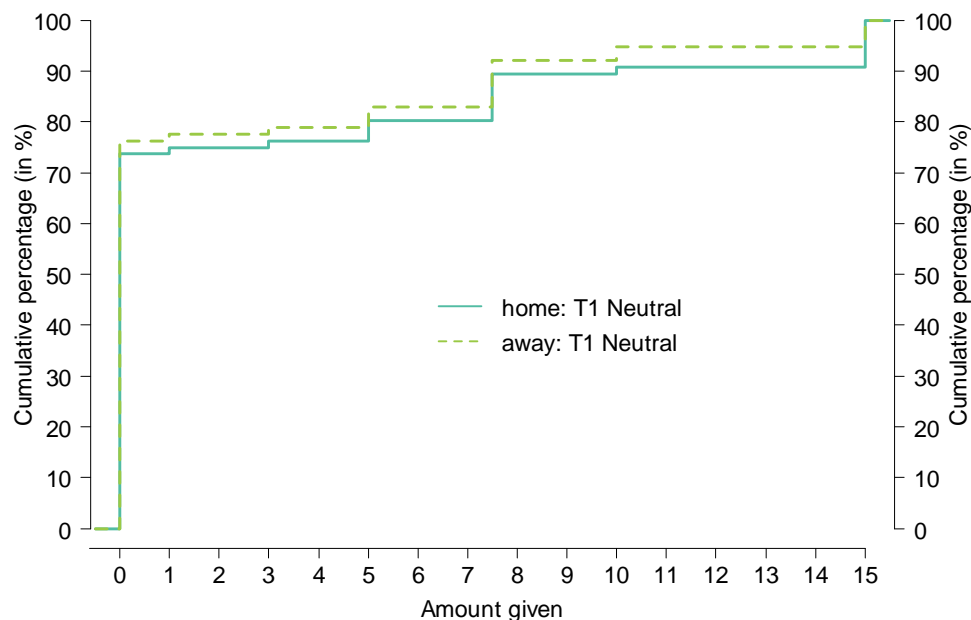|	**Total**	**Heidelberg**	**Mannheim**
Subjects (in #)	347	168	179
Age (in years)	39.65	37.09	42.06
Female (in %)	41.50	45.24	37.99
Income (in EUR)	2745.40	2737.20	2752.94
Education (in years)	15.20	15.58	14.85

Table A2: Sample characteristics by treatment

	No label & no match	Label & no match	No Label & match	Label & home match	Label & 'away' match
Subjects (in #)	76	73	53	78	67
Age (in years)	37.02	40.14	39.85	40.64	40.81
Female (in %)	40.79	39.73	45.28	38.46	44.78
Income (in EUR)	2961.81	2728.57	2500*	2606.67	2866.94
Education (in years)	15.70	15.23	15.02	15.03	14.96

A1.1 Cumulative distribution of donations

Spatially undifferentiated market structure – Figure A1 shows the cumulative distribution functions (CDFs) for giving to the home and the away charity under a spatially undifferentiated market structure. Under this market structure, 33 percent of the participants give either to their 'home' or their 'away' charity. The extensive margin of giving can be inferred from the intercept of the CDFs depicted separately for the home (solid turquoise line) and the away (dashed green line) charity: 74 percent do not give to the home charity, and almost the same share (76 percent) does not give to the away charity. Each charity, thus, receives donations from approximately 25 percent of the participants. For these positive donations, the two CDFs trace out the respective intensive margins of giving. As for the extensive margin, the two CDFs overlap almost perfectly. For instance, the proportion of participants contributing less than or equal to €7 to the home or the away charity amounts to 80 and 83 percent, respectively. The graphical representation reemphasizes our observation stated in the main text: The patterns of giving to the home and the away charity are statistically indistinguishable under a spatially undifferentiated market structure.

Figure A1: Cumulative distribution functions of donations under a spatially undifferentiated market structure

Note: The CDFs plot the probability that participants donate less than or equal to a certain amount. The dashed green line shows the CDF for the away charity, the turquoise solid line shows the CDF for the home charity. The share of non-giving subjects (extensive margin) is depicted by the intercept (i.e. zero donations), the intensive margin between donations of 1 and 15.

