Voluntary contributions to organized institutions and to the (non-organized) social network

Josepa M. Miquel-Florensa*   York University

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Abstract

We present an impure altruistic model in which we include two types of public goods: the ones provided through contributions to organized institutions and the ones that rely on the (non-organized) social network. We test empirically this model, estimating the determinants of the contribution decision to each public good and testing the relationship among them.

In the organized case, we find an important relation between the two available channels of contribution: money and time. While the money giving decision is mainly influenced by availability of resources, the time donation is mainly influenced by the individual's personal and social environment.

The social network characteristics and the closeness to the need are the found to be the main determinants of the non-organized contributions.

We find important complementarities in both types of contributions.

Keywords: Altruism, Voluntary contributions, Social Networks

JEL codes: D64, H41, I30

1   Introduction

The purpose of this paper is to study the facts that influence the decision to contribute to public goods, either through organized institutions or through non-organized channels. We present a model that includes in the utility of the individual the availability of both types of public goods, the ones targeted by organized institutions (health, the arts, education institutions, international aid institutions, among others) and the ones approached in a non-organized way (help to friends and relatives in bad times, contributions to the people begging on the street).

The most extended argument of why people voluntarily contribute for the wellbeing of the others is altruism, defined as "*unselfish concern for the welfare of others*", and has been approached in the literature from different points of view.

On the one hand, pure altruism has been used in the strictly defined sense "*completely unselfish concern that makes the utility of the donor depend only on private consumption and the wellbeing of the others*". On the other hand, impure altruism has been used to refer to the fact that some donations may have different objectives. Among them, the Warm-glow giving argument, proposed by Andreoni (1990), emphasizes the fact that the individual donation enters the utility function (*'purely internal satisfaction that comes from the act of giving'*). The Signaling and Prestige argument, proposed by Glatzer and Konrad (1996)[1], says that donations come from the desire to demonstrate wealth and signal oneself as a "nice" person. And the Social exchange approach, introduced by Hollander (1990), argues that we are looking for the approval of the person we are helping, not caring about other people knowing this, and with this we are "introducing emotional activities prompted by some stimulus that takes us beyond rationally calculating economic man."

In our approach, we include 'warm-glow' from giving together with the fact that contributions in the social network do involve reciprocity in the future.

We use 1996 General Social Survey data, that contains a special section on giving and volunteering. We find that organized and non-organized contributions follow quite different patterns. On the one hand, we find that organized contributions are related to the socioeconomic characteristics of the individuals, following either availability of resources or fiscal incentive explanations. On the other hand, we find that non-organized contributions are quite different in the sense that the help provided is mainly explained by the social network (with small search and asymmetric information cost), and street giving is mainly explained by the chance of finding somebody asking (search cost). In this second type of contribution, we find that socioeconomic variables have little explanatory power.

Section 2 presents the public good contributions model, and Section 3 presents the data we use. Section 4 analyzes organized donations of time and money, and is followed by Section 5 with the non-organized contributions analysis. Section 6 concludes.

2   Organized and Non-organized donations model

Does the wellbeing of friends and relatives affect us in the same way as the results of foreign aid for development purposes? We may think that not, but is there any relation among them? Is there any kind of involvement effect that makes people more concerned about all the needs whatever their nature is? And

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[1]Vesterlung (2003), Vesterlung and Kumru (2005) and Romano and Yildirim (2001) highlight the effect of status on public good contributions.

moreover, do we feel better only by having contributed to something whatever the nature of this contribution is?

We present a model that considers, on the one hand, the fact that the level of social public goods provided affects the utility of the individual. We consider two types of public goods, the ones to which there is an organized scheme of contributions, and the ones that are "financed" through a non-organized network. We introduce them as separate arguments in the utility function of the individual. On the other hand, following Andreoni (1990) "warm-glow" giving, we introduce in the utility function separately the amount of contribution to each public good considered. For simplicity, we assume that there is only one private good that the individual wants to consume, and that he has an income w_i. The individual problem is:

$$\max_{x_i, g_1, g_2} U(x_i, G_1, G_2, g_1, g_2) \tag{1}$$

$$s.t. w_i = x_i + g_1 + g_2 \tag{2}$$

$$G_1 = G^1_{-i} + g_1 \tag{3}$$

$$G_2 = G^2_{-i} + g_2 \tag{4}$$

where $U(.)$ is an increasing and concave function, and G^1_{-i} and G^2_{-i} represent the donations to the public good by all individuals but the one that takes the decision. Plugging the constraints into the utility function and taking the FOC w.r.t. g_1 and g_2 we get the demands for the public goods,

$$G^*_1 = f_1(S, G^2_{-i}, G^1_{-i}) \tag{5}$$

$$G^*_2 = f_2(S, G^1_{-i}, G^2_{-i}) \tag{6}$$

Using (3) and (4), and defining social income as $S = (w_i - G^1_{-i} - G^2_{-i})$, we get the desired donation functions for each donation type.

