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On the channels of pro-social behavior: Evidence from a natural field experiment

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On the Channels of Pro-Social Behavior

Evidence from a natural field experiment*

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Abstract

We conduct a natural field experiment on direct and indirect transfer mechanisms for small donations. Charitable contributions are significantly higher if made indirectly, i.e. if they are tied to the purchase of a good sold at a premium, than if they are made directly. Donations are significantly higher under both transfer mechanisms if people are given a suggested reference donation.

JEL codes: D64, C93, H41

Keywords: Tied versus untied transfers, charitable donations, charity, willingness to give, pro social behavior

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1 Introduction

Charitable donations are frequently linked to the purchase of a good that may be unrelated to the charitable cause. For instance, 10 % of the price of books purchased from “Amazon” through the “Food for Life Global” (FFL) website will go to that charity. “Heartfelt Charity Cards” gives 10% of their greeting cards sales to the charity chosen by the customer. The German Mail offers ‘charity stamps’ at a premium which goes to charity. Other examples include a brewery that remits 1 Euro from every sale of a crate of beer to the World Wide Fund For Nature (WWF) or festivals where a part of the proceeds from food, beverage or ticket sales are given to charitable causes.¹ Why do charities engage in these activities rather than seeking donations directly through remittances, donation boxes etc.? This indirect mode of mobilizing resources is potentially more costly as it requires to organize or cooperate with a different economic activity, which serves as a “donation vehicle”. Could the indirect mechanism, though more costly, be more effective in mobilizing small charitable donations? Could the channel through which people give matter *as such*?

This is the concern of the paper. We report on a natural field experiment, in which we test whether the propensity to give is different if the transfer is linked to the purchase of a good rather than if made directly through a donation box. Thus we test for the different effectiveness of the direct and indirect transfer mechanism to mobilize resources through small donations.

A growing literature inquires into the determinants of charitable givings and contributions to public goods (see Andreoni (2008) and Bekkers and Wiepking (2007)). One strand of the literature analyzes empirically the socio-economic factors such as gender, income, age, religion etc. (for a survey cf. Schokkaert (2006)). Another, less developed strand looks at the situational determinants. In dictator games, which are similar to situations of charitable

¹Cf. http://www.ffl.org/ffl_donation_business.php, <http://www.charitycards.com>, <http://www.wohlfahrtsmarken.de>, <http://www.krombacher.de/regenwald/>.

giving, and in public good games it has been shown that giving is lower the larger the social distance to and the degree of anonymity of the recipient (inter alia, Charness and Gneezy (2008), Brañas-Garza (2007), Brañas-Garza and Espinosa (2006), Hoffman et al. (1996)). Brañas-Garza (2006) shows that giving increases with the neediness of the recipient and is higher if given as medicine rather than as money. Individuals tend to give more if their giving/contribution is observable (Andreoni and Petrie (2004) and Rege and Telle (2004) for public good laboratory experiments, List et al. (2004) for a laboratory experiment and Soetevent (2005) for a natural experiment on charitable giving). Conformity have been shown to matter for contributions. Suggested or stated ‘normal’ donations affect both the probability and the amount of donations (Alpizar et al. (2008), Shang and Croson (in press), and Desmet and Feinberg (2003)).

A special situation for charitable giving is the gift exchange, in which the person collecting contributions first makes a small gift to the potential donor and then asks for a donation. Empirical evidence is mixed – while Falk (2007), Edlund et al. (2007) and Harris et al. (1973) find a positive impact on the donations, Alpizar et al. (2008) observe a higher probability of giving, but a lower amount, thereby making the gift not worthwhile. Chen et al. (2006) find no effect. Briers et al. (2007) combine a gift exchange game with reference prices and find that donations go up if the reference price for the token gift is not too high.