Sorting, crowding, and spillover effects – Figure A2 plots the patterns of giving, thereby highlighting the average sorting (Panel A), crowding (Panel B), and spillover effects (Panel C) we report in the main text of the paper. These effects can be recognized by the (vertical) distance between the CDFs in the respective treatment conditions (T2, T4, and T5) and the CDFs in the corresponding baseline conditions (T1 and T2). Extensive margin effects are depicted in the resulting graphs as follows: A positive extensive margin effect of the treatment results in a negative intercept (i.e. less non-donors compared to the corresponding baseline condition). A negative extensive margin effect of the treatment results in a positive intercept (i.e. more non-donors compared to the corresponding baseline condition). Further inspecting the shape of the effect plots sheds more light at changes in donation patterns at the intensive margin. Here, a positive treatment effect is visually represented by a curve in the negative domain (a higher frequency of donations) and a negative treatment effect by a curve in the positive domain (a lower frequency of donations).

In Panel A of Figure A2, the negative intercept for the home charity (dashed brown line) indicates that spatial differentiation increases donations at the extensive margin (sorting effect). The frequency of zero donations to the home charity decreases by 10 percentage points. At the intensive margin, the flat curve for home donations indicates that most of this change occurs for high donation levels. The frequency of €15 donations, for instance, increases from 9 percent in T1 Neutral to 21 percent T2 City Label. For the away charity, the extensive margin effect is in the opposite direction (dash-dot blue line): There are fewer donors (such that the intercept is positive) and the frequency to donate nothing increases by 13 percentage points from 76 percent in T1 Neutral to 89 percent in T2 City Label. The shape of the curve furthermore shows that the differences at the intensive margin occur as a shift from relative large donations to relatively small donations between treatment and control. The proportion of participants giving €7 or less, for instance, to the away charity in T2 City Label is 16 percentage points larger.

Panel B in Figure A2 depicts the crowding effect at the extensive margin, i.e. additional donors that the 'home' charity (dashed purple line) or the 'away' charity (dash-dot green line) can attract by offering a match relative to a baseline where no match is offered. We find a significant increase in the propensity to give to the matched charity. The (negative) intercept in Panel B shows that the relative size of this effect is comparable for 'home' and 'away' donations. For the 'home' charity the propensity to receive a donation increases by 23 percentage points (37 percent T2 City Label vs 60 percent T4 Home Match) and for the

'away' charity by 28 percentage points (10 percent in T2 City Label vs. 38 percent in T5 Away Match).[19] These results correspond to the extensive margin effects shown in models 2 and 4 of Table 3 in the main text. The shape of the effect plots show an increase in the frequency of relatively low and medium donations, an effect that is especially pronounced for the home charity.