$$g^*_1 = f_1(S, G^2_{-i}, G^1_{-i}) - G^1_{-i} \tag{7}$$

$$g^*_2 = f_2(S, G^1_{-i}, G^2_{-i}) - G^2_{-i} \tag{8}$$

Three factors affect the desired donations:

1. S,"social income", represents the availability of resources, a trade-off that the individual faces when deciding whether to use the resources to contribute or to buy private good. It represents the propensity to donate for pure and impure altruistic reasons, since the individual is giving up private consumption from his available resources to contribute to the public goods.

2. Contributions of the rest of individuals to the alternative public good. Two effects can appear here: on the one hand, we have a given amount

of resources to split between the three expenditure alternatives. On the other hand, it is likely that people who care about one of the public goods cares also about the other. So, we can expect to have here a mixture of the altruistic and egoistic effects, given by the existence of alternative contributions.

3. Amount contributed by others to the public good we are considering. Here we have the propensity to donate for egoistic reasons; we consider the amount contributed by the others when deciding if to free ride or to contribute.

3   Data

The data we use comes from the General Social Survey (GSS). The GSS is an almost annual, personal interview survey of U.S. households conducted by the National Opinion Research Center (NORC) at the University of Chicago. In 1996, it contained a special subsection about donations, from which we obtain our sample. Discarding the observations that were not asked about donations, we have information on 1356 individuals.

From this database, we obtained the data on organized donations of time and money in the following categories: Health, Education, Religious Organizations, Human Services, Environment, Public-Social Benefit, Adult Recreation, Arts and Culture, Work-related Organizations, Political Organizations, Youth Development, Private and Community Foundations, International/Foreign, Informal-Alone-Not-for-Pay and Other.

Non-organized contributions data is available for contributions in the form of money, food or clothing to homeless or street-people, needy neighbors, needy relatives, needy friends and any other needy person.

The variables we use on individual characteristics include: marital status, labor force status, number of siblings, number of children, age, sex, race, born in the country, parents born in the country, religion, attendance of religious services, place of interview and education. They determine the individual's social network, important in the non-organized decision, and also give information on the availability of resources.

Income indicative variables, as a measure of the availability of resources, need special attention: the income level ranges (yearly income before taxes) considered in the data set are quite low, and all incomes equal or above $25,000 a year are tabulated as equal. To use this income information we create a dummy variable, high income, that takes value one for incomes greater or equal to $25,000 a year, and zero otherwise[2].

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[2]In 1996, mean yearly personal income before taxes was $47123, and median $35492. Second quintile means household income was $21097. The data tabulation only allows considering people over $25000. Data: U.S. Bureau of the census, Current Population Reports, P60-197, Money income in the United States 1996. U.S. Government printing office, Washington D.C. 1997.

To enrich the income information, we use subjective income data: the 'belief below' variable takes value one for individuals who consider their income to be below the average American family (zero otherwise), and they represent 29.13% of the sample. The 'belief over' variable takes value one for individuals who consider their income to be over that of the average American family (zero otherwise), and they represent 22.40% of the sample. The rest of individuals in the sample consider themselves to have an income around the mean. This variable, which shows the subjective relative position of the individual versus the rest of potential donors, gives information on how we should expect the individual to react to contributions to the public good by others. In Table 1 we see the cross-relation between the two income approaches[3].

Another set of individual characteristic variables that requires special attention is the opinion ones. The 'people trust' variable takes value one if the individual says that most people can be trusted, and zero for individuals who say that people cannot be trusted or that it depends. The little public expenditure variables, 'too little expenditure in mass transportation' and 'too little expenditure in big cities' (dummy variables that take value one in the affirmative case, zero otherwise) belong also to this opinion group.

This last set of variables can be considered a proxy of the search cost and the importance for the individual of the possible asymmetric information problems found in the contribution decision process. They reflect also the measurability for the individual of the amount of public good available and needed, an important element in the choice of the individual contribution.

4 Organized donations

We consider the contributions of time and money made by individuals to the organized volunteer network as organized donations. Money and time contributions can be considered alternative instruments the individual has to contribute to the public good. We expect individual characteristics to determine which instrument is preferred by each person, and we also expect to find a relationship among them.