The paper that comes closest to our approach, but differs considerably in focus and method is Holmes et al. (2002). They solicit contributions to charity from 100 campus students. In two control treatments they ask for donations of at least one and three dollars, respectively. In the second set of treatments they sell candles at three dollars with one dollar going to charity. The price of the candle is advertised as (i) a ‘fair’ price (i.e. allegedly similar to most stores in the area), (ii) a ‘bargain price’ (i.e. allegedly one dollar cheaper than in the stores) and (iii) an ‘altruist’s price’ (i.e. allegedly one dollar higher than in the stores) and the recipients of the donation (emo-

tionally disturbed children) are portrayed as either in low or in high need. For high need recipients they find that the willingness to purchase the candle is much higher if the purchase is considered a bargain than if it is a fair deal or even a deal at the altruist's price. In the latter case, the implicit donation is no higher than in the case of a donation without the sale of a candle, whereas it is higher if the candle purchase is considered a bargain. For low need individuals direct donations are more effective than the implicit donations through candle sales.

Holmes et al. (2002) compare direct donations with a purchase cum donation at a price three times the donation and thus very different activities. Which alternative mobilizes more resources depends on the perceived properties of the purchased good as subjects need to decide buying the good in order to make the donation. Contrary to that we focus on the *mechanism* of resource mobilization only. In our example people have already made the decision to purchase a good and we investigate whether they are more inclined to give if it takes the form of a price premium of that good or if it is made separately in a donation box next to the cashier. Thus their decision to donate is independent of the decision to purchase a specific good. Moreover, we use more than 5000 subjects from all walks of life rather than 100 students.²

The treatments of our natural field experiment³ are located inside different coffee shops of a chain of identical coffee shops, which makes it easy to hold constant other factors influencing the decision to donate (prices, composition of patrons, range and quality of products offered, observability of the donation etc.). We conducted five treatments – three with the indirect and two with the direct transfer mechanism. For two of the treatments we suggested a donation (direct or indirect), for two we did not, and for the fifth treatment we set a fixed surcharge for the indirect donation (which is equal

²Holmes et al. (2002) asked 100 students to donate in a 5×2 design, which leads to approximately 10 subjects per condition.

³The classification follows Harrison and List (2004).

to the suggested surcharge). That allows us to study the effect of a reference on the amount of donations.⁴

We find that in both treatments – with and without reference – the indirect transfer mechanism mobilized significantly more resources than the direct and that the average donation was higher if a suggested donation was given. Our findings raise interesting questions for the behavioral determinants of giving and provide insights for the design of fundraising.

The paper proceeds as follows. In the next Section we describe the design of our experiment; Section 3 presents the results. The last Section summarizes and draws conclusions.

2 Design

2.1 General Setup

We are interested in determining whether there is a difference in the willingness to make small donations through the direct and the indirect transfer mechanism.⁵ Small direct donations in the real world are typically made by putting coins (or bills) into donation boxes. Alternatively, donations can be made indirectly through the purchase of a good that is sold at a premium with this premium going to charity.

There are three challenges with comparing these mechanisms. First, that the decision to donate should not be influenced by the character of the good in the indirect treatment; second, all other determinants for charitable giving should be the same in all treatments and, third, the experiment should

⁴Our notion of reference is closely related to the discussion on conformity on giving in the literature (Alpizar et al. (2008), Shang and Croson (in press), and Desmet and Feinberg (2003)), but strictly speaking not the same. We implement a precise suggestion rather than stating an adjusted premium. It is a reference from the donors point of view. Hence, we choose reference instead of suggestion or conformity.

⁵Large donations are typically made through remittances and checks and thus do not lend themselves to such experiments.

portray actual behavior in a realistic setting rather than hypothetical behavior. If the good is purchased in the indirect transfer treatment, but not in the direct transfer treatment, results may strongly depend on the perceived quality of the product. That is in essence what Holmes et al. (2002) show. If people do not like the product, they may not purchase it even though they are willing to make a donation in principle. Conversely, if the product is very attractive they may buy it also at a surcharge and not care about donating.

We have chosen a setting for our experiment that allows us to meet these challenges. All treatments were conducted in different coffee shops of the same coffee shop chain “Coffee Bay”.⁶ Thus, product range, product quality and prices are identical. The interior is very similar and the coffee shops used in our experiments are located at very similar places in the centers of different towns.⁷ As we used coffee shops in different towns patrons of the coffee shop were highly unlikely to know about other treatments. The towns in which the chosen coffee shops are located have a comparable structure and size; we visited each coffee shop prior to the experiment and could not see any difference in the composition of patrons. The setting of the experiment was natural: Subjects visited the coffee shop as part of their (daily) routine and were not aware that an experiment was conducted.

