# Social Influences and the Designation of Charitable Contributions: Evidence from the Workplace

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This paper investigates factors that influence an individual's choice of which charity to contribute to, focusing on the role of social influences. Selecting one of the over 800,000 charitable organizations in the country can be a daunting task. Social influences may help individuals narrow down the set of choices they want to consider. Measuring social influences is challenging due to several factors: group selection may be based on unobservable tastes, there may unobservable shocks that affect all group members, and the behavior of all group members is determined simultaneously. Proprietary data from the workplace giving campaign of a large national company are used. These data contain detailed information, which can be used to overcome the difficulties often associated with measuring social influences. Employees are allowed to contribute to any nonprofit organization. The results suggest that the designation of an individual gift is affected by social influences.

# 1. Introduction

For those who have decided to make voluntary contributions, determining which of the over 800,000 nonprofit organizations to contribute to can be a daunting task. A variety of factors may influence an individual's selection, such as the services provided, financial information, geographic focus, and personal experiences. This paper addresses an additional possible factor influencing choice: whether or not social influences play a role in determining which nonprofit organization an individual will choose to contribute to. If social influences play a role, then we expect individuals to make contributions to the same organizations as their peers. These effects are studied in the context of a workplace giving campaign.

Carman (2004) finds evidence that social influences play a role in the private provision of public goods. It examines the relationship between peer behavior and individual participation in or contributions to a workplace campaign. There are several reasons why social influences may not play as significant a role in the selection of a nonprofit organization to contribute to. Currently there are over 800,000 nonprofit organizations in the United States. The large number of organizations suggests some diversity in tastes for nonprofit organizations. Given this overall diversity in tastes within any given group of contributors, a diverse selection of recipient organizations would not be surprising. For social influences to occur there must be some social interaction and some discussion of peer behavior. However, in workplace giving campaigns such as the one studied here, participation decisions are typically observable, while designation decisions are not. In order to protect individual privacy, peers usually do not observe an individual's designation; however campaign team leaders typically can observe which of their team members has participated. Social pressure to engage in an observable activity is likely to play a more significant role in individuals' decisions than social pressure to engage in unobservable activities, where there is little potential for recourse if the individual fails to engage in the encouraged activity. Finally, in models of the private provision of public goods without warm glow, crowding out of individual contributions is often predicted. This occurs because what matters is the total provision of public goods, not the source of the contribution. With crowding out, the contributions of others are a substitute for an individual's own contribution. Thus if individuals were able to observe the designation decisions of their peers, they might be more likely to substitute away from the organizations selected by their peers and instead give to something else.

Despite these arguments against social influences on the designation decision, there are compelling reasons why social influences may have an effect. An individual's peers could provide information about the quality of a nonprofit organization causing that individual to give to the same

2

organizations as their peers. Social influences could occur if individuals have a desire to conform to the behavior of their peers. In some settings, individuals may want to counteract the contributions of their peers, for example a democrat might want to counteract the contributions of a republican. Alternatively, cognition could play a role: the behavior of one's peers may alert individuals to a wider variety of options.

Models of the private provision of public goods typically describe the relationship between the consumption of private goods and a single public good. Several previous papers have alluded to the existence of multiple privately provided public goods, although this is rarely addressed directly. The vast majority of theoretical papers on the private provision of public goods consider only one public good, however several address the characteristics an individual will consider when deciding whether to make a contribution to a particular public good.[1] Among empirical papers, either total charitable contributions or contributions to one particular organization are examined. One notable exception is Andreoni, Brown and Rischall (2002), which examines the differences between men's and women's choices of types of organizations to support and the effects of bargaining among married couples regarding charitable contributions. They find that men and women have significantly different tastes in charitable organizations. Smith, Kehoe, and Cremer (1995) look at the relationship between past contributions to any public good, and the likelihood that households in rural Montana will contribute to a local health care facility. They find that "altruistic history" plays an important role in households' future contribution decisions. However, none of these papers directly address the question of the choice between public goods.

The methods used here will address the question of how individuals choose between public goods and of whether the contributions of others are substitutes or complements for an individual's own contributions, when multiple public goods are provided. If the contributions of others are substitutes, as implied by models of crowding out, then individuals will not give to the same organizations as their peers. If they are complements of individual contributions then we would expect individuals to give to the same organizations as their peers.

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[1] Some examples include: Andreoni (1998), Vesterlund (2002), and List and Lucking-Reiley (2002). Andreoni (1998) suggests that individuals will only make contributions when some minimum threshold of total contributions has been met. Vesterlund (2002) examines the role of the quality of the public good. Both Andreoni and Vesterlund consider these effects in models where individuals respond to the early contributions of leadership givers. List and Lucking-Reiley (2002) examine the effects of donor knowledge about seed money.

In this paper, social influences are measured in a context involving the private provision of public goods: workplace fundraising for charities. Individual giving behavior is affected by social influences when social contact causes the individual to change his or her giving behavior. Social influences occur when individual designation decisions are different depending on whether or not there is social contact, holding constant the set of possible contributors, individual characteristics and the other environmental factors. If there were no social influences, individual giving behavior would not change when social contact was initiated. Social influences could arise from either the giving behavior or the characteristics of one's peers, referred to as endogenous effects and contextual effects respectively. For example, social norms, pressure to conform, and information provision by a peer represent possible causes of social influences due to endogenous effects. Social influences due to contextual effects could arise if an individual is more likely to give to an organization that provides services for the handicapped when one of his or her peers is handicapped, for example. Social influences could occur between many people, this paper focuses on social influences within groups of people who work together and interact on a regular basis.

Social influences must be carefully defined in the context of public goods, where individual giving behavior is likely to be affected by the overall contributions of others due to crowding out. Crowding out does not represent a social influence. Social influences do not include correlation between individual behavior and peer behavior caused by experiencing the same externally determined environmental factors. For example, city wide natural disasters, characteristics of the local United Way, and having an office in the same building as the local Red Cross represent common shocks, not social influences. Social influences are studied in the context of workgroups. These groups are defined by their physical proximity and assignment to the same work group, which allows identification of people who know each other.

There are a variety of unobservable factors that could cause individuals in the same group to behave in the same way. Common unobservable shocks to a group or group selection based on unobservable factors correlated with the taste for giving could cause individuals in the same group to give to the same organizations. In addition, there may be a correlation between the proclivity toward giving and characteristics associated with valuable employees. However, given a taste for giving in general, selection into work groups is unlikely to be correlated with a taste for a particular nonprofit organization.

This paper uses data from a large national bank that contains information about all of their employees and their workplace giving campaign. The company operates an open campaign. This means

4

that employees are allowed to designate that their contributions go to any organization they choose. Historically, workplace giving campaigns have been centered around raising funds for the local United Way. Recently, many companies have opened their campaigns to allow donations to more organizations. While completely open campaigns, such as the one operated by this company, are still uncommon, many companies allow contributions to a variety of nonprofit organizations. 20% of employees designate their contributions to nonprofit organizations other than the United Way. Over 600 United Ways and approximately 6000 other organizations receive contributions. Both contributions to the United Way and contributions to other organizations could be affected by social influences.

Data from Giving USA (2002) provides benchmark information on the allocation of charitable contributions to different types of organizations. In 2001, 38.2% of contributions from all sources were to religious organizations, 8.7% to health, 9.8% to human services, 15.0% to education, 3.0% to animals, wildlife, and the environment, 5.6% to public society benefit[2], 5.7% to arts and culture and 2.0% to international organizations. These numbers are fairly constant over time. The Survey of Giving and Volunteering in the United States (2001) focuses on individuals' contributions and finds 53.3% of contributions go to religious organizations, 5.8% to health, 15.3% to human services, youth development, and adult recreation, 10.1% to education, 2.6% to animals, wildlife, and the environment, 1.8% to public society benefit, 2.6% to arts and culture and 1.1% to international organizations. In addition, this survey finds that the most important reason that people give for making contributions is being asked to give by someone they know well. The allocation of funds in the data used in this paper are quite different from the allocation of overall contributions reported in Giving USA and the Survey of Giving and Volunteering in the United States. This is not surprising due to the focus on the United Way in many workplace campaigns. Even if individuals choose to contribute to other organizations, there may be a framing effect causing them to primarily contribute to health and human services organizations.

The workplace is a good setting to study social influences because social groups are clearly defined and observable.[3] With this dataset, it is possible to overcome many of the problems typically associated with measuring social influences. In addition, the variety of organizations represented here makes these data particularly valuable. With many recipient organizations and observable social groups it is possible to examine how individual contributions are affected by the contributions of their peers and

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[2] Public Society Benefit organizations support civil rights, community improvement and development, academic research, philanthropy and voluntarism, public affairs, and government organizations.
[3] Other papers have also considered the role of social influences in the workplace, such as Duflo and Saez (2002 and 2003), Sorensen (2002), and Ichino and Maggi (2001).

determine whether the contributions of others are substitutes for or complements of individual contributions to the same public good.