Empirical studies on volunteer labor, such as Freeman (1997), remark on the importance of being asked to do so in the volunteer decision[4]. Brown and Lankfort (1992) estimate the effect of tax prices and available time on money and time donations using a bivariate Tobit model without allowing any relation between the donations but the correlation among the error terms in the Tobit

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[3]In Table 1 we see that there are people who do not believe to be over the mean that here is considered high income. This may be due to the income tabulation levels or to the usually biased downwards perception of the individual's income compared to the others.

[4]Freeman defines the volunteer activities that people do largely when asked as "conscience goods", "*public goods to which people give time or money because they recognize the moral case for doing so and for which they feel social pressure to undertake when asked, but whose provision they would just as soon let someone else do*". In this line, we can also see an important social pressure on helping family, friends and neighbors. Maybe we do not need them to ask for help, but we feel the moral obligation and social pressure of getting involved in their situation.

model. Duncan (1999), mixing a public good model and a private consumption model, estimates the individual demand for charity, looking at the money-time decision from the charity firm's point of view (i.e. looking at how the individual decision affects the charity's possibility frontier). Our approach goes deeper into the relationship between the two donation types and studies their relation with the non-organized contributions, following the desired donation function proposed by our impurely altruistic model.

Our desired donation function for organized contributions has three arguments. We relate them with the data available to estimate the factors that determine this demand. The first one, availability of resources, is given by S, the social capital. Each type of organized contribution, time and money, has a different availability constraint, and the individual chooses the more efficient way for him to assign these resources. The second argument of the desired donation function is egoistic reasons to donate: how to respond to what the others are giving. In this case, search costs and an asymmetric information costs appear. We need to know what the others are giving, how our donation will be used, and that the other persons volunteering time with us will provide the appropriate effort. Over all these reasons, we need to be aware of the problem, and of the existence of a reliable way to solve it, an efficient way to provide this public good. The third argument of our demand function is related to how our contribution is related to the total amount provided in the non-organized case (by the others). Are they complements or substitutes? Both represent use of resources that otherwise could be directed to private consumption, so we need to know about the trade off between them, and how sensibility to each type of contributions affects the individual decision.

4.1   Econometric strategy

The two alternatives available in the organized donation scheme, money and time, and their relationship has to be taken into account in the econometric strategy performed. In Table 2 and Table 3 we show the cross-relationship between donations of money and time, for all the donation types and for the non-religious donations types[5]. These tables confirm the intuition that there exists a relationship between the two contribution types.

Given the discrete data we have, we proceed with a latent variable approach. In the latent variables ("our discrete choice model indicators of the happiness of each alternative") we allow for simultaneity in the "happiness" that each type of contribution produces. It seems reasonable to expect that the happiness of giving money is positively related to the happiness of giving time (maybe giving time diminishes the asymmetric information problem of giving money), and it also seems reasonable to expect that giving time happiness is positively related to the happiness of giving money (maybe to give money also involves us more in the volunteer job we are doing). The econometric model estimated is as follows:

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[5]We consider non-religious donations the contributions to any of the organized donation types but the religious one.

We have two discrete variables, d_i and a_i, that are such that

$$a_i = \begin{cases} 1 & if \ y_{1i}^* \geqslant 0 \\ 0 & otherwise \end{cases}$$

$$d_i = \begin{cases} 1 & if \ y_{2i}^* \geqslant 0 \\ 0 & otherwise \end{cases}$$

for $i = 1, ..., n$. The latent variables, y_{1i}^* and y_{2i}^*, are, as usual, assumed to be linear functions of the individual characteristics. Following Heckman (1978), we allow for simultaneity in the sense that we assume that each latent variable depends on the other, i.e.

$$y_{1i}^* = \alpha_1 X_{1i} + \gamma_1 y_{2i}^* + \epsilon_{1i}$$
$$y_{2i}^* = \alpha_2 X_{2i} + \gamma_2 y_{1i}^* + \epsilon_{2i}$$

where $(\epsilon_{1i}, \epsilon_{2i})$ are assumed to follow a bivariate normal distribution with mean $\mu = (0,0)$ and variance-covariance matrix $\Sigma = \begin{bmatrix} 1 & \rho \\ \rho & 1 \end{bmatrix}$

Due to the discrete data we have, we are not able to identify the variances in the model, so we normalize both of them to one. Exclusion restrictions apply for the variables included in each latent. Following Amemiya (1974) and Heckman (1978) we proceed with the estimation of this model.

4.2 Estimation results

Data on money and time donations include contributions to different kinds of institutions. Among them, two big groups can be distinguished: religious and non-religious organizations. It is clear that some apparently non-religious organizations may be strongly related to religion (for example, some types of contributions to education can be related to a religious community if the educational institution is so situated, or the international help can be related to a religious network outside the country). However, since there is no data available to account for it, and this is a factor common in some way to all religions, we do not take it into account in our division. Religious organizations' donations are expected to follow quite different patterns than all the other types of donations: on the one hand, some of these contributions can be directly related to the assistance to religious services, and on the other, the religious fees will depend more on the organization of the religion than on the individual decisions[6].