Panel C in Figure A2 illustrates the size of spillover effects at the extensive margin, i.e. the propensity to give to the unmatched charity when the competing charity offers a match. The solid brown line depicts differences in donation patterns between the baseline (T2 Neutral) and the treatment, where the 'home' charity faces a competing 'away' charity offering a match (T5 Away Match). The dashed gray line depicts the corresponding pattern for the 'away' charity. For the 'home' charity, there is no evidence for a negative spillover effect at the extensive margin; the intercept is virtually zero and thus the propensity to give to the non-matched home charity is statistically indistinguishable between T2 Neutral and T5 Away Match. When the home charity is matched, for the non-matched 'away' charity, the propensity of receiving zero donations (dashed grey line) decreases by 12 percentage points from 89% in T2 Neutral to 78% in T5 Away Match. In other words, the number of 'away' donors almost doubles when the competing 'home' charity offers a match (T4), compared to a situation without matching.[20] Investigating the shape of both curves further reaffirms regression results discussed in 4.2.2. For the home charity there are negative spillover effects at the intensive margin as illustrated by the increasing shape of the effect plot, especially the frequency of higher donations is decreasing. For the away charity there are only small and marginally positive changes at the intensive margin, resulting in a higher frequency of small donation amounts, while there is a larger extensive margin effect.
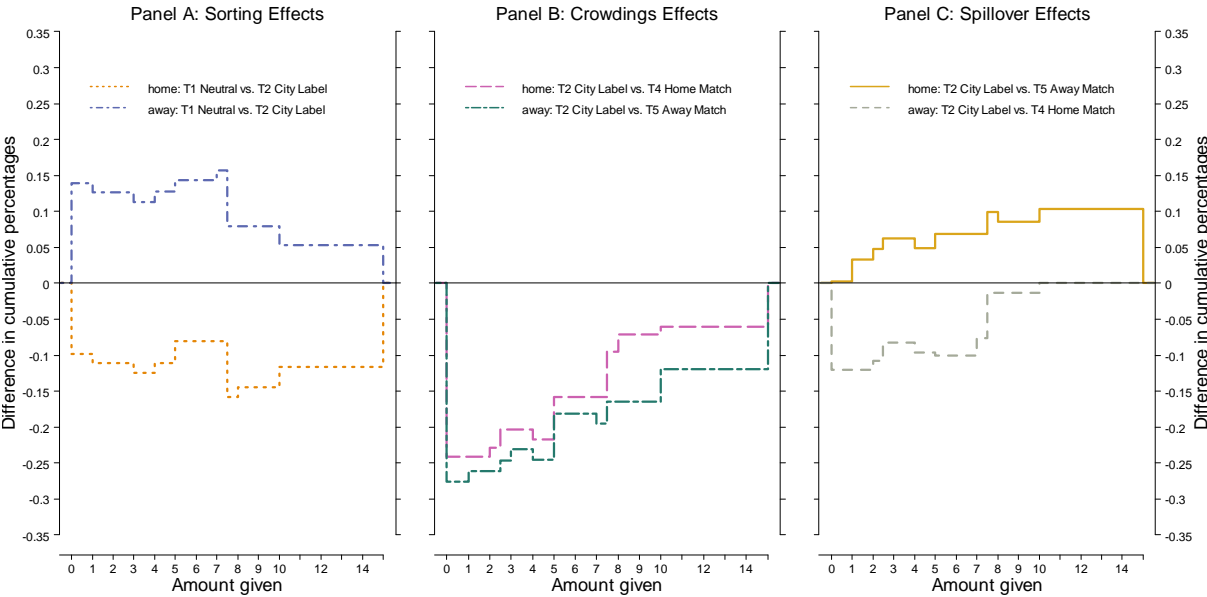
Figure A2 graphically reemphasizes the two central econometric results. We find consistent evidence for positive crowding effects at the extensive margin that are in line with previous

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[19] Disaggregating further to the charity level, we continue to find that the presence of a match significantly increases the propensity to receive a donation for both charity A (Chi2 Test, p<0.001) and charity B (Chi2 Test, p<0.037) independent from the donor location. On the lowest level of aggregation, results are slightly more nuanced. For charity A, applying a match increases the propensity to receive a donation from donors located in A insignificantly (Chi2 Test, p=0.116) and from donors located in B significantly (Chi2 Test, p<0.001). Results for charity B are similar in direction, but not in size. Here, a match insignificantly increases the flow of donations from A donors (Chi2 Test, p=0.811) and significantly from B donors (Chi2, p=0.013).

[20] Disaggregating this analysis by charity type, we neither find evidence for negative spillover effects for charity A (Chi2, p= 0.408) nor for charity B (Chi2, p= 0.727). At the lowest level of aggregation, we account for both charity and donor location. Mirroring our intensive margin results, for charity A we find no negative spillovers on the propensity to receive donations from A donors (Chi2, p=0.53) and positive spillovers on the propensity to receive donations from B donors (Chi2, p= 0.01). Likewise, for charity B, there is neither evidence for negative spillovers on the propensity to receive donations for A donors (Chi2, p= 0.82) nor such evidence for B donors (Chi2, p= 0.66).

findings in the literature (Karlan and List 2007). Through matching donations, charities