Signs and material announcing the possibility for donation were of equal size and color in all treatments so that the level of awareness and information was the same. At the same time the signs were not visible from the outside so that people were not attracted to enter the shop by the possibility to donate through a specific channel.⁸ In other words, individuals entering the coffee shop had already decided to buy one of the products offered and were then confronted with a (treatment-specific) possibility to donate. Thus the

⁶Coffee-Bay is a franchising company with nine shops in various cities in Germany, cf. <http://www.coffee-bay.com/>.

⁷We found suitable venues in Mainz, Koblenz, Gießen, Marburg and Göttingen; for a description see <http://www.coffee-bay.de/bars.htm>

⁸Example settings are shown in Appendix A.

decision to buy the good was not linked to the decision to donate.

We used the following protocol: Each coffee shop was sent a letter with instructions (see Appendix B), which all sales persons were requested to read.⁹ One of us (Hannes Koppel) went to all shops before the treatments started to clarify the setup and to answer questions. The treatments were conducted over a period of one week with observations recorded on Tuesdays, Wednesdays and Thursdays. The introduction of a new alternative (beverages sold at a premium, donation box etc.) was clearly marked through signs and material provided by the charity organization directly at the counter where the products were sold. Donations went to MISEREOR, a very well known charity organization in Germany; we clearly indicated the charity and the specific project to which the donation was going.¹⁰ We used a standard type of donation box, which is easily recognizable and widely used for charitable donations at counters or in street collections. All sales personnel was specifically instructed not to proactively advertise the new alternative, but to ask each customer if she or he had recognized the new possibility. Therefore people were clearly aware of the alternative, but did not feel pressured to opt for it.

2.2 Five Treatments

We conducted five independent treatments, three for the indirect (TI) and two for the direct (TD) transfer mechanism. The first indirect treatment (TI0) is identical to the indirect donations that are found in reality. Individuals were given the choice between buying their beverage at the regular price and buying it at a *fixed* premium which goes to charity.¹¹ Direct donations

⁹A translation is given in Appendix B.

¹⁰It is a relief project for small-scale producers in Haiti (P22302), for details of the project see http://www.misereor.de/Projekte.8492.0.html?&no_cache=1.

¹¹In reality people may only have the choice of buying the good with the charitable premium and a close substitute at a lower price. For example, people can buy regular stamps instead of charity stamps sold with a surcharge.

in the real world are typically made by putting money in a donation box, where people can freely choose the amount they want to give.

If we directly compared these two ways to make donations, we would compare realistic alternatives, but we would not be able to single out a possible effect of the transfer mechanism. In the indirect treatment, individuals cannot choose the amount of the donation whereas they can (and must) choose it in the direct transfer. Since references have been shown to influence giving behavior [Alpizar et al. (2008), Shang and Croson (in press), and Desmet and Feinberg (2003)], – and a fixed donation in TI0 is the strongest form of a reference – such a comparison would observe the combined effect of the different channels of donation and the existence of a reference.

In order to separate these two effects we conducted a second and a third indirect treatment: in treatment TI1 we suggested a premium (that was equal to the fixed premium in TI0), but let people ultimately decide about the premium they wished to pay. In treatment TI2 we did not provide a suggestion, but gave the individuals the choice how much to donate by choosing their premium freely. In order to compare the direct and the indirect transfer appropriately we designed two parallel direct treatments: In TD1 we suggested a donation (equal to the amount of the premium in TI0 and TI1), whereas in TD2 we did not.¹² Therefore, by comparing TI1 with TD1 and TI2 with TD2 we can analyze what a possible impact of the channel of donation is with and without reference. By comparing TI1 with TI2 and also TD1 with TD2 we can see what the effect of a reference is under direct and indirect transfers.

Coffee Bay offers bagels and drinks (coffee of all sorts, tea and chocolate). For technical reasons indirect transfers could only be made through purchases of beverages.¹³ Direct donations could be made also by people who did not

¹²Obviously we cannot restrict customers to put a specific amount of money in the donation box only. So there is no parallel treatment to TI0.