This paper considers social influences on the decision to contribute to several specific nonprofit organizations. First, the effect of the proportion of one's peers giving to organizations other than the United Way on the individual's choice to give to the United Way or to designate to some other organization will be considered. Second, the correlation between the proportion of peers choosing each organization and the likelihood that the individual will also choose the same organization is examined. Finally, several specific choices are studied independently. There is evidence of that an individual's choice of a charity to contribute to is influenced by the choices of their peers.

Section 2 describes the additional data used to study designation decisions. Section 3 discusses literature on measuring social influences and how it informs the methods used in this paper. Section 4 presents the results. Section 5 concludes.

## 2. Data

This paper uses data from the workplace giving campaign of a large national bank in 2001. At that time, the bank had over 75,000 employees and operated in over 20 states. The provider of the data for this project has asked to remain anonymous; therefore detailed information regarding the company is not included. For confidentiality reasons, the size of the sample is not divulged; however the sample size is large (generally in the tens of thousands) and will not negatively affect statistical significance. The data contain information related to employment, contributions and demographics for all employees as of September 2001. The data also contain similar information for most of those employees from September 2000. The company allows contributions to any registered 501(c)(3) and the structure of the campaign is roughly the same across all locations. The company does not match contributions. Table 1 provides summary statistics about the employees and their participation in the giving campaign.

The data used here are unique in two respects. First, detailed information on social groups is available. Second, individuals are free to give to the organization of their choice and the recipient organization is observable. In survey data, such as the Survey of Consumer Finances, social groups are not observable and the recipient is often unknown.[4] When the source of contribution data is a non-profit organization, only gifts to that organization are recorded. By using data from an open workplace giving

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[4] General categories (such as Religion and Health) are sometimes available.

campaign, information on both social groups and the recipient organization are available. In addition, selection bias problems may be less significant than in other social settings. While social groups outside of work may form on the basis of interest in similar causes, it seems unlikely that within the workplace groups are formed in this way.

The data contain two variables that allow us to define groups of people who are likely to know each other and interact on a regular basis: the mail code and the campaign team. The mail code identifies people who work in close physical proximity; it is used by the company to deliver mail to employees. Mail codes are 10 digit codes that identify the state, building, and floor where an employee works. In large buildings, there can also be multiple areas defined within a floor. There are approximately 10,500 mail codes, and over 50 percent of employees are in mail codes of 19 or fewer people.

Each employee is assigned to a campaign team. Teams are based on location and line of business and are normally intended to have between 5 and 75 employees (although the actual sizes range from 1 to 573). Over 50 percent of employees are on teams of 20 or fewer people. Campaign teams are intended to overlap with actual work groups and are based on physical location and department. Team assignments are not based on other characteristics, such as demographics or giving history. Teams are also assigned a team captain. For many teams, the workgroup manager serves as the captain. Captains are selected based on officer status, level within the company, and contribution history. In addition, preference is given to people who have served as a team captain in the past. However, serving as a team captain is voluntary, thus an alternate may be chosen. In some cases a team may have no captain, if the first candidate refuses or leaves the company and a replacement cannot be found. Team captains are expected to provide information about the campaign, answer questions, and encourage participation. Team captains are assumed to be part of the social group, thus social influences include the effects of their behavior.

Some methods will make use of changes in group composition over time. In these methods, it is not possible to examine social groups based on campaign teams. The definitions of teams are not consistent over time. Mail codes, on the other hand, are defined similarly in both years, and therefore can be used to examine changes in social groups. An individual is designated as a mover if their physical location changes, however if 85% of employees in a location move together or their group is subsumed into another location, they are classified as not moving.[5] Using mail codes to identify people who change groups over time implies that approximately 65% of employees stay in the same group. If teams were

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[5] A number of different definitions of moving were tested. The results are robust to small changes in the definition of who moves and who stays in the same location.

used to determine who moved from one year to the next that would imply that nearly 80% of individuals moved, confirming that teams were not consistently defined over time.

Giving campaigns that allow employees to make contributions to nonprofit organizations through regular payroll deductions are a common fixture in the workplace. Historically, campaigns offered little choice; employees could only give to one organization, often the local United Way. However, campaigns have begun to offer more choice. Open campaigns offer the most choice, allowing employees to make contributions to any 501 (c)(3) organizations. While the campaign examined here is open, the United Way plays a prominent role and is the central focus of campaign literature and information.

Each employee who participates in the campaign must select a non-profit organization to receive his or her contribution. There are no restrictions on the choices of which organizations to give to. However the individual can contribute to no more than one organization. The data contain the name of all recipient organizations. Over 600 United Ways and approximately 6,000 other organizations received contributions through this campaign. The majority of participants (over 80% in 2001) chose to give to their local United Way. Giving to an organization other than the United Way is sometimes referred to as designating.

The goal of this investigation is to examine whether individuals behave in the same way as their peers. With so many organizations represented, it would not be possible to examine each organization separately. One of the methods used here will be a choice model, estimated with a conditional logit. It would be computationally unfeasible to estimate a choice model with over 6,000 choices. Therefore the organizations were grouped to create a more manageable number of choices.

In addition to the computational explanation, there are a number of other reasons why it makes sense to classify organizations into a smaller number of groups. First, there are a number of organizations represented that have many local chapters that are listed separately in the data, such as the United Way, the Red Cross, and the Boy Scouts and Girl Scouts. While each organization may be functionally separate, it is not clear that donors would make those distinctions. Second, organizations may have very similar names in order to encourage mistakes by donors: for example: the American Heart Association and the National Heart Association.[6] Third, the data used here contain exact names the individual put on his or her form. It is possible that individuals could make mistakes on their designation forms; for

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[6] See http://www.americanheart.org/presenter.jhtml?identifier=4667 for information from the American Heart Association about the National Heart Association.

example, the Community Foundation Silicon Valley is often mistakenly called the Silicon Valley Community Foundation. Fourth, social influences to contribute to certain organizations such as churches and schools, which may be better classified as a club goods and not public goods, may take a different form. Rather than encouraging others to contribute to the exact same organization, in these cases social influences may encourage others to give to a similar organization. For example, if an individual talks about making contributions to his church, he may not encourage contributions to his church, but may encourage others to contribute to their own church. In these data, 0.9% give to churches and 0.7% give to schools.[7] Similarly, one of the classifications created is for contributions to organizations that deal with pregnancy. However, these organizations could take very opposing positions. Some organizations encourage the use of birth control and provide abortions. On the other end of the spectrum are organizations that actively try to prevent abortions. In these cases, an individual could choose to make a contribution to counteract the contributions of their peers. However, this still can represent a social influence.

Each organization was classified into one of 35 types based on the focus of the program areas. Large national organizations with many branches, such as the United Way, the Red Cross, and the Boy Scouts and Girl Scouts, were each placed in their own categories. United Ways were separately identified in the original data. Smaller organizations that primarily serve a specific geographic area were grouped according to the services they provide. Some examples of types include hospices, rape and abuse counseling, children's services and churches. The program areas of each organization were obtained from Guidestar.org.[8] In cases where multiple organizations across the country had the same name, an individual's contributions were assumed to go to the organization in the closest proximity to that individual's workplace. In cases where Guidestar did not contain information about the organization, a search for the organization was conducted on the internet, or in a small number of obvious cases, organizations were assigned to a type based on their name.[9] For example, organizations with the word "church" in their name that could not be found in Guidestar or on the internet were classified as churches;

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[7] In the data used in this paper less than 1% of individuals give to religious organizations, however, overall giving statistics indicate that over half of all donations go to religious organizations. This suggests that contributions made in the workplace giving campaign represent only a portion of employees total giving.

[8] Guidestar publishes information on most of the countries non-profit organizations, including their federal 990 tax forms and a description of program areas. Much of the information is provided to Guidestar by the non-profit organization. Guidestar is intended to provide detailed financial information to potential donors who wish to investigate organization before making a donation.

[9] Guidestar does not always contain information for churches or very small organizations that are not required to file a 990 form. In addition, some contributions were made to specific programs provided by a larger non-profit organization.

similarly, some schools and hospices were classified in this way. The 35 groups and the proportion of contributors choosing those types of organization are included in Table 3.