In Table 4 we present the estimation of the **simultaneous Probit model for money and time**, non-religious organized donations. We see that γ_1 and γ_2 are positive and statistically significant. As we expected we have a positive effect of money happiness on time and vice versa. This reflects the "complementarity" of the two types of donations.

Availability of resources in the money case is given by age and education. Education has a positive effect on the likelihood of giving money, presumably

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[6]See as an example of the religious case Dahl and Ranson (1999).

due to the increasing wages. As age increases the likelihood of giving money also increases. Older people and/or people with higher levels of education are expected to have more income, and so more resources available to donate, even if some fiscal incentive can be found in this case. We also see that 'believing to be below the mean' has a negative effect on the likelihood of giving money, which can also be a response to the availability of resources and of personal feelings about who should contribute.

For the time case, age follows the opposite pattern. As age increases, personal obligations are likely to increase which decreases the time available to volunteer. The labor market situation is also indicative of available time to donate: with respect to the reference group, full time workers, we see that part time workers and students, the groups expected to have more available time, are more likely to volunteer time. Retired and keep-house persons are less likely, but given the possible physical constraints in some and time constraints in others the result is not surprising.

For time availability, marital situation should also be taken into account. Taking married as the reference group, we see that widowed and never married people are less likely to give time, as are the divorced and separated. This can be the result of personal obligations that reduce time availability, and it can also reflect some search cost that is otherwise shared by the couple. Previous studies (Garcia Marcuello (2002)) have shown the importance of the partner in the volunteer decision—the involvement of both the individuals is important.

In the egoistic reasons to donate chapter, information about the existing organized network is needed. For the money case, being born in the US may be an indicator of the knowledge the individual has about the organized network. Past information about the organizations, about their way of acting and their needs, may be available from past familiar experiences. For the time case, the size of the living place has a negative relationship with the likelihood of volunteering time. Trusting in people has a positive effect in the time donation decision[7], not surprisingly, since in this case the close relation with the other volunteers makes this belief more relevant.

We found a significant relationship of time donations with non-organized donations. We can interpret that people involved in non-organized contributions are more likely to be involved in the organized time as a sign of social implication. More involved people are more likely to be involved in any available opportunity to solve the social problems. Given the local public good character of the non-organized donations, we are using as indicators of the amount of this public good provided by the individual the fact of him being involved in these donations. The importance of the network in these donations allows for this assumption.

The relationship between the two types of organized donations needs comment. On the one hand, we see a positive and significant relation of the hap-

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[7]In volunteer time, we do not have a contract; there is only a commitment between the individual, the organization and the other individuals involved there, so believing that we can trust people we do not know is an important point . As expected, this information asymmetry valuation has a positive effect on the likelihood of getting involved in time contributions. For the money contributions, the personal relation is not expected to play such an important role.

piness of each type to the other. On the other, we see a negative correlation of the unobservables of each decision. Brown and Lankford (1992) obtain a positive relation in the unobservables of their bivariate Tobit model without simultaneity. Our result shows that the relation may be composed of two effects: the happiness of each contribution makes the individual more likely to get involved in the other type, but the unobservables (for example, personality characteristics of the individuals) have the opposite effect.

5 Non-organized donations

As non-organized contributions, we consider the help provided to friends, neighbors and relatives in the form of clothes, food or money done out of the organized help scheme, and the money given to people begging in the street. We call these contributions non-organized contributions since they are done without an institution that acts as a mediator; they go from the donor to the needy without any intermediate step. Despite this similarity, we expect them to follow quite different patterns, given the different information problem that each type considered faces, and also the different search costs and personal implications.

Non-monetary donations in the intimate social network can be interpreted as "merit goods", conditional donations in the form of food and clothes instead of giving their value in money[8]. This can be interpreted as a reaction to the existing information problems. In the street giving donation, as pointed out in O'Flaherty (1996), asymmetric information problems appear and are important. Schoeni and Koegel (1998), in an empirical study of the economic resources of the homeless in Los Angeles, show that food, housing and cash transfer donations represent an important percentage of the homeless' income[9]. We argue that the social network is a possible solution to the information asymmetry for the family-friends transfers.

As in the organized case, the desired donation function has three arguments:

(1) Availability of resources: in this case, resources considered are money but also leftovers, old clothes, and all kinds of day-to-day used stuff that can be transferred to another person who can use them. This forces us to expand the income resources definition to the personal environment situation, since now the resources needed to contribute are not only the physical ones but also the need to find the adequate person for the non-monetary contributions, a person in need of what we have available.