Figure A2 Treatment effects on the cumulative distribution of donations

Note: Between-treatment differences in the CDFs for giving to the home and the away charity, separately for sorting (Panel A), crowding (Panel B), and spillover effects (Panel C). Graphs show the treatment effects on the probability to participants donate less or equal to a certain amount. Negative intercept effects represent positive extensive margin effects.

increase the size of their donor base. Spillover effects at the extensive margin are either absent (home charity) or positive (away charity). At the intensive margin, treatment effects are more nuanced and depend on the type of effect under investigation. Sorting effects occur at both the extensive, and to a lower degree at the intensive margin. We find evidence for crowding-in at the intensive margin that is present for the home charity (dashed purple line) and more pronounced for the away charity (dash-dot green line). Spillover, effects operate at the extensive margin for the away charity and at the intensive margin for the home charity.

A1.2 Additional Regression Results: Crowding Effects

Table A3: Regression results crowding effect with covariates

	Home Charity			Away Charity		
	(1)	**(2)**		**(3)**	**(4)**	
	OLS	**Hurdle**		**OLS**	**Hurdle**	
		Two stage			Two stage	
	Donation	Extensive Margin	Intensive Margin	Donation	Extensive Margin	Intensive Margin
MATCH (1=Yes)	2.16** (0.999)	0.66*** (0.217)	-1.40 (1.047)	2.78*** (0.651)	1.13*** (0.286)	4.67 (3.036)
AGE	0.06* (0.035)	-0.00 (0.007)	0.13*** (0.036)	-0.02 (0.024)	-0.02** (0.012)	0.13 (0.098)
FEMALE	0.41 (1.04)	0.13 (0.224)	0.25 (1.049)	0.47 (0.677)	0.31 (0.279)	1.24 (2.07)
INCOME	0.00** (0.000)	0.00** (0.000)	0.00 (0.000)	0.00 (0.000)	0.00 (0.000)	0.00 (0.000)
EDUCATION	-0.27 (0.200)	-0.10** (0.045)	0.21 (0.192)	0.130 (0.124)	0.05 (0.053)	0.07 (0.485)
CITY FIXED EFFECT	YES	YES	YES	YES	YES	YES
CONSTANT	2.67 (3.422)	0.548 (0.746)	1.33 (3.169)	-1.79 (2.191)	-1.63* (0.916)	-4.30 (7.975)
Obs.	145	145	145	131	131	131

Notes: Models (1) and (3) OLS regression coefficients, with standard errors in parentheses; models (2) and (4) coefficients of a hurdle model. $*p < 0.1$, $**p < 0.05$ and $***p < 0.01$.