These 35 types of organizations were then classified into ten broad categories. The broad categories were roughly based on the categories used by Giving USA: Health, Human Services, Public-Society Benefit, Education, Arts and Culture, Religion, Environmental and Nature, and International. Two additional categories were also created for this research. Contributions to umbrella organizations such as the United Way are typically included in the public/society benefit category, however because of the United Ways' prominent role in workplace giving campaigns it is included as its own category. Similarly, contributions to September 11 relief organizations were put in a separate category.[10] Contributions to the United Way's September 11th Fund are included in the September 11 category, not the United Way category. The ten categories and the proportion making contributions to organizations in each category are included in Table 3.

## 3. Methods for Measuring Social Influences

The methods used in this paper are influenced by previous literature on social influences and peer effects. In a seminal article on the topic, Manski (1993) describes what has become a commonly used linear-in-means model to measure social influences, where individual behavior is a function of the individual's characteristics, average peer behavior, average peer characteristics, and unobservables. In the literature and the methods used here, two types of social influences are considered. First, endogenous effects occur when an individual's behavior is influenced by the behavior of their peers. Second, contextual effects occur when an individual's behavior is influenced by the characteristics of their peers. As is shown in Manski (1993) it is not possible to separately identify these two types of effects, in part because peers' characteristics determine peer behavior. In this paper, social influences are defined to include both types of effects. When attempting to measure endogenous and contextual effects, the results must be interpreted carefully. Because of the high collinearity between peer behavior and peer characteristics, their effects on individual behavior should be considered separately. Unless one type of effect can be ruled out, the measured coefficients on peer behavior or peer characteristics will capture both endogenous and contextual effects. Therefore these coefficients should be interpreted as attempting to measure social influences. This paper will estimate models that include peer behavior and peer characteristics separately.

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[10] There was great misunderstanding among the public about what exactly various September 11 relief organizations did. For most donors, the goal was to support victims of September 11, rather than a particular type of organization such as human services. See Wetzstein (2001) for more details.

Social influences on the choice of charity are difficult to measure due to the problems of unobservable environmental factors affecting all members of the same group, simultaneity and group selection.[11] Each of these issues could lead to a correlation in behavior among peers that is not due to social influences. If there are unobservable environmental factors or common shocks that affect all members of the same group but not members of other groups, such as a local natural disaster, then we would expect individuals in the same group to behave similarly. In order to address the possibility of common shocks at the group level, fixed effects are included for each group. The second problem, simultaneity, is often referred to as the reflection problem. This problem arises, because individuals and their peers act simultaneously, making it impossible to tell who is the influencer and who is the influenced. Following Case and Katz (1991) peer characteristics are often used as an instrumental variable to correct for biases due to simultaneity. Combining these two methods provides the best estimate of social influences using cross sectional data. The data for this project contain two years of information. Using the panel data, it is possible to improve upon the estimates from the cross sectional methodology. A first difference approach is used to address problems surrounding group selection.

The panel data methods that address the change in behavior over time are designed to remove the problem of group selection. The problem of group selection arises if individuals are selected into groups based on unobservable characteristics that are correlated with their taste for giving, causing a positive correlation in their behavior without any social influence. If we assume that individuals are selected based on permanent characteristics, then this problem can be resolved by looking at the change in individual behavior as a function of the change in the behavior of their peers. However, this method will not correct for biases due to selection based on transitory characteristics. The problem of group selection may be less significant when considering the choice of a specific nonprofit organization, as opposed to charitable giving in general. Individuals may be selected into jobs based on characteristics that are correlated with their overall proclivity for charitable giving. It is arguably less likely that individuals are selected into jobs based on characteristics that are correlated with their proclivity for giving to specific nonprofit organizations.

Using panel data does not resolve the issue of common shocks or simultaneity, so fixed effects and instrumental variables must still be used. The instrument for peer behavior should capture changes in peer characteristics over time. There are two sources of variation in peer characteristics: changes in the

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[11] These problems and the methods used to correct for them, are discussed in greater detail in Carman (2004).

characteristics of the individuals who make up the group and changes in group composition. One example of the first type of change is aging; if all of the members of a group stay the same, over time the average age will increase. Changes in group characteristics are more important. Group composition changes occur when people leave or join the group. It is these changes that we are interested in. In order to exclude the first type of change, peer characteristics in the first year are used as an instrument, but are broken down into the characteristics of stayers, leavers, and joiners to capture changes in characteristics due to changes in group composition.

Another issue that is discussed in the literature is the problem of appropriately defining an individual's peer group. While this is primarily an empirical issue, it is valuable to address this issue here as well. Carman (2004) develops a more formal framework where each individual is a member of a group and a subgroup within that group. Common shocks are assumed to occur at the group level, while social influences are assumed to occur at the subgroup level. For example, the group might be defined broadly by the local United Way with the subgroups defined by the team in that area. In this case, group fixed effects will control for characteristics of the local United Way or the city, and social influences within the mailcode or team will be measured. Alternatively, groups could be defined narrowly by mail codes with the subgroups defined by demographic characteristics, such as age. In this case, group fixed effects will control for factors that effect all members of the mail code, such as a location next to the local Red Cross, and social influences between people with similar demographic characteristics will be measured. With the inclusion of group level fixed effects to control for common unobservables, it can be shown that the coefficient on the average behavior of those in one's subgroup measures whether social influences are stronger within the subgroup than within the group. A positive coefficient on subgroup behavior indicates the social influences are stronger at the subgroup level than at the group level. A negative or insignificant coefficient implies that social influences are not stronger at the subgroup level, and that this subgroup may not be a good approximation of actual social groups. In the results section of this paper, both broad and narrow definitions of groups and subgroups will be considered.

The methods and the problems associated with measuring social influences in this paper are very similar to those in much of the literature on social influences or peer effects. There is one notable exception which arises due to the large number of discrete choices faced by employees in the context of selecting a recipient organization. Manski's model considers a continuous dependent variable. Sometimes this methodology is extended to a dichotomous choice model. However, in this setting individuals face a discrete choice with a multitude of options; they may give to any type of organization but may only give to one organization. While some papers, such as Sorensen (2001), have examined

choices between multiple options, the number of options is usually relatively small. Employees in Sorensen's data face a decision between approximately 5 health plans. In contrast, in this paper, over 6000 different recipient organizations are observed.

Two methods are used to address the large number of options. The first method closely follows previous research on peer effects and focuses on dichotomous choices between one organization and all other organizations. For example, one set of results looks at the effect of the proportion of the peer group designating their gifts to organizations other than the United Way on whether individuals give to the United Way or to designate their gift to any other organization. In addition to the choice to designate or not, several of the most common designation choices are separately considered. The decision to give to health charities, children's organizations, local Red Cross chapters, and September 11 relief organizations are examined. Each case will use peer characteristics as an instrument for peer behavior and fixed effects to control for unobservable common shock. Panel data will be used to examine changes in behavior over time, to correct for group selection. Obviously there were no contributions to September 11 organizations in the first year of the data, so it is not possible to estimate the first difference model. However, due to the enormous amount of publicity surrounding charitable contributions following the September 11 attacks this category can not be ignored.

The second method will examine which of the 10 categories or 35 types of organizations an individual chooses. Typically, these questions are addressed with conditional logits, or multinomial logits. Conditional logit models typically contain independent variables that vary over the choices, but are constant for each person, such as characteristics of the choices. Multinomial logit models typically contain independent variables that vary across individuals, but are constant over all of the choices. One example of this would be characteristics of the individual. However in this case we want to control for characteristics of the individual and characteristics of the choice, namely the proportion of an individual's peers who select that choice. This suggests the use of a hybrid of the two models, following the methodology of a McFadden (1974) choice model. These conditional logit models cannot correct for the problems of simultaneity, group selection, and common shocks. Therefore, these models can only illustrate the high level of correlation between individual and peer behavior. However, they can give give insight into which options are most likely to be chosen controlling for peer behavior, while jointly considering all choices and which areas of giving exhibit the most clustering.

For the most part, the methods used in this paper mirror those used previously in the literature on peer effects, particularly those in Carman (2004). The differences primarily stem from the fact that when

considering gift amounts and participation, individual choices are limited. However, when the choice of which organization to give to is considered, individuals face a multitude of options. Group level fixed effects, instrumental variables, and changes over time provide the best ways to control for the problems of common shocks, simultaneity and group selection, and are therefore the basis for the methods used in this paper. A choice model allows us to examine clustering across a wide variety of options, but can not control for the aforementioned problems, and therefore only provides suggestive evidence of social influences.

## 4. Results

### 4.1 The Proportion of Peers Designating to Organizations Other than the United Way

In a workplace giving campaign that focuses on giving to the United Way but allows other contributions, social influences may play a role in whether individuals choose to designate their contributions to another organization. The word designate refers to giving to an organization other than the United Way. While the majority chooses to give to the United Way, 19% make contributions to other organizations. The first series of regressions will address whether social influences affect an individual's choice between the United Way and all other organizations. If a positive coefficient is estimated in these regressions, it can either be interpreted as a positive correlation between the proportion of one's peers giving to the United Way and the probability that the individual will give to the United Way, or as a positive correlation between the proportion of an individual's peers choosing to designate and the likelihood that the individual will choose to designate. In all regressions, the sample will include only those employees who made some positive contributions.