¹³Every beverage was billed as such so that we could measure exactly the number of drinks sold. For the bagels, the different components of the bagels were billed separately,

purchase beverages. That could introduce a bias in the results, when we normalize the amount of donations by the number of beverages sold: average direct donations would be overestimated. In our case that turns out not to be a problem as direct donations are significantly smaller than indirect ones. If there is a bias at all, the true difference would only be bigger than the measured one.¹⁴

Prices for the beverages range between 1.40 Euro for tea and 3.05 Euro for a triple coffee mocca. We decided to use 30 Eurocents as the fixed premium in TI0 and the suggested donation in TI1 and TD1, as the share of donation is in line with what is found in real world examples. Our five treatments can thus be summarized as:¹⁵

Treatment 1 (TI0):

Customers could choose between buying beverages at the regular price and buying beverages with a fixed premium of 30 Eurocents.

Treatment 2 (TI1):

Customers could choose between buying beverages at the regular price and buying beverages with a premium. A premium of 30 Eurocents was suggested, but individuals were free not to follow the suggestion.

Treatment 3 (TI2):

Customers could choose between buying beverages at the regular price and buying beverages with a premium, which they could freely choose.

Treatment 4 (TD1):

Customers were offered the possibility to make a donation in a donation box at the counter. A donation of 30 Eurocents was suggested, but individuals

which did not allow to trace back the number of bagels sold. Since donations on bagel sales would not have allowed us to normalize the donations by the number of sales, we disallowed premiums on bagel sales.

¹⁴Conversations with the sales personnel and our own casual observations convinced us that very few people buy bagels without purchasing a drink at the same time.

¹⁵Photos of the signs introducing different treatments can be found in the appendix. The designs of the signs were as similar as possible.

were free not to follow the suggestion.

Treatment 5 (TD2):

Customers were offered the possibility to make a donation in a donation box at the counter. There was no suggestion on the amount of a donation.

These five treatments allow to analyze the effect of a reference and whether a possible effect depends on the transfer mechanism (direct versus indirect). More importantly, it allows to analyze the effect of the transfer mechanism in a situation with and without reference.

This is summarized in Table 1:

	TD1 suggested don.	TD2 no suggested don.	TI1 suggested don.
TI0 fixed don.	mechanism (with suggestion)	realistic settings	
TI1 suggested don.			
TI2 no suggested don.		mechanism (without suggestion)	reference (indirect)
TD1 suggested don.		reference (direct)	

Table 1: Treatments and testable effects

As pointed out earlier, prices, products, composition of subjects, time and location are the same for all treatments. There is no obvious difference in transaction costs of making the donation. People have to open their purse to pay for their purchases and it should make no difference whether they donate in the box (located directly at the counter) or pay a premium. Likewise the observability of the donation by others is the same in all treatments: The donation is observable at the moment it is made, but not before or after. Thus we should expect the transfer channel to have no effect on the donation. Yet it has.

3 Results

Table 2 reports the beverages sales and the total donations for each treatment. Except for the treatment TI0, in which donations were restricted to 30 Eurocent per beverage, we do not observe individual donations, but only the total amount of donations at the end of the experimental period.¹⁶

Treatment	Beverages (Quantity)	Donation (Euro)
TI0	1503	90.00
TI1	2447	109.70
TI2	385	9.00
TD1	383	11.50
TD2	1798	29.25

Table 2: Sales Statistics of Treatments 1 to 5

In our context that is of little consequence since we are interested in possible differences of the *total amount* of resources mobilized per beverage purchase, which we do observe. We thus essentially compare differences in per purchase donations by comparing imputed distributions of standardized donations. For the donations in the unrestricted treatments (TI1, TI2, TD1, TD2) we compute how many people would have donated the same total amount if donations were restricted to 30 Eurocent as in the case of indirect donations with a fixed premium (TI0). We then use nonparametric tests to compare the means of the distributions. We thereby account for different numbers of subjects in the five treatments.

For instance in treatment TI1, total donations summed up to 109.70 Euros (cf. Table 2). That is a donation of 4.48 Eurocent per beverage purchase.