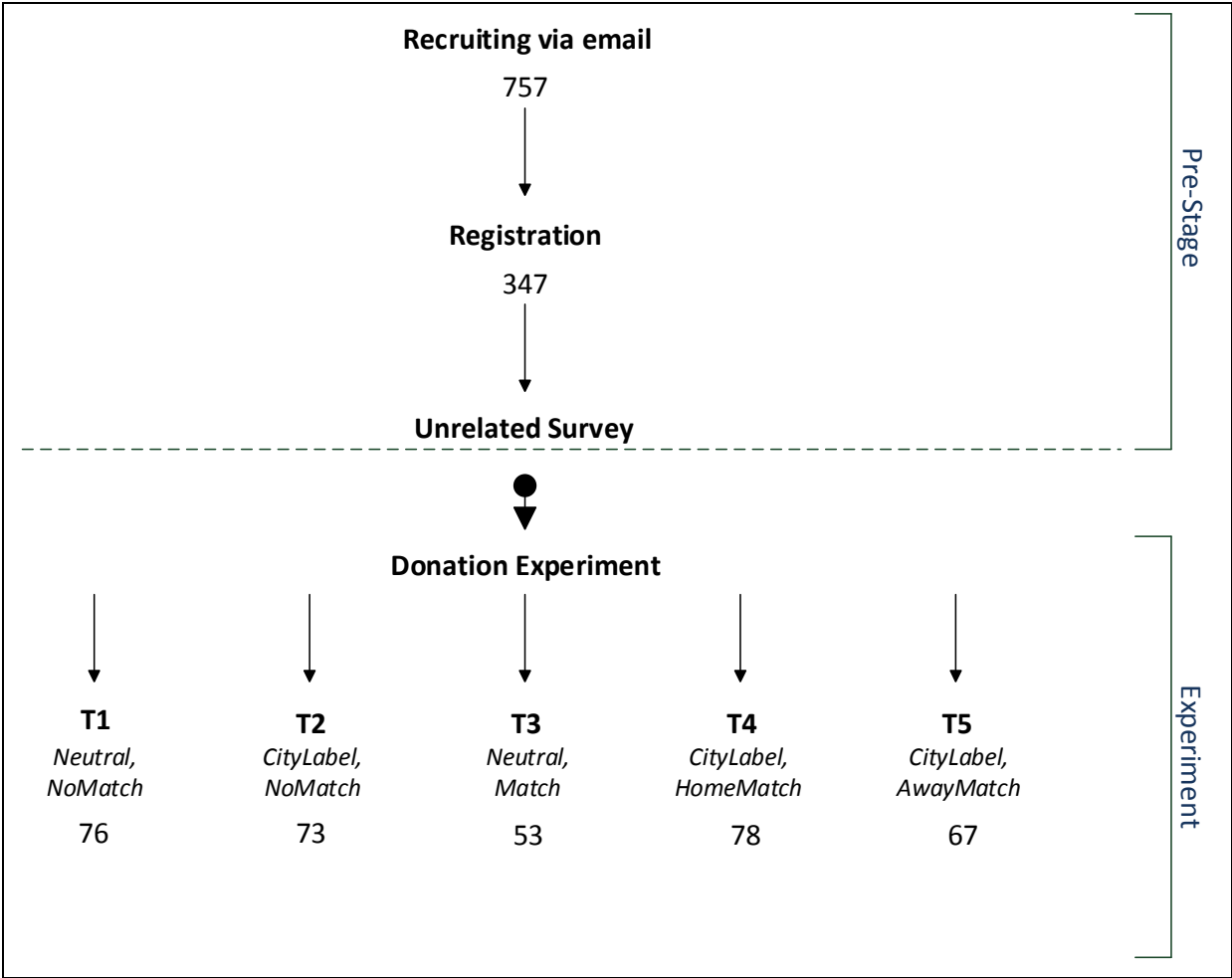## A1.3 Additional Regression Results: Spillover Effects

Table A4: Regression results spillover effect with covariates

	Home Charity			Away Charity		
	(1)	**(2)**		**(3)**	**(4)**	
	OLS	**Hurdle**		**OLS**	**Hurdle**	
	Donation	Two stage		Donation	Two stage	
		Extensive	Intensive		Extensive	Intensive
		Margin	Margin		Margin	Margin
MATCH (1=Yes)	-1.16	-0.02	-2.20*	0.77**	0.61**	-0.32
	(1.001)	(0.225)	(1.184)	(0.368)	(0.285)	(1.213)
AGE	0.04	-0.01	0.18***	-0.02*	-0.017	-0.04
	(0.036)	(0.01)	(0.042)	(0.0129)	(0.011)	(0.044)
FEMALE	1.26	0.26	0.85	0.10	0.17	-1.08
	(1.041)	(0.233)	(1.200)	(0.383)	(0.279)	(0.937)
INCOME	0.00	0.00	0.00	0.00	0.00	0.00
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
EDUCATION	-0.06	-0.01	-0.02	-0.19**	-0.11**	-0.13
	(0.189)	(0.042)	(0.234)	(0.074)	(0.052)	(0.137)
CITY FIXED EFFECT	YES	YES	YES	YES	YES	YES
CONSTANT	1.30	-0.15	1.34	3.96***	0.69	9.74***
	(3.295)	(0.738)	(3.794)	(1.288)	(0.927)	(2.926)
Obs.	132	132	132	144	144	144

Notes: Models (1) and (3) OLS regression coefficients, with standard errors in parentheses; models (2) and (4) coefficients of a hurdle model. $*p < 0.1$, $**p < 0.05$ and $***p < 0.01$.