The choice between the United Way and all other organizations is particularly important. On the most basic level, these regressions will highlight the role of social influences on the decision to give to the United Way. On a deeper level, this choice highlights the complexity associated with targeted giving. Because of the prominent role played by the United Way in workplace giving campaigns, selecting the United Way represents a simple choice. In this campaign individuals can select the United Way or write in the name of any other organization of their choosing. In order to choose something else, the individual must engage in some work: they must select an organization to support. If an individual's peers provide no social influences to give to organizations other than the United Way, that individual may not see any reason to engage in any additional research and thought. In addition, the United Way is an umbrella organization that supports a wide variety of other organizations. Most individuals who give to the United Way can feel confident that at least some of their money will go to support something they believe in. There could be social influences that encourage individuals to make more targeted gifts in order to see

more of their money supporting organizations that they believe in. Finally, because of the sometimes controversial nature of United Ways, social influences to not support the United Way are possible. People who feel strongly about causes that are not supported by their local United Way (such as Planned Parenthood) may encourage their peers to give elsewhere, and yet not provide any specific suggestions about what to support. Individuals are likely to choose organizations other than the United Way in two distinct situations: first, if they feel strongly about some other organization, second, if there are others in their social group providing information and encouraging them to make more targeted contributions. Under the first scenario, there is no reason to expect any clustering within social groups.

Table 4 presents the results of the cross sectional analysis of the effect of individual characteristics and the proportion of the mail code who designates on the likelihood that an individual chooses to designate their funds to an organization other than the United Way. This regression was estimated using two stage least squares, with subgroup average characteristics as instruments for the proportion of the subgroup that gives to organizations other than the United Way. It also includes group level fixed effects to control for group level common shocks. Individuals who earn more money, are older, have been with the company longer, and are selected to be team captains or pacesetters are more likely to designate. Men are less likely to designate than women. Individuals whose peers designate are also more likely to designate than those whose peers do not designate. If the proportion of peers who designates increases by 10 percentage points (roughly equivalent to 2 more people for the average sized group) an individual is 5.7 percentage points more likely to designate. Considering that only 19% of employees designate, this effect is significant.

Table 5 presents the results from this estimation for five different group-subgroup pairs: United Way-mail code[12], United Way-campaign team, mail code-gender, mail code- salary quartile, and mail code-age group. By including group level fixed effects and using instrumental variables, the problems of simultaneity and group level common shocks are addressed. When groups are defined broadly by the local United Way, the coefficient on peer behavior represents social influences within larger social groups. When groups are defined narrowly by the local mail code, the coefficient on peer behavior represents possibly stronger social influences that may occur within smaller social groups. There is evidence for social influences for four out of five definitions of groups and subgroups. When groups are

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[12] Defining groups by the Local United Way is approximately equivalent to defining groups by city or county. This also makes it possible to control for unobservable characteristics of the local United Way, such as marketing campaigns.

defined at the United Way level, a 10 percentage point increase in subgroup designations is associated with a 5.1 to 5.7 percentage point increase in the probability that the individual will also designate.

When groups are defined at the mail code level, the estimates of social influences are less consistent. There is no significant correlation between peer designation and individual designations when gender defines subgroups. This suggests that social influences are not stronger among individuals of the same gender. For age groups and salary quartiles there are significant correlations between peer behavior and individual behavior. The effects among salary quartiles are significantly larger than those among age groups. A 10 percentage point increase in subgroup designations is associated with a 2.6 to 6.5 percentage point increase in the probability that the individual will also designate. This suggests that social influences to contribute to non-United Way organizations are stronger within salary quartiles and age groups than in the mail code as a whole.

The results reported in Table 5 suggest that social influences may play a role in an individual's designation decision and that peer contributions are complements of not substitutes for individual contributions. However, the potential problem of group selection based on characteristics associated with the proclivity for giving to particular organizations remains. Table 6 attempts to correct for this by using a first difference approach that takes advantage of changes in group composition over time. The most powerful methods for measuring social influences examine the change in contributions over time. However, with dichotomous choices, the applicability of these models is not completely apparent. An individual who gives to the United Way in both years will appear the same as an individual who does not give to the United Way in either year. It is not clear that social influences will affect these two populations in the same way. Therefore two approaches are considered. In both approaches, the sample will be limited to individuals who stayed in the same location from one year to the next, however, peer behavior will include the behavior of stayers, leavers and joiners.

First, the first difference is used. In this case, the effect of changes in peer behavior on changes in individual behavior is examined. The dependent variable can take on three values: -1 if an individual did not give to the United Way in 2000 but gave to the United Way in 2001, 0 if the individual did not change their behavior, and 1 if the individual gave to the United Way in 2000 but did not give to the United Way in 2001. These results are reported in Table 6. The change in an individual's designation decision is regressed on the change in the proportion of their peers designating. In all cases, instruments based on the change in peer group composition are used to correct for simultaneity and fixed effects are included. The characteristics of stayers, joiners and leavers are jointly used as instruments for subgroup behavior. When

groups and subgroups are defined broadly, a 10 percentage point increase in the proportion of the subgroup that designates is associated with a 5.0 to 10.0 percentage point increase in the probability that the individual will also designate. Larger social influences at the team level are not surprising, because team captains are explicitly expected to attempt to influence their peers. When groups and subgroups are defined narrowly, there is again evidence of stronger social influences among individuals within the same age group or salary quartile. A 10 percentage point increase in the proportion of the subgroup that designates is associated with a 4.5 to 6.9 percentage point increase in the probability that the individual will also designate. However, there is no significant evidence of stronger social influences among subgroups defined by gender.

Second, the effect of changes in peer behavior on individual behavior, conditional on individual behavior in the previous year is considered. This method is the same as running the first difference method separately for those who designated their gifts to non-United Way organizations in the past and for those who gave to the United Way in the past. This method is relevant if you believe that social influences have a different impact on people who designate their funds to non-United Way organizations than on non-designators. Table 7 takes this approach to address the effect of changes in the proportion of peers designating. The sample is divided into three groups based on the designation decision in 2000. The first group chose to give to organizations other than the United Way in 2000, the second gave to the United Way, and the third did not participate in the campaign. In each case group level fixed effects are included and subgroup characteristics are used as an instrument for changes in subgroup behavior. Again there is evidence of social influences for all subgroups, except those defined by gender.

For individuals who designated their contributions to non-United Way organizations in 2000, the probability that they will do so again increases with the change in the proportion of their peers who designate. In this case there is evidence of social influences when groups are defined broadly and there is evidence of stronger social influences among individuals in the same salary quartile. There is not evidence of stronger social influences among individuals of the same gender or age group. When groups are defined by United Ways, a 10 percentage point increase in the change in the proportion of peers designated is associated with a 5.7 to 8.5 percentage point increase in the probability that the individual will again designate. When subgroups are defined narrowly by salary quartile, a 10 percentage point increase in the change in the proportion of peers designated is associated with an 8.6 percentage point increase in the probability that the individual will again designate. When subgroups are narrowly defined by gender and age group, there is not evidence of stronger social influences within demographic subgroups.

17

For individuals who gave to the United Way in 2000, there is evidence of social influences when subgroups are defined broadly and evidence of stronger social influences among individuals in the same salary quartile and age group. Again, there is no evidence of stronger social influences to designate among individuals of the same gender. When groups are defined by United Ways, a 10 percentage point increase in the change in the proportion of peers designated is associated with an 8.1 to 10.0 percentage point increase in the probability that the individual will again designate. When subgroups are defined narrowly by salary quartile and age group, a 10 percentage point increase in the change in the proportion of peers designated is associated with a 3.9 to 6.7 percentage point increase in the probability that the individual will again designate. When subgroups are narrowly defined by gender, there is not evidence of stronger social influences within subgroups.

For those who did not participate in 2000 but participated in 2001, there is again evidence of social influences when subgroups are defined broadly. When subgroups are defined narrowly by demographic characteristics, all point estimates of stronger social influences are positive, although not significant for subgroups defined by gender. This suggests that individuals who have not contributed before are more likely to designate when the change in proportion of their peers who designate increases. When groups are defined by United Ways, a 10 percentage point increase in the change in the proportion of peers designated is associated with an 8.7 to 14.0 percentage point increase in the probability that the individual will again designate. When subgroups are defined narrowly by salary quartile and age group, a 10 percentage point increase in the change in the proportion of peers designated is associated with a 6.3 to 8.4 percentage point increase in the probability that the individual will again designate. When subgroups are narrowly defined by gender, there is not evidence of stronger social influences within subgroups.