¹⁶One might argue that outliers could have produced the effects. Information on the donation composition for the donation box make this highly unlikely. We found no bills and only a few coins with a higher value in treatments TD1 and TD2. The same is true for the indirect treatments. Moreover, the biggest effect is found for the indirect treatment with a fixed premium (TI0), which does not allow for outliers.

If each individual were restricted to a 30 Eurocent donation per beverage purchase, the sum of 109.70 Euros would have been achieved if 365.67 (rounded to 366) beverages out of the 2447 were purchased with a premium of 30 Eurocent in that treatment. Thus, when comparing treatments TI0 and TI1 we compare the actual distribution of treatment TI0 with 300 beverages sold at a premium of 30 Eurocent and 1203 beverages bought at the regular price – donating nothing – with the imputed distribution in treatment TI1, in which an imputed 366 out of 2447 beverages were purchased with a premium of 30 Eurocent. Analogical calculations are done for all treatments.

A first impression of the different inclination to give in the five treatments is given by Figure 1. It denotes the average donation per beverage purchase in each treatment. There is a marked difference between the direct and the indirect transfer mechanism.

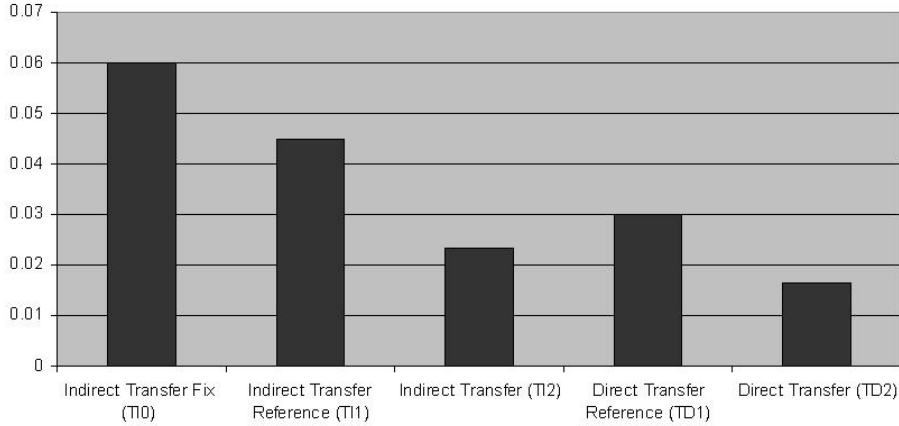


Figure 1: Average donations per beverage purchase

Results of Fisher’s exact test, that tests for mean differences, are shown in Table 3.¹⁷ We find a significant difference in average donations per beverage purchase between treatment TI0 and all other treatments; Fisher’s exact test rejects the null hypothesis of equal means in all cases at the one percent

¹⁷Numbers next to the treatment code denote the average donation per drink in Eurocent. For detailed test statistics see Appendix C.

level of significance, showing the superior effectiveness of mobilizing resources through indirect transfers with a fixed premium. Comparing the treatments that we observe in reality, i.e. TI0 and TD2, we find that the indirect transfer mechanism with a fixed premium raises on average 5.99 Eurocent per beverage purchased whereas the direct transfer mechanism without suggested donation gives on average 1.63 Eurocent per beverage. That is less than a third. In other words, the indirect transfer with a fixed premium is much more effective than the direct transfer without any reference. Yet, as mentioned above, we measure two effects simultaneously with such a comparison; the indirect transfer mechanism and a very strict reference of 30 Eurocent.

Treatment		TI1	TI2	TD1	TD2
Donation		4.48	2.34	3.00	1.63
TI0	5.99	$p = .000$	$p = .000$	$p = .000$	$p = .000$
TI1	4.48		$p = .000$	$p = .012$	$p = .000$
TI2	2.34			$p = .258$	$p = .093$
TD1	3.00				$p = .001$

Table 3: Fisher test results and average donations per beverage purchase

The indirect transfer mechanism without suggested donation (TI2) raises on average 2.34 Eurocent per beverage purchase, which is significantly higher (at $p = .012$) than average donation of 1.63 Eurocents in the direct treatment without suggested donation (TD2). Introducing a suggested donation of 30 Eurocent increase average donations for both mechanisms; direct donations (TD1) raise on average 3.00 Eurocents and indirect donations (TI1) 4.48 Eurocents. This difference is significant at the ten percent level ($p = .093$). In sum, we find that the indirect transfer mechanism raises significantly more resources than the direct one – regardless whether we compare sets of treatments with or without reference.