(2) How to react to the amount of public good provided by others? In this case, we have a "local public good". The result of helping friends or relatives, or

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[8] Coate (1995), Bruce and Waldman (1991), among others, argue that conditional donations can be a solution to the Samaritan Dilemma (Buchanan (1975)).

[9] The study shows that 32.7% of the sample received help from informal support networks, 45.5% received meals at least one time from a family member or friend, and 8.4% spent a night in a family member's or friend's home. So, in form of help or of street giving, non-organized contributions are an important percentage of this group resources.

of giving to a person panhandling whom we see every day in the street is easily verifiable, as is easily verifiable by the rest of the group whether an individual did or did not contribute to this local network. For the help case, once I am in the network I know the others' resources and needs, and they also know mine. There is an implicit contract of help in case of need, and in any case the free riding on others' contributions is easily discovered. The street giving is expected to have quite a different behavior: if we see that a lot of people contributed in front of us, we may think that this beggar already has enough to cover his needs so he or she does not need our contribution.

(3) For the relation between the two types of contributions, again a complement-substitute relation should be expected. In Table 5 we see that the bigger group is composed of people that help but do not give to the people in the street, and it is followed in number by the group of people that help and give in the street. We see an important difference in number of people that help compared to the people that give in the street.

5.1 Econometric strategy

In the non-organized case, the relation between the two types of contributions is not expected to be as close as in the money-time donation case, as can be inferred from Table 5. Given our discrete data, and also the difficult valuation of the help contributions, we proceed estimating a Probit model for each contribution type.

After that, we estimate a bivariate Probit to test for the relationship between the help and street giving decision. Will the fact of giving \$1 or \$5 to the person we found asking in the corner change our happiness of giving the neighbor some old clothes? or will the point of having given something in the street make us feel more generous and involved when deciding to help the neighbour? And in the other direction, will giving \$10 or a towel to a relative change our happiness of giving some change to the person we find asking in the station? or will the fact of having interacted with this relative make us feel more involved and so more likely to get rid of the coins we have in the pocket?

It seems reasonable to answer negatively to the first and positively to the second questions, so we propose a model with interaction of dummies (following Heckman (1978)). We have two dummy variables, and taking the latent variable approach as we did in the money and time part, we can define them as :

$$a_i = \begin{cases} 1 & if \ y_{1i}^* \geqslant 0 \\ 0 & otherwise \end{cases}$$

$$d_i = \begin{cases} 1 & if \ y_{2i}^* \geqslant 0 \\ 0 & otherwise \end{cases}$$

where a_i denotes the help dummy and d_i denotes the street giving dummy.

The latent variables are assumed to have the form:

$$y_{1i}^* = \alpha_1 X_{1i} + \mu_1 d_i + \epsilon_{1i}$$

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$$y_{2i}^* = \alpha_2 X_{2i} + \mu_2 a_i + \epsilon_{2i}$$

and we assume $(\epsilon_{1i}, \epsilon_{2i})$ to follow a bivariate normal distribution with mean $\mu = (0,0)$ and variance-covariance matrix $\Sigma = \begin{bmatrix} 1 & \sigma_{12} \\ \sigma_{12} & 1 \end{bmatrix}$

But this model including both dummies at the same time will not be estimable (Heckman (1976), Heckman (1978)), and we need to approach this estimation by imposing restrictions on μ_1 and μ_2 in the estimating model.

5.2   Estimation results

In Table 6 we present the **Probit estimation for the help needy persons decision**. The first column presents the estimation for the whole sample. We see that in the availability of resources, a surprising result appears. Education has an increasing negative and significant effect on the likelihood of helping. In this decision, more than having resources, what is important is to know people who have needs that can be solved with this kind of help. Despite resources, we need to look at needs and network connections. More educated people are less likely to find this kind of person and so are less likely to be involved in this kind of contribution, even possibly having the resources to do so. The labor market situation follows a similar pattern. Being the reference group full time workers, we see that people with fewer labor obligations are less likely to get involved in this kind of contributions, and people in school and house keepers are more likely. These last two groups are more likely to be highly involved with friends and relatives, as well as more concerned with this kind of needs.

Income has an interesting sign in this estimation. To believe you are below the mean income has a positive effect on this help, maybe because people who believe that they are under the mean are the ones more involved in needs of the people around them they think are also under the mean. They also may have a smaller opportunity cost of getting involved since they may expect reciprocity from the network in the future.