What is most interesting about Table 7 is that when groups are defined by United Ways and subgroups are defined by mail code the effects are stronger if the individual chose to contribute to the United Way in the past or did not contribute at all than if the individual designated in the past. The evidence of social influences tends to be strongest among those who did not participate in 2000. Giving to the United Way can be seen as controversial. Many people are hesitant to give to the United Way either because of past United Way scandals or because they disagree with the United Way's funding decisions, especially those related to Planned Parenthood or the Boy Scouts. These results could be interpreted as saying that it is hard for peers to convince those who have decided against the United Way in the past to change their minds, but easier to convince those who have supported the United Way to change their minds and no longer do so.

Table 8 examines the effect of subgroup characteristics on an individual's designation decision and includes group level fixed effects. This can be interpreted as measuring contextual effects, or as the reduced form estimation of the endogenous effects model. These results suggest that regardless of group and subgroup definitions, individuals are more likely to designate when their peers have higher salaries or have been with the company longer. The correlation between other group characteristics and individual designations are less clear.

The results presented in Tables 4 through 8 suggest that social influences play a role in an individual's decision to designate their funds or give to the United Way. The effects are stronger among subgroups defined by salary quartiles than those defined by age groups. There is also evidence of social influences in larger groups defined by physical proximity or by campaign team. There is little evidence that the behavior of others in subgroups defined by gender is significant.

**4.2 What if All Peers Contribute to the United Way?**

Only 19 percent of individuals in these data give to organizations other than the United Way. This section further investigates the characteristics of these individuals who deviate from the overall norms. There may be locations where individuals either don't realize that they can give to any organization or where they feel that it is not acceptable to move away from the majority and give to another organization. Both of these explanations could be the result of social influences, especially if individuals are unaware of their options because local team leaders do not provide them with this information. Including this dummy variable attempts to measure these possibilities. A negative coefficient indicates that if everyone else in one's group gives to the United Way, that individual is less likely to give to a non-United Way organization than an individual in a group where at least one other person does not give to the United Way.

The proportion of an individual's peers that designated is typically small, and in many cases is zero. In some sense those who do not give to the United Way are dissenting, they are explicitly not following the behavior of their peers. The results in Tables 9 and 10 attempt to identify which people are choosing not to give to the United Way. In these regressions a dummy is included if all other subgroup members give to the United Way.

In Table 9, groups are defined by the local United Way and subgroups are defined by mail code. The first model replicates the first row of Table 5, examining the effects of the proportion of peers

designating to non-United Way organizations. In column 2, a dummy that equals one if all peers give to the United Way is included instead. Having all peers give to the Untied Way is associated with 15.5 percentage point decreases in the probability that the individual will give to something other than the United Way. Since only 19% of individuals do not give to the United Way, this effect is significant and suggests that there may be locations where individual's are either unaware of their option to give to other organizations, or that they may not feel that this is truly an option. However when both the proportion and the dummy are included, in column 3, there is a negative but not significant coefficient on the dummy variable.

Table 10 presents the results of the first difference method. Here, the first column replicates the results from Table 6 when subgroups are defined by mail code. The second column looks at change in the dummy variable if all peers give to the United Way and finds no significant effect on the change in the individual's designation decision. When both explanatory variables are included, the change in the dummy still does not significantly affect the change in the individual's designation decision. Together these two tables suggest that the relationship between the proportion of peers designating and the probability that the individual will designate is not non-linear at zero.

**4.3 Social Influences and the Decision to Give to a Particular Type of Organization**

Tables 11, 12 and 13 present the results from conditional logit models of the choice of an organization to contribute to. When examining the choice between 10 categories, there are 10 observations for each person, one for each category. When examining the choice between 35 types, there are 35 observations for each person, one for each type. In each case the odds ratio represents the increased probability that the individual will choose the same organization as their peers as opposed to selecting the United Way. The results from each of these regressions merely indicate a correlation between an individual's choice and the choices made by their peers. This correlation is not necessarily indicative of social influences, as unobservable common shocks, group selection biases, and the simultaneity of their choices are not corrected for. Table 11 examines the probability that the individual will designate to a non-United Way organization if their peers designate. Model A in Table 11 finds that individuals are 2700 times more likely to choose the same organization category as their peers than to choose the United Way. The effect is even stronger when individuals choose among 35 types.

Model B allows for the possibility that this clustering is merely due to the differences in popularity of different types of groups by adding fixed effects for each choice. In this case, individuals are 7.9 to 8.6 times more likely to choose the same organization category or type as their peers than to

choose the United Way.  If the odds ratio were one that would suggest that peer behavior is not correlated with the individual's behavior.  Because the odds ratio is greater than one, this result shows that there is more clustering than there would be if individual's designations were randomly assigned to reflect the proportions giving to each category or type observed in the data.

Model C controls for individual characteristics.  Here individuals are 7.1 to 23.3 times more likely to choose the same organization category or type as their peers than to choose the United Way.  This result again shows that there is more clustering than there would be if individual's designations were randomly assigned to reflect the proportions giving to each category or type observed in the data, while controlling for the individual's characteristics.

Tables 12 and 13 allow the proportion of peers giving to each category or type of organization to have a different effect on the likelihood the individual will choose the same category or type.  These tables are sorted so that the categories or types with the most clustering are at the top.  Interpretation of these results is complex because the relationship is non-linear, each proportion is less than 1, and technically when the proportion giving to one group changes, the proportion giving to at least one other group must also change.  As an example, if the proportion of an individual's peers giving to Education goes from zero to 1, holding all other proportions constant (which is obviously not possible), the individual will be 60 times more likely to choose to give to Education than to the United Way.  What can be said is that there is more clustering for some categories of giving than for others.

Among the ten broad categories, shown in Table 12, contributions to Social Benefit and September 11 are the most clustered.  Contributions to international organizations are the least clustered, in fact having a larger proportion of one's peers give to international organizations may actually decrease the odds that the individual will choose to give to an international organization over the United Way.  Contributions to Social Benefit organizations and international organizations are rare; less than 0.2% of individuals chose either these organizations.  These results suggest that social benefit contributions are isolated to a few specific groups, while individuals contributing to international organizations are scattered around the country.

Among the 35 more specific types, shown in Table 13, contributions to Government, Domestic Abuse, Health Care Providers, Food Providers, and September 11th relief are the most clustered.  There is little evidence of clustering around contributions to the Heart Association, Arts and Culture, and Miscellaneous Social Benefit organizations, and when peers give to General Education and International

organizations the odds that the individual will choose one of those categories are less than the odds that they choose the United Way. However this clustering may not be robust to corrections for simultaneity, group common shocks, or group selection. The methods used in section 4.1 better address these issues.

Those organizations at the top of these lists are arguably the most extreme examples of public goods. The activities of organizations included in the social benefit category, particularly the government, which appears at the top of Table 13, are, as the name suggests, likely to benefit many members of society. According to Giving USA (2002) nearly 70% of Americans gave to September 11th relief organizations. This suggests that there were externalities associated with the activities of those organizations and that many people saw September 11th relief as a public good. The services provided by organizations in other categories tend to be more specialized serving only a subset of society. Another possible explanation for the rankings of observed clustering is that those organizations at the top of the list represent organizations that most individuals would agree are valuable and it is easiest to convince someone else to make a contribution to those organizations, while, for organizations farther down on the list, it is harder to change someone's mind. One might be able to convince anyone to support domestic abuse and rape counseling centers, but it is harder to convince someone to start giving to a religious organization or to a symphony. However, these explanations are merely conjectures. The only conclusion that can be made with certainty is that there is more clustering around contributions to certain organizations.

Tables 14 and 15 examine the effects of the proportion of an individual's peers giving to a particular type or category of organization, for the cross-sectional method and the panel method respectively. Contributions to health charities, children's services organizations, the local Red Cross, and September 11 relief are examined. The results are similar to those found for the United Way. A 10 percentage point increase in the proportion of one's peers giving to health charities is associated with a 3.9 to 7.7 percentage point increase in the probability that the individual will also give to a health charity, in the cross sectional and panel methods. A 10 percentage point increase in the proportion of one's peers giving to children's services organizations is associated with a 4.8 to 6.8 percentage point increase in the probability that the individual will also give to children's services organizations, in the cross sectional and panel methods. There is little evidence that social influences play a role in the likelihood that an individual will give to the local Red Cross in the cross section. However the correlations in the first difference models are highly significant. A 10 percentage point increase in the proportion of one's peers giving to the Red Cross is associated with a 5.6 to 10.1 percentage point increase in the probability that the individual will also give to the Red Cross.