References (a suggested donation) increase the average giving in both transfer mechanisms significantly and strongly. In the case of direct transfers individuals donate significantly more when given a suggested donation:

Average donation per beverage purchase in TD1 is 84 percent higher than in TD2. This difference is significant at the one percent level ($p = .001$). We find the same qualitative result for the indirect transfer mechanism ($p = .000$); average indirect donation per purchase without reference is 2.34 Eurocent while with a suggestion it is 4.48 Eurocent (or 91 percent higher) with a suggestion of 30 Eurocent.

4 Conclusion

We have conducted a natural field experiment on charitable giving focussing on two mechanisms that coexist in reality. We find that the indirect transfer mechanism — the purchase of a good at a fixed premium, which goes to charity — is much more effective in mobilizing resources than the direct transfer mechanism, a donation box where people are free to put in any amount they like.

That is an interesting and not necessarily intuitive result. In the treatment with a fixed premium people willing to donate less than the premium will not donate, but they could in the treatment with the donation box as it allows also for smaller donations. For that reason, the direct transfer mechanism should produce a higher average donation.

We find the opposite and show that it is the result of two effects. First, there is a positive *reference effect*. When people were given a suggestion for the amount of donation they gave more on average. This finding holds for the direct and the indirect mechanism. In reality the indirect mechanism with a fixed premium provides the strongest possible reference whereas the direct mechanism does not provide any. Thus the reference effect explains part of the observed difference. (Of course this finding depends on our choice of the suggestion; if it is chosen too high or too low, the result may be reverse.)

Second, and more surprisingly, we find that the mechanism as such plays an important role for the mobilization of resources. We show that people are significantly more willing to give if donations are collected through a

surcharge on the product purchased than through a donation box. This finding holds in situations with and without reference and it is independent of the product as subjects bought the product in both sets of treatments. This novel *transfer mechanism effect* does not suggest an apparent explanation, as direct transaction costs, observability of the donation, and all other factors are the same for both channels. We thus hypothesize on possible reasons for this result.

A possible explanation would be that a price premium links the donation to the purchase of the coffee etc. whereas the purchase of the coffee and the donation in a donation box are regarded as two simultaneous, but independent acts. Thus the ‘mental transaction costs’ could be different. While in the first case the subject may feel he or she has to make one decision only, in the second case he or she may consider the donation decision to be separate and thus burdensome and may refrain from it with the consequence that no donation is made. Such a link between the purchase and the donation may also suggest a gift exchange type explanation. In the gift exchange the donor receives a gift first and then is more likely to make a contribution, or is more likely to make a higher contribution. In our experiment the donor has decided to buy a product and then is confronted with a donation possibility. Yet, if people feel that the product is worth more to them than they have paid for it (it contains a “gift component” for them), they may be inclined to give something back in return. In other words, they may be more willing to make a donation than they otherwise would be. Lastly, the communicative act with the sales person could explain the difference. The sales person makes people aware of the possibility to donate in every treatment and thus sales person and consumer communicate about the possibility of donation in all treatments. Yet only in the indirect treatments must people talk to the sales person if they want to make a donation. This communicative act may give them extra expressive utility (Hillman (2009)), which may lead to higher donations. With our setup, we cannot distinguish between these alternative explanations. Of course it would be desirable to identify the reason for the

observed differential behavior. This is left for future research.

Our results are potentially important for the design of fundraising activities. We have shown that indirect transfers are significantly more effective in mobilizing resources. It may thus be a better option to link donations to purchases of goods than soliciting them directly. If both mechanisms are not mutually exclusive, indirect transfers may be an effective additional channel to collect small donations. Even though we have investigated only charitable contributions, our results may well carry over to situations of voluntary contributions to public goods. Thus in order to raise money for a neighborhood beautification program it may be a better idea to sell coffee or cake at neighborhood party at increased prices than to solicit contributions directly. The same may hold for donations to local schools, national parks, etc. Yet the indirect channel may prove more effective in many other areas of pro social behavior as well. It may even turn out to hold for political campaign contributions.