A2: Design, Instructions and Procedures

Figure A1: Schematic diagram experimental procedures

Invitation email (translated from German

Dear Sir or Madam,

In June 2015, you were invited to a scientific study by Heidelberg University and the Centre for European Economic Research (ZEW) in Mannheim. Back then you stated your interest in other studies and asked us to contact you via email if a new study was to be carried out.

This year the Ruprecht-Karls-University of Heidelberg, the Centre for European Economic Research (ZEW) in Mannheim and Bayreuth University are also carrying out a scientific study. It includes a survey on the topics "speed limit in cities" and "citizen participation in political decision-making". The research project is funded by the Federal Ministry of Education and Research.

You can support our research project by participating in a 15-minute online survey. If you complete the entire questionnaire, you will receive a **remuneration for your participation** of **15 euros** about 4 weeks after the survey. You will receive your payment in the form of an Edenred voucher as last time. This payment method enables us to transfer your remuneration to you without you having to state your account information. You can redeem your voucher in several local and online shops (e.g. Galeria Kaufhof, Karstadt, Media Markt, Saturn).

No special previous knowledge is necessary. Please note that only one person per household is allowed to participate in the study and that this person needs to be of age.

You can immediately start with the survey. To do so, please click on the following link and register on the first screen of the survey website by using your personal access key:

www.zew.de/umfrage2017

Your personal access key (valid until 20.03.2017) is: <<**CODE**>>

We are happy to answer your questions. Please call us at 0621/1235-369 or write to us at umfrage@zew.de.

We are looking forward to your participation in this survey, which will surely also be interesting for you. Thank you very much for supporting our research project.

Prof. Timo Goeschl, Ph.D.
Research Centre for Environmental Economics
Alfred-Weber-Institute for Economics
Ruprecht-Karls-University Heidelberg

Dr. Martin Kesternich
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Environmental and Resource Economics, Environmental Management
Centre for European Economic Research

Prof. Dr. Rudolf Schüßler
Faculty of Cultural Studies
Professor - Ethics
Bayreuth University

If you are not interested in participating in any other studies, please send an email to umfrage@zew.de.

Instructions, questionnaire, and experiment (translated from the German original)

- Screen 1 -

Welcome to this study!

Dear participant,

Thank you for your interest! In a few moments, the survey will start. Firstly, please find some central information regarding this study:

- Taking part in this study takes about 15 minutes on average
- The study consists of one questionnaire which will be shown on several screens consecutively
- After completing the questionnaire, you will receive EUR 15.

Please note: Please use the provided buttons to navigate through the different screens. Please **do not** use the buttons of your browser as it might cause inaccurate results or cancel the study.

Please click "next" to learn more about your remuneration.

- Screen 2 -

Information on content and proceedings of this study

Who are the directors of this study?

This study represents a collaboration between the University of Heidelberg, the Centre for European Economic Research (ZEW) in Mannheim and the University of Bayreuth. The University of Heidelberg is a public institution for education and research of the German federal state of Baden-Württemberg. The ZEW is a non-profit research centre and member of the Leibnitz Association. The University of Bayreuth is a public institution for education and research of the German federal state of Bavaria. Our research projects are funded by the Federal Ministry of Education and Research.

What happens with my data?

We use your data exclusively for scientific purposes and evaluate them in an anonymous form. Your personal details will exclusively be used to transfer your remuneration. We will neither associate them with your specifications made in this study nor disclose them to a third party.

How does the amount of remuneration come about?

You will receive EUR 15 upon completing the questionnaire.

- Screen 3 -

The questionnaire starts on the next screen. Please carefully read through all the questions.

- Questionnaire screen 4 to screen 16 -

The questionnaire is unrelated to the experiment. The questionnaire items can be supplied upon request.

- Screen 17 -

The University of Heidelberg, the Centre for European Economic Research (ZEW) in Mannheim, and the University of Bayreuth would like to thank you for participating in this study which has been funded by the Federal Ministry of Education and Research. Please click "next" in order to conclude this questionnaire.