Contributions to September 11 relief organizations provide an interesting case study. Nearly 70% of Americans gave to September 11 relief organizations. These contributions came from all over the country, not just areas that were directly impacted by the attacks. Similarly in these data, contributors to September 11th relief came from a wide variety of locations. Entire branches of the bank chose to support September 11th relief. The last column of Table 14 presents these results. Here there is evidence that social influences play a role at the mail code or team level. Social influences in subgroups of the mail code are less significant. Strangely in this case, subgroups defined by gender do exhibit evidence of social influences. Between 2000 and 2001 there was a sharp increase in the proportion of people within the bank contributing to their local Red Cross, from 0.3% to 1.3%. This increase may be in part attributable to the effects of September 11th.

**4.4 Robustness**

In the results presented in sections 4.1 through 4.3 the linear probability model is used. While the probit model is superior, estimating hundreds of fixed effects (when the United Way defines the group) or thousands of fixed effects (when the mail code defines the group) in a probit model is computationally prohibitive. This may bias the point estimates for social influences. However, significant coefficients on peer behavior or characteristics will still indicate the existence of social influences. The linear probability model is less inappropriate when the probability of the event being studied is neither too close to zero nor too close to 1. For the choice between the United Way and all other organizations, the use of the linear probability model instead of the probit model may not be inappropriate. However, results that look at narrower categories or types of organizations may be particularly biased by using a linear probability model. In the cases that examine only one category or type, the probability of the events considered is less than 5%.

Table 16 addresses the appropriateness of the linear probability model for the choice between the United Way and all other organizations. The coefficients estimated by the linear probability model are consistently larger than those estimated by the probit model. However, the sign and the economic significance of the effects are not affected. Therefore the linear probability model is used to identify the existence of social influences.

## 5. Conclusions

This paper finds that social influences affect the decision to designate to non-United Way organizations when groups are defined broadly, and that social influences are stronger within subgroups

defined by salary and age, but not necessarily those defined by gender, than across demographic subgroups. There is no evidence that this relationship is non-linear when none of an individual's peers choose to give to non-United Way organizations.

Several methods jointly consider contributions to all organizations, although these can not correct for all of the problems associated with measuring social influences. These results find strong evidence of clustering, especially among individuals who contribute to the government organizations, September 11th relief and health care providers. Finally, contributions to two of the most popular categories of organizations health organizations and September 11th relief, and contributions to two of the most popular types of children's services organizations and the local Red Cross and are considered separately here. While there is evidence of clustering primarily among contributions to health organizations and September 11th relief, there is at least some evidence of social influences for all four categories or types.

Using detailed information from a workplace giving campaign, this paper finds evidence that social influences play a role in an individual's selection of a recipient organization for their charitable contributions. Given the arguments against the existence of social influences in the context of the selection of a nonprofit organization, these results may be somewhat surprising. Recipient organizations are not explicitly observable within the context of the workplace giving campaign. In fact, others can only observe an individual's choice if that individual goes out of their way to tell others about their choice. Despite this lack of explicit observability, the evidence finds that many individuals give to the same organization as their peers.

The methods used here are designed to control for other possible explanations for clustering. By including group level fixed effects for both broadly and narrowly defined groups the problem of common shocks is addressed. Using subgroup characteristics as instruments for subgroup behavior addresses the problem of simultaneity. Finally, the first difference method takes advantage of changes in group composition over time to control for group selection biases. The primary remaining problem is that the methods used here do not correct for correlation in behavior due to selection based on transitory characteristics. However, in the workplace most arguments for group selection based on the proclivity towards charitable giving relate to the decision to participate and the amount of the gift given, not the selection of a nonprofit organization.

The results suggest that individual decisions about which organizations to contribute to are affected by the designation decisions of their peers. One interpretation of these results is that

contributions by others are complements to not substitutes for individual contributions to the same organizations. The complementarities may arise for a number of reasons including the provision of information and the desire to conform to the behavior of others, and may provide one explanation for why less than full crowding out is observed. These results further support those found in Carman (2004) and provide a clearer insight into the role of social influences on charitable contributions.

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# Table 1: Summary Statistics

| All Employees | 2001 | | | | 2000 | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Mean | Std Dev | Min | Max | Mean | Std Dev | Min | Max |
| Pledge ($) | 155 | 607 | 0 | 50,000 | 149 | 588 | 0 | 31,050 |
| Participation (%) | 0.574 | 0.495 | | | 0.555 | 0.497 | | |
| Team Captain (%) | 0.060 | 0.239 | | | 0.046 | 0.209 | | |
| Pacesetter (%) | 0.044 | 0.204 | | | 0.039 | 0.194 | | |
| Contractual Pay ($) | 39,483 | 30,906 | 0 | 1,250,000 | 37,152 | 27,934 | 1 | 1,000,000 |
| Actual Pay ($) | 46,451 | 140,859 | 300 | 26,267,200 | | | | |
| Tenure (years) | 8.288 | 8.323 | 0 | 52.9 | 8.522 | 8.359 | 0 | 51.9 |
| Works from home (%) | 0.002 | 0.048 | | | | | | |
| Age (years) | 38.5 | 11.819 | 15 | 97 | 38.8 | 11.5 | 15 | 84 |
| Male (%) | 0.301 | 0.459 | | | 0.291 | 0.454 | | |
| Employed 2000 | 0.853 | 0.355 | | | | | | |

| 2001 Participants | 2001 | | | | 2000 | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Mean | Std Dev | Min | Max | Mean | Std Dev | Min | Max |
| Pledge ($) | 271 | 782 | 1 | 50,000 | 227 | 708 | 0 | 30,000 |
| Participation (%) | 1 | 0 | | | 0.762 | 0.426 | | |
| Team Captain (%) | 0.083 | 0.275 | | | 0.061 | 0.240 | | |
| Pacesetter (%) | 0.061 | 0.240 | | | 0.058 | 0.234 | | |
| Contractual Pay ($) | 43,870 | 33,821 | 0 | 1,000,000 | 40,942 | 30,521 | 1 | 800,000 |
| Actual Pay ($) | 51,701 | 121,960 | 364 | 8,339,069 | | | | |
| Tenure (years) | 9.831 | 8.820 | 0 | 52.9 | 9.894 | 8.732 | 0 | 51.9 |
| Works from home (%) | 0.001 | 0.036 | | | | | | |
| Age (years) | 40.6 | 11.540 | 16 | 85 | 40.6 | 11.5 | 15 | 84 |
| Male (%) | 0.277 | 0.448 | | | | | | |
| Employed in 2000 | 0.889 | 0.314 | | | | | | |

## Table 2: Changes from 2000 to 2001

| | All Employees | | | | 2001 Participants | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Mean | Std Dev | Min | Max | Mean | Std Dev | Min | Max |
| Change in Location | 0.343 | 0.475 | | | 0.331 | 0.470 | | |
| Change in Gift Amount | 21.61 | 325 | -31,050 | 37,000 | 58.47 | 332.90 | -8,800 | 37,000 |
| Change in Pay | 4107 | 6759 | -180,000 | 250,000 | 4527 | 6647 | -125,000 | 200,000 |

## Table 3: Types of Nonprofit Organizations

| Organization Category | Organization Type | Proportion of Contributors 2001 | Proportion of Contributors 2000 |
|---|---|---|---|
| **United Way** | **Total** | **81.0%** | **88.2%** |
| Health | Aids | 0.4% | 0.4% |
| Health | Cancer | 1.0% | 0.9% |
| Health | Diabetes | 0.3% | 0.2% |
| Health | Mental Health & Drug Rehab | 0.2% | 0.2% |
| Health | Miscellaneous Diseases | 1.5% | 1.2% |
| Health | Health Care Providers | 0.2% | 0.1% |
| Health | Heart | 0.2% | 0.1% |
| Health | Hospitals | 0.4% | 0.4% |
| Health | Hospice | 0.5% | 0.3% |
| Health | Pregnancy Care | 0.3% | 0.3% |
| Health | Local Red Cross | 1.3% | 0.3% |
| **Health** | **Total** | **6.2%** | **4.1%** |
| Human Services | Abuse or Rape Counseling | 0.7% | 0.8% |
| Human Services | Adoption & Family Services | 0.3% | 0.2% |
| Human Services | Boys & Girls Club | 0.3% | 0.3% |
| Human Services | Child Services | 1.2% | 1.0% |
| Human Services | Community Services | 0.8% | 0.5% |
| Human Services | Elderly Services | 0.4% | 0.3% |
| Human Services | Food Provision | 0.2% | 0.1% |
| Human Services | Minority | 0.4% | 0.4% |
| Human Services | Housing | 0.3% | 0.2% |
| Human Services | Salvation Army | 0.3% | 0.1% |
| Human Services | Scouts | 0.7% | 0.5% |
| **Human Services** | **Total** | **5.4%** | **4.6%** |