The knowledge of the amount of this public good provided by others is now given by the area where we expect this public good to act. Non-organized contributions targets are local. Information about the area comes in the place of living indicators. With the reference group living in a city greater than 250,000 inhabitants, we see that this kind of help is more likely in smaller areas[10]. This fact also reflects the important information problems that this kind of help faces: it does not mean that in bigger areas there are no needy people, but in smaller ones the information about the others makes these help networks more likely to appear. In the same line, the attendance at religious services once or more a week has a positive effect in the likelihood of helping, since religious services are

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[10]This set of dummy variables is jointly significant ($\chi^2(9)$=16.22, Prob>χ^2 = 0.0623). We see that living in the suburbs or in large cities makes individuals less likely to give this kind of help, as well as living in smaller areas and in cities from 50,000 to 250,000 inhabitants, this of course is in relation to the reference group.

important social meeting points[11]. Given this information network, free riding is less likely since it is more easily noticed by the other members of the group. Age has a positive and significant effect up to 65 years old, where the likelihood of helping decreases with respect to the reference group, from 18 to 30 years old. This may reflect a combination of availability of resources and involvement in the group, since older people are more likely to have resources to contribute and also to be more conscious of the person's needs. People older than 65 years may have fewer resources and also are more likely to be in need than to donate.

To be a woman has a positive and significant effect on the likelihood of helping. Usually women are the members of the household who take care of food and clothing, so they are the ones with information about what is not useful any more for their family and can be given to another family in need. In columns (2) and (3) we present the estimation of the Probit model for women and men. The two models are statistically different[12]. We see that for women, the size of the living place and education are the more important determinants of the decision, and for men they are age and education.

The relation with the other donations considered in this paper is reflected in the positive and significant coefficients for organized and non-organized donation types, that can be considered as measures of "involvement" of the person with the others. If a person is involved in other kinds of help, his search costs are lower (the individual may be skilled in screening the calls for help) and his ability to notice others' needs may be higher, so to take an action to help is easier for them.

In Table 7 we present the **Probit estimation for the street giving donations**. The street giving shows us a completely different pattern than the other types of giving considered in this paper. Neither education variables, labor variables nor marital status variables (where only being never married is relatively positively significant) give us information about the facts that make individuals more likely to this kind of donation.

Availability of resources is reflected in the positive and significant coefficients for high income and belief over the mean income. The amount of public good provided by others is reflected in the opinion that the government spends too little in mass transportation and in big cities, together with the size of the living place[13]. These variables can be interpreted as proxies for the individual

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[11]We find a positive and significant coefficient of the 'attendance' variable, even if the different religious variables were not jointly significant ($\chi^2(4)$=2.48, Prob$>\chi^2$ =0.6477). It is reasonable, since all religions in a similar way teach their followers to help others whenever possible, as well as non-religious families.

[12]LR $\chi^2(26) = 40.64$. Prob$>\chi^2 = 0.0446$

[13]The negative coefficients for cities of more than 1586 and 7323 thousands hab. are due to an scale effect with respect to the size if living place variable. More than 7324 thousands hab. refers only to New York, and together these two variables are big cities indicators.

Relation between this two indicatiors of big cities and the expenditure opinions is checked, 34.5% of individuals that live in big cities think that there is too little expenditure in mass transportation, and 29.3% think that there is too little expenditure in big cities. This small percents lead to think that both variables can be included without problem.

living and/or coming often to big cities and using mass transportation. It is in big cities and in their mass transportation where the greater number of people begging is concentrated, and going into them is the way individuals see their needs and can infer the others' contributions.

As age increases, the likelihood of giving decreases. This may also be given by the frequency with which people use mass transportation and go to crowded places where street people usually accumulate.

The relationship with other kinds of donations as usual is reflected in the positive and significant coefficients for the other donation types considered.

Table 8 presents the **bivariate probit estimation for the two types of non-organized donations**. We see a symmetric pattern in the explanatory variables from the separate estimations. The information this estimation gives to us is the positive correlation in the error terms, in the unobservables affecting both decisions. That is not a surprising result, since from the estimations presented for each type independently we learned that there is an important positive relation between the two decisions. we only allow the donations to be related through non-observables included in the error term.

Table 9 gives us the results when we allow μ_1 and μ_2 to be different from zero one at a time. In the first column, help seems to be negatively affected by street giving when the possible correlation in the error terms is considered, contradicting the result we obtained when this correlation was not taken into account. So, we can think that somehow the "complementarily" found in Table 8 was more due to the unobservables not included than to a "complementarity" between the decisions in the strict sense. The second column shows the results when we restrict $\mu_2=0$. We find a positive and non-significant μ_1 and a positive and also non-significant correlation. The value of the predicted correlation is now smaller than that obtained in Table 8. In this case, we can interpret that the "complementarity" obtained in the independent estimation was taking part in the positive relation of these unobservables.