A Experimental Settings





B Instructions

- Do not say anything about an experiment! Be as you normally are.
- The experiment is conducted over three days; Tuesday, Wednesday and Thursday.
- Place the provided sign at the counter next to the point of sale.
- TD: Place the donation box next to the sign.
- Be extremely careful with the registration of the sales.
- It is very important that you do everything meticulously and with a maximum of accuracy.
- TI: Paying a premium is possible for beverages only.
- TI0: You have to carefully distinguish between buying a beverage without and with a premium. There is a button installed at the cash register.
- Do not proactively advertise the new alternative, but ask each customer if she or he had recognized the new possibility.
- If a consumer is asking why you are doing this never say anything about an experiment. Answer instead “We wanted to give you the opportunity to donate for this cause.”
- TD: Never open the donation box! If it is full you have to install another one.
- TI: As you offer a premium, the whole amount donated through the higher price must be donated for the mentioned purpose. Please be very careful with the records.

C Test Statistics

The tables 4, 5, 6 and 7 show the actual (TI0) and imputed distributions for the treatments in comparison between donation and no donation. Tables 8, 9, 10 and 8 show imputed distributions only. The imputed distribution was generated as described in section 3 for TI1. We give another more detailed example according to the comparison in table 9. In treatment TI2 and TD2, the total amount of donations are 9.00 and 29.25 Euros, respectively. If individuals in TI2 were restricted to a 30 Eurocent premium per beverage, donations of 9.00 Euro would have been obtained if $9.00/0.30 = 30$ beverages out of 385 were purchased with a premium of 30 Eurocent (see table 9 cell TI2/yes). This leads to $385 - 30 = 355$ beverages purchased without a premium (see table 9 cell TI2/no). The same calculus would have led to $29.25/0.30 = 98.33$ (rounded 98, see table 9 cell TD2/yes) beverages with a donation of 30 Eurocent and $1798 - 98 = 1700$ beverages purchased without a donation (see tabel 9 cell TD2/no) in treatment TD2. Thus, when comparing treatments TI2 and TD2 we compare the imputed distribution of treatment TI2 in which 30 beverages sold at a premium of 30 Eurocent and 1203 beverages bought without a premium (see table 9 column TI2) – donating nothing – with the imputed distribution in treatment TD2, in which 98 beverages out of 1798 beverages donated 30 Eurocent (see table 9 column TD2). The analogical calculus is done for all treatments.

Donation	TI0	TI1	Total
no	1203	2081	3284
yes	300	366	666
Total	1503	2447	3950
Fisher's exact $P = 0.000$			

Table 4: Test of Difference between TI0 & TI1

Donation	TI0	TI2	Total
no	1203	355	1558
yes	300	30	330
Total	1503	385	1888
Fisher's exact $P = 0.000$			

Table 5: Test of Difference between TI0 & TI2

Donation	TI0	TD1	Total
no	1203	344	1547
yes	300	39	339
Total	1503	383	1886
Fisher's exact $P = 0.000$			

Table 6: Test of Difference between TI0 & TD1

Donation	TI0	TD2	Total
no	1203	1700	2903
yes	300	98	398
Total	1503	1798	3301
Fisher's exact $P = 0.000$			

Table 7: Test of Difference between TI0 & TD2

Donation	TI1	TD1	Total
no	2081	344	2425
yes	366	39	405
Total	2447	383	2830
Fisher's exact $P = 0.012$			

Table 8: Test of Difference between TI1 & TD1

Donation	TI2	TD2	Total
no	355	1700	2055
yes	30	98	128
Total	385	1798	2183
Fisher's exact $P = 0.093$			

Table 9: Test of Difference between TI2 & TD2

Donation	TD1	TD2	Total
no	344	1700	2044
yes	39	98	137
Total	383	1798	2181
Fisher's exact $P = 0.001$			

Table 10: Test of Difference between TD1 & TD2

Donation	TI1	TI2	Total
no	2081	355	2436
yes	366	30	396
Total	2447	385	2832
Fisher's exact $P = 0.000$			

Table 11: Test of Difference between TI1 & TI2

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