**Table 3 (Continued): Types of Nonprofit Organizations**

| Organization Category | Organization Type | Proportion of Contributors 2001 | Proportion of Contributors 2000 |
|---|---|---|---|
| Social Benefit | Government Organizations | 0.1% | 0.04% |
| Social Benefit | Miscellaneous | 0.05% | 0.05% |
| **Social Benefit** | **Total** | **0.1%** | **0.1%** |
| **Arts and Culture** | **Total** | **0.1%** | **0.1%** |
| Education | Primary/Secondary School | 0.7% | 0.6% |
| Education | Miscellaneous Education | 0.2% | 1.3% |
| **Education** | **Total** | **0.8\*** | **0.8%** |
| Religious | Catholic Social Services | 0.5% | 0.3% |
| Religious | Religious Social Services | 0.4% | 0.3% |
| Religious | Church/Temple | 0.9% | 0.7% |
| Religious | YMCA | 0.3% | 0.2% |
| **Religious** | **Total** | **2.1%** | **1.7%** |
| **International** | **Total** | **0.1%** | **0.1%** |
| **Animals & Nature** | **Total** | **0.4%** | **0.3%** |
| **September 11** | **Total** | **3.7%** | **0.0%** |

**Table 4: The Effect of Individual Characteristics and Subgroup Contribution Designations to Non-United Way Organizations on Individual Contribution Designation to Non-United Way Organizations**

|  | Coefficient |
|---|---|
| Proportion of Mailcode giving to Non-UW | 0.568 |
|  | (0.0376)*** |
| Salary 2001 | 2.25E-07 |
|  | (5.11e-15)*** |
| Salary Squared | -3.46E-14 |
|  | (5.11e-15)*** |
| Male | -0.009 |
|  | (0.0034)*** |
| Age 2001 | 0.001 |
|  | (0.0001)*** |
| Tenure as of Oct 1 2001 | 0.001 |
|  | (0.0002)*** |
| Team Captain 2001 | 0.046 |
|  | (0.0054)*** |
| Pace Setter 2001 | 0.035 |
|  | (0.0069)*** |
| Mail To Home 2001 | -0.032 |
|  | (0.0554) |
| Constant | -0.108 |
|  | (0.2686) |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Note: Standard errors in parentheses. Each coefficient represents the results of a separate regression. Group behavior is always calculated excluding the individual. Estimated using linear probability model.

**Table 5: The Effect of Subgroup Contribution Designations to Non-United Way Organizations on Individual's Contribution Designations to Non-United Way Organizations**

| Group | Subgroup | Coefficient |
|---|---|---|
| United Way | Mail Code | 0.568 |
|  |  | (0.0376)*** |
| United Way | Team | 0.508 |
|  |  | (0.0376)*** |
| Mail Code | Gender | -0.030 |
|  |  | (0.1205) |
| Mail Code | Salary Quartile | 0.647 |
|  |  | (0.0486)*** |
| Mail Code | Age Group | 0.262 |
|  |  | (0.0844)*** |
| Instrumental Variables |  | Subgroup Chars |
| Group Fixed Effects |  | Yes |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. Each coefficient represents the results of a separate regression. To save space, coefficients on salary, salary squared, male, age, tenure, team captain, pace setter, work from home and group fixed effects are omitted from the table. Group behavior is always calculated excluding the individual. Estimated using linear probability model.

**Table 6: The Effect of Changes in Subgroup Designations to Non-United Way Organizations on Changes Individual's Designation to Non-United Way Organizations**

| Group | Subgroup | Coefficient |
|---|---|---|
| United Way | Mailcode | 0.503 (0.1023)*** |
| United Way | Team | 1.030 (0.1253)*** |
| Mailcode | Gender | 0.252 (0.2777) |
| Mailcode | Salary Quartile | 0.689 (0.1969)*** |
| Mailcode | Age Group | 0.447 (0.2103)** |
| Instruments | | Characteristics in 2000 of Stayers, Movers, and Joiners |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. Each coefficient represents the results of a separate regression. To save space, coefficients on changes in salary, salary squared, team captain, pace setter, work from home and group fixed effects are omitted from the table. Group behavior is always calculated excluding the individual. Estimated using linear probability model.

**Table 7: The Effect of Changes in Subgroup Designations to Non-United Way Organizations on Individual's Designation to Non-United Way Organizations**

| Group | Subgroup | Employees who Designated to Non-United Way in 2000 | Employees who Gave to United Way in 2000 | Employees who did not Participate in 2000 |
|---|---|---|---|---|
| United Way | Mail Code | 0.570 | 0.813 | 1.398 |
| | | (0.2707)** | (0.0974)*** | (0.2115)*** |
| United Way | Team | 0.851 | 0.997 | 0.871 |
| | | (0.2694)*** | (0.1208)*** | (0.1947)*** |
| Mail Code | Gender | 0.198 | -0.014 | 0.491 |
| | | (0.4172) | (0.2737) | (0.3611) |
| Mail Code | Salary Quartile | 0.863 | 0.670 | 0.634 |
| | | (0.3738)** | (0.1825)*** | (0.2955)** |
| Mail Code | Age Group | -0.216 | 0.394 | 0.835 |
| | | (0.3527) | (0.1896)** | (0.3342)** |
| Instrumental Variables | | Characteristics in 2000 of Stayers, Movers, and Joiners | Characteristics in 2000 of Stayers, Movers, and Joiners | Characteristics in 2000 of Stayers, Movers, and Joiners |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. Each coefficient represents the results of a separate regression. To save space, coefficients on changes in salary, salary squared, team captain, pace setter, work from home and group fixed effects are omitted from the table. Group behavior is always calculated excluding the individual. Estimated using linear probability model.

## Table 8: The Effects of Characteristics of the Subgroup on Individual Contributions Designations

| Group<br>Subgroup | UW<br>Mailcode | Mailcode<br>Gender | Mailcode<br>Salary Quartile | Mailcode<br>Age Group |
|---|---|---|---|---|
| Subgroup average salary 2001 | 2.40E-07 | -1.48E-07 | 5.66E-07 | 6.44E-08 |
| | (4.16e-08)*** | (8.28e-08)* | (1.06e-07)*** | (6.39e-08) |
| Subgroup average salary squared | -6.14E-14 | 1.53E-14 | -1.20E-13 | -1.33E-14 |
| | (9.99e-15)*** | (2.35e-14) | (4.18e-14)*** | (1.47e-14) |
| Subgroup prop male in 2000 | 0.047 | | -0.004 | -0.013 |
| | (0.0075)*** | | (0.0101) | (0.0091) |
| Subgroup average age 2001 | 1.27E-4 | -0.001 | -3.33E-5 | -0.001 |
| | (0.0003) | (0.0006)** | (0.0004) | (0.0005) |
| Subgroup average tenure in 2000 | 0.001 | -0.001 | 0.002 | 0.001 |
| | (0.0004)** | (0.0009) | (0.0005)*** | (0.0004)*** |
| Subgroup prop captains in 2000 | -0.027 | 0.001 | 0.020 | 0.003 |
| | (0.0131)** | (0.0173) | (0.0127) | (0.0118) |
| Subgroup prop pacesetters in 2000 | 0.081 | 0.071 | 0.036 | 0.010 |
| | (0.0135)*** | (0.0219)*** | (0.0231) | (0.0178) |
| Subgroup prop work from home 2001 | -0.084 | 0.723 | 0.126 | 0.205 |
| | (0.0970) | (0.3943)* | (0.2392) | (0.1528) |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. Each coefficient represents the results of a separate regression. To save space, coefficients on salary, salary squared, male, age, tenure, team captain, pace setter, work from home and group fixed effects are omitted from the table. Group behavior is always calculated excluding the individual. When subgroups are defined by gender, the proportion of the subgroup that is male is always exactly the same as the dummy for male, and therefore is dropped. Estimated using linear probability model.

**Table 9: The Effect of Subgroup Contribution Designations to Non-United Way Organizations on Individual's Contribution Designation to Non-United Way Organizations**

|  | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| Proportion of Mail code giving to Non-UW | 0.568 |  | 0.545 |
|  | (0.0376)*** |  | (0.0403)*** |
| Dummy if all peers give to UW |  | -0.155 | -0.038 |
|  |  | (0.0229)*** | (0.024) |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. Each coefficient represents the results of a separate regression. To save space, coefficients on salary, salary squared, male, age, tenure, team captain, pace setter, work from home and group fixed effects are omitted from the table. Group behavior is always calculated excluding the individual. Groups are defined by the United Way, subgroups by the mail code. Estimated using linear probability model. Includes group level fixed effects and instruments for subgroup behavior using subgroup average characteristics.