6   Conclusion

The empirical test of the model proposed seems to support the idea that there is a "warm-glow" effect in the donation decision, and that all kinds of donations are somehow related.

In the organized case, we find an important relation between the two alternative but not exclusive contribution channels that the organizations offer: to contribute money and time. We find that availability of resources plays an important role in the decision of getting involved in both channels. We observe that the money donation decision is mainly influenced by the individual's socioeconomic situation, and that fiscal incentives play an important role. The time donation decision is mainly influenced by personal and social characteristics of the individual, and that in this case the incomplete information problem about the organization, partners in the volunteer position, and usefulness of the labor are important determinants of the decision.

In the non-organized case results, we find empirical evidence of the local public good idea presented in the model: the network, the fact of finding and seeing the need are the main determinants of the involvement decision.

Finally, we need to highlight the important relation among all donation types, organized and non-organized. As expected, we find an important positive relation among all contribution types, whatever their structure is. The common fact on all cases is the importance of the asymmetry of information. In the organized case, general beliefs and past relations help to diminish this problem. In the help case, the personal network provides the needed information. In the street giving case, this problem does not seem to have a clear solution: if there is no institution involved, there is no way that the donor can get information about the use his contribution will have. This opens the door to future research.

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TABLE 1 ; Relation between objective and subjective income information

TABLE 1

	"high" income (over $25000)	"low" income (below $25000)
belief over mean income	282 20.78%	22 1.62%
don't belief over mean income	745 54.94%	307 22.64%

TABLE 2 and TABLE 3;Money and time giving relation

TABLE 2 : Non-religious contributions

	non-religious money donor	non non-rel. money donor
non-religious time donor	501 36.95%	183 13.50%
no non-rel. time donor	298 21.97%	374 27.58%

TABLE 3: All organized contribution types

	money donor	no money donor
time donor	643 47.42%	118 8.70%
no time donor	324 23.89%	271 19.99%

TABLE 4: SIMULTANEOUS SYSTEM FOR MONEY AND TIME NON-RELIGIOUS DONATIONS

	VOLUNTEER MONEY NON-RELIGIOUS	VOLUNTEER TIME NON-RELIGIOUS
	coefficient (std. error)	coefficient (std.error)
born in US	0.2165159	
	(0.109161)**	
white	0.264482	
	(0.1005285) **	
belief below mean income	-0.2006227	
	(0.0811118)**	
high school	0.3121836	
	(0.1093375)**	
junior college	0.603561	
	(0.1908756) **	
bachelor	0.7537068	
	(0.1971672)**	
graduate	0.5442055	
	(0.1684311)**	
age from 30 to 45 years	0.1201453	-0.0368235
	(0.0937833).	(0.0961793) .
age from 45 to 65 years	0.4165618	-0.4494291
	(0.1107336)**	(0.118934) **
more than 65 years	0.3675695	-0.191971
	(0.125736) **	(0.158911) .
constant	-0.6775573	-0.2745827
	(0.2146244) **	(0.1684397) *
help		0.2588364
		(0.0835979) **
homeless		0.2748263
		(0.0842811) **
size place of interview		-0.0000602
		(0.0000295) **
trust in people		0.1516634
		(0.07451) **
working part time		0.2911506
		(0.1220511)**
temporally not working		-0.4086951
		(0.2211583) *
unemployed		-0.1395353
		(0.2073946).
retired		-0.1599294
		(0.1277137) .
student		0.3102839
		(0.1746412) *
keep house		-0.1951691
		(0.1029159)*
number of sibs		0.0103957
		(0.0058533) *
divorced		-0.101624
		(0.0808646).
widowed		-0.2165018
		(0.1227523)*
separated		-0.0960739
		(0.1592292) .
never married		-0.2964641
		(0.1057649) **
γ1	0.4561547	
	(0.1023347)**	
γ2		0.5568752
		(0.0967991) **
ρ	-0.6030777	
	(0.1373504) **	

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

TABLE 5 : Relation between help and street giving variables

	helps	does not help
contributes in the street	421 31.04%	88 6.49%
does not give in the street	581 42.85%	266 19.62%