- Screen 18 -

Treatments

- Screen 19 -

For your participation in this scientific study, you will receive EUR 15. By default, we will send you your remuneration by mail in the form of an Edenred shopping voucher. On the suggestion of participants of former studies, we will offer you the option to donate your remuneration (fully or partly) to our partner charities.

_____

[T1 Neutral, NoMatch:]

the Caritas Food Bank Shop and the (mobile) foodbank of the German Red Cross. Both options are charitable organizations which offer quality food products which are no longer used in the economic process in the Rhine-Neckar Region to those in need.

[T2 CityLabel, NoMatch:]

the Tafel Mannheim e.V. and the Tafel Heidelberg e.V. Both options are charitable organizations which offer quality food products which are no longer used in the economic process in Mannheim or Heidelberg to those in need. For more information on these organizations, click here: Tafel Mannheim, Tafel Heidelberg.

[T3 Neutral, Match:]

the Caritas Food Bank Shop and the (mobile) foodbank of the German Red Cross. Both options are charitable organizations which offer quality food products which are no longer used in the economic process in the Rhine-Neckar Region to those in need.

At the moment, there is a campaign which enables us to multiply your donation made to the (mobile) foodbank of the German Red Cross. To each euro donated to the (mobile) foodbank of the German Red Cross, there will be one extra euro added. So every euro the (mobile) foodbank of the German Red Cross receives will eventually result in two euros.

[T4 CityLabel, HomeMatch or T5 CityLabel, AwayMatch:]

the Tafel Mannheim e.V. and the Tafel Heidelberg e.V. Both options are charitable organizations which offer quality food products which are no longer used in the economic process in Mannheim or Heidelberg to those in need. For more information on these organizations, click here: Tafel Mannheim, Tafel Heidelberg.

At the moment, there is a campaign which enables us to multiply your donation made to [Tafel Mannheim] [Tafel Heidelberg]. To each euro donated to [Tafel Mannheim] [Tafel Heidelberg], there will be one extra euro added. So every euro [Tafel Mannheim] [Tafel Heidelberg] receives will eventually result in two euros.

_____

If you want to make use of this opportunity, please specify below the share of your remuneration (EUR 15) you would like to donate respectively. Please note that the values entered will be rounded up one digit after the decimal point.

If you chose not to make use of this opportunity, please confirm the following:

Button: Thank you, I do not want to donate.

- Screen 20 (Overview of donations) -

Please check your information listed below.

[NO DONATION]

Your personal remuneration:

You receive EUR 15 in the form of an Edenred shopping voucher.

[MAXIMUM DONATION]

You have donated your whole remuneration.

Overview of donations:

Your donation to *[Charitable organization 1]*: EUR *[xx]*

Your donation to *[Charitable organization 2]*: EUR *[xx]*

[PARTIAL DONATION]

Overview of donations:

Your donation to *[Charitable organization 1]*: EUR *[xx]*

Your donation to *[Charitable organization 2]*: EUR *[xx]*

[T3, T4, T5] Due to the campaign, *[Charitable organization x]* additionally receives:

You receive EUR *[xx]* in the form of an Edenred shopping voucher

If you agree with this, please choose „conclude study". You will then see the final screen. If you want to modify any specification, please choose „edit". You will reach a screen on which you can modify your initial specifications.

- Correction –

Screen 19 and Screen 20 are repeated if subject chooses "edit".

- Screen 21 -

If you have already taken part in a former study, you have received an Edenred shopping voucher. We can recharge your voucher card with the remuneration of today. To do so, we solely need your voucher card number which can be found on the front side of your voucher card. If your card is not at hand, we can send you a new one by mail. For this, please enter your address again. If you do have your voucher, please enter your voucher card number so that we can recharge it with EUR *[xx]*.

If you do not have hold of your Edenred voucher or if this is your first time taking part in this kind of study, please enter your address for us to send you a new voucher card. Note: We will use your address solely for sending the voucher and will not disclose it to a third party. Furthermore, your address will not be linked to your specifications made in this questionnaire. If you have any further questions regarding this procedure, you can refer to the study directors by phone (+49 621/1235-369) or by email (umfrage@zew.de).

- Screen 22 -

Thank you! Your information has been saved.

//

IMPRINT