TABLE 6 : PROBIT ESTIMATION OF THE HELP NEEDY PERSONS DECISION

	All	Women	Men
	(1).	(2).	(3).
attendance to religious services	0.278	0.315	0.236
	(3.16)***	(2.63)***	(1.74)*
money donor non-religious	0.179	0.199	0.141
	(2.11)**	(1.65)*	(1.13).
time donor non-religious	0.327	0.495	0.163
	(3.91)***	(4.06)***	(1.36).
homeless contributor	0.435	0.384	0.492
	(5.16)***	(3.20)***	(4.01)***
city50 to 250000 habitants	-0.099	-0.266	0.065
	(0.76).	(1.49).	(0.33).
suburb large city	-0.02	-0.145	0.115
	(0.16).	(0.82).	(0.61).
suburb medium city	-0.112	-0.208	-0.017
	(0.84).	(1.07).	(0.09).
large city	-0.209	-0.285	-0.041
	(0.92).	(1.01).	(0.1).
medium city	0.035	0.388	-0.16
	(0.14).	(0.91).	(0.47).
city10 to 49999 habitants	0.168	0.345	0.023
	(0.94).	(1.3).	(0.09).
town greater than 2500 hab.	0.583	0.958	0.326
	(2.82)**	(2.70)***	(1.15).
smaller areas	-0.003	-0.203	0.334
	(0.02).	(0.97).	(1.25).
open country	0.201	0.06	0.275
	(0.61).	(0.14).	(0.52).
age from 30 to 45 years	0.017	-0.119	0.158
	(0.15).	(0.77).	(0.99).
age from 45 to 65 years	0.108	0.067	0.123
	(0.92).	(0.39).	(0.74).
more than 65 years	-0.471	-0.359	-0.866
	(2.66)***	(1.54).	(2.84)***
high school	-0.175	-0.071	-0.306
	(1.5).	(0.44).	(1.74)*
junior college	-0.083	0.181	-0.287
	(0.44).	(0.67).	(1.04).
bachelor	-0.488	-0.456	-0.556
	(3.27)***	(2.14)**	(2.56)**
graduate	-0.509	-0.476	-0.479
	(2.88)***	(1.78)*	(1.95)*
part time worker	0.25	0.258	0.251
	(1.71).	(1.38).	(0.99).
temporally not working	0.259	0.234	0.273
	(0.95).	(0.59).	(0.71).
unemployed	0.471	-0.086	1.038
	(1.51).	(0.2).	(1.94)*
retired	0.108	0.076	0.393
	(0.63).	(0.31).	(1.42).
school	-0.32	-0.621	-0.007
	(1.36).	(1.75)*	(0.02).
house keeping	-0.19	-0.198	-0.336
	(1.39).	(1.3).	(0.63).
Sex	-0.269		
	(3.23)***		
Constant	0.521	0.494	0.307
	(3.11)***	(2.17)**	(1.3).
Observations	1356	747	609

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

TABLE 7: PROBIT ESTIMATION OF THE STREET GIVING DECISION

HOMELESS	
help contributor	0.4650239
	(0.0859579)**
money donor	0.1559181
	(0.0887824) *
time donor	0.170931
	(0.0779369) **
little mass transportation expenditure	0.1890472
	(0.0778038) **
little big cities expenditure	0.1885329
	(0.0818131) **
size living place (in hab.)	0.0004981
	(0.000141) **
city bigger than 7323 th. hab.	-3.027935
	(0.000141) **
city between 7323 and 1586 th. hab.	-0.9374458
	(0.4507847) **
age from 30 to 45 years	-0.1242549
	(0.0967049) .
age from 45 to 65 years	-0.1371906
	(0.1030522) .
more than 65 years	-0.3372421
	(0.1278994) **
high income	0.1885089
	(0.0911766) **
belief over mean income	0.1557655
	(0.0870289) *
constant	-1.129301
	(0.1315337) **

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

TABLE 8: NON-ORGANIZED DONATIONS BIVARIATE PROBIT ESTIMATION

	HELP	STREET GIVING
money donor non-religious	0.1703515	0.1147652
	(2.09)**	(1.46).
time donor non-religious	0.3712603	0.2450708
	(4.63)***	(3.26)***
age	-0.0056629	-0.0049635
	(-2.51)**	(-2.29)**
sex	-0.2381408	
	(-3.22)***	
high school	-0.056036	
	(-0.52).	
junior college	0.0268902	
	(0.15).	
bachelor	-0.3450472	
	(-2.51)**	
graduate	-0.3029469	
	(-1.86)*	
little expenditure in big cities		0.1926434
		(2.41)**
little expenditure in mass transportation.		0.1501798
		(1.97)**
size of the living place		-0.0634799
		(-4.37)***
city between 1586 and 7232th. Hab.		0.2047292
		(0.93).
city greater than 7323 th. Hab.		0.3401305
		(1.61).
high income		0.160177
		(1.82)*
belief over mean income		0.1263845
		(1.48).
constant	0.8427686	-0.3110387
	(5.31)***	(-2.14)**
Correlation error terms		0.2831583
		(5.58)***

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%