**Table 10: The Effect of Changes in Subgroup Designations to Non-United Way Organizations on Individual's Designation to Non-United Way Organizations**

|  | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| Change in Proportion of Mail code giving to Non-UW | 0.503<br>(0.1023)*** |  | 0.505<br>(0.1065)*** |
| Change in Dummy if all peers give to UW |  | 0.089<br>(0.0692) | -0.005<br>(0.0709) |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. Each coefficient represents the results of a separate regression. To save space, coefficients on changes in salary, salary squared, team captain, pace setter, work from home and group fixed effects are omitted from the table. Group behavior is always calculated excluding the individual. Estimated using linear probability model. Includes group level fixed effects and instruments for subgroup behavior using average characteristics of stayers, movers, and joiners.

**Table 11: The Effect of the Proportion of an Individual's Peers Giving to a Category or Type on the Likelihood that the Individual Will Give to the Same Category or Type**

| | | Model A | Model B | Model C |
|---|---|---|---|---|
| Proportion of Individual's peers Giving to Category | Coef. | 7.904 | 2.153 | 3.147 |
| | Std Err | (0.0266)*** | (0.0419)*** | (0.0384)*** |
| | Odds Ratio | 2708 | 8.611 | 23.269 |
| Proportion of Individual's peers Giving to Type | Coef. | 9.471 | 2.068 | 1.961 |
| | Std Err | (0.0231)*** | (0.0385)*** | (0.0388)*** |
| | Odds Ratio | 12979 | 7.908 | 7.109 |
| Other Controls | | None | Category or Type Fixed Effects | Category or Type Fixed Effects and Individual Characteristics interacted with Type/Category |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. Each coefficient represents the results of a separate regression. To save space, coefficients on changes in salary, salary squared, team captain, pace setter, and works from home are omitted from the table (where appropriate). Group behavior is always calculated excluding the individual. Estimated using a Conditional Logit. There are 10 broad categories of giving and 35 more specific types of organizations.

**Table 12: The Effect of the Proportion of an Individual's Peers Giving to a Particular Category on the Likelihood that the Individual Will Give to the Same Category**

| | Coefficient | Odds ratio | z-stat |
|---|---|---|---|
| Proportion of Peers Giving to Social Benefit 01 | 10.957 | 57327 | 8.04 |
| | (1.3623)*** | | |
| Proportion of Peers Giving to September 11 Relief 01 | 8.801 | 6643 | 51.58 |
| | (0.1706)*** | | |
| Proportion of Peers Giving to Nature/Animals 01 | 5.561 | 260 | 6.68 |
| | (0.8324)*** | | |
| Proportion of Peers Giving to Health 01 | 5.540 | 255 | 5.52 |
| | (1.005)*** | | |
| Proportion of Peers Giving to Education 01 | 4.095 | 60 | 7.16 |
| | (0.5721)*** | | |
| Proportion of Peers Giving to Religion 01 | 3.883 | 49 | 13.23 |
| | (0.2934)*** | | |
| Proportion of Peers Giving to Human Services 01 | 3.459 | 32 | 22.18 |
| | (0.1560)*** | | |
| Proportion of Peers Giving to Arts & Culture 01 | 2.559 | 13 | 0.72 |
| | (3.5692) | | |
| Proportion of Peers Giving to International Org 01 | -66.100 | 0.000 | -0.49 |
| | (135.2148) | | |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. To save space, coefficients on changes in salary, salary squared, team captain, pace setter, and works from home are omitted from the table. Group behavior is always calculated excluding the individual. Estimated using a Conditional Legit. There are 10 broad categories of giving and 35 more specific types of organizations.

**Table 13: The Effect of the Proportion of an Individual's Peers Giving to a Particular Type on the Likelihood that the Individual Will Give to the Same Type**

| | Coefficient | Odds ratio | z-stat |
|---|---|---|---|
| Proportion of Peers Giving to Government org 01 | 16.004 | 8922066 | 9.17 |
| | (1.7451)*** | | |
| Proportion of Peers Giving to Domestic abuse or Rape org 01 | 15.383 | 4796288 | 24.51 |
| | (0.6278)*** | | |
| Proportion of Peers Giving to health providers 01 | 12.446 | 254136 | 9.43 |
| | (1.3203)*** | | |
| Proportion of Peers Giving to Food provider 01 | 9.727 | 16760 | 5.94 |
| | (1.636)*** | | |
| Proportion of Peers Giving to September 11 org 01 | 8.571 | 5275 | 51.69 |
| | (0.1658)*** | | |
| Proportion of Peers Giving to Mental Health or Drug Rehab Org 01 | 8.322 | 4115 | 5.04 |
| | (1.6529)*** | | |
| Proportion of Peers Giving to Hospital 01 | 7.576 | 1951 | 6.39 |
| | (1.1857)*** | | |
| Proportion of Peers Giving to homeless org 01 | 6.714 | 824 | 7.5 |
| | (0.8952)*** | | |
| Proportion of Peers Giving to Family Services or Adoption org 01 | 6.213 | 499 | 6.27 |
| | (0.9913)*** | | |
| Proportion of Peers Giving to School 01 | 5.872 | 355 | 8.8 |
| | (0.6671)*** | | |
| Proportion of Peers Giving to Hospice 01 | 5.704 | 300 | 7.44 |
| | (0.7666)*** | | |
| Proportion of Peers Giving to Church or Temple 01 | 5.683 | 294 | 11.22 |
| | (0.5066)*** | | |
| Proportion of Peers Giving to Minority org 01 | 5.629 | 278 | 5.37 |
| | (1.0479)*** | | |
| Proportion of Peers Giving to Elderly org 01 | 5.586 | 267 | 5.9 |
| | (0.9471)*** | | |
| Proportion of Peers Giving to Community services org 01 | 5.485 | 241 | 11.31 |
| | (0.4852)*** | | |
| Proportion of Peers Giving to YMCA 01 | 5.192 | 180 | 5.39 |
| | (0.9625)*** | | |
| Proportion of Peers Giving to Red Cross 01 | 5.154 | 173 | 10.61 |
| | (0.4856)*** | | |
| Proportion of Peers Giving to Nature or Animal org 01 | 5.148 | 172 | 6.46 |
| | (0.7972)*** | | |

# Table 13: The Effect of the Proportion of an Individual's Peers Giving to a Particular Type on the Likelihood that the Individual Will Give to the Same Type (Continued)

|  | Coefficient | Odds ratio | z-stat |
|---|---|---|---|
| Proportion of Peers Giving to AIDS org 01 | 5.057 | 157 | 5.52 |
|  | (0.9159)*** |  |  |
| Proportion of Peers Giving to Diabetes org 01 | 4.978 | 145 | 7.06 |
|  | (0.7047)*** |  |  |
| Proportion of Peers Giving to Pregnancy care org 01 | 4.787 | 120 | 5.28 |
|  | (0.9064)*** |  |  |
| Proportion of Peers Giving to Catholic Social Services 01 | 4.717 | 112 | 5.63 |
|  | (0.8373)*** |  |  |
| Proportion of Peers Giving to Boys and girls club 01 | 4.595 | 99 | 5.04 |
|  | (0.9111)*** |  |  |
| Proportion of Peers Giving to Religious Social Services 01 | 4.248 | 70 | 5.26 |
|  | (0.8084)*** |  |  |
| Proportion of Peers Giving to Cancer org 01 | 4.034 | 56 | 8.09 |
|  | (0.4986)*** |  |  |
| Proportion of Peers Giving to Salvation Army 01 | 3.756 | 43 | 2.22 |
|  | (1.6928)*** |  |  |
| Proportion of Peers Giving to Children's org 01 | 3.753 | 43 | 8.55 |
|  | (0.4387)*** |  |  |
| Proportion of Peers Giving to org that help diseased or disabled 01 | 3.751 | 43 | 8.4 |
|  | (0.4466)*** |  |  |
| Proportion of Peers Giving to boy or girl scouts 01 | 3.583 | 36 | 4.72 |
|  | (0.759)*** |  |  |
| Proportion of Peers Giving to heart org 01 | 2.780 | 16 | 0.88 |
|  | (3.1603) |  |  |
| Proportion of Peers Giving to Arts or cultural org 01 | 2.517 | 12 | 0.68 |
|  | (3.6810) |  |  |
| Proportion of Peers Giving to Social Benefit org 01 | 2.164 | 9 | 0.36 |
|  | (5.9966) |  |  |
| Proportion of Peers Giving to Education org 01 | -2.979 | 0.051 | -0.34 |
|  | (8.7467) |  |  |
| Proportion of Peers Giving to International org 01 | -65.860 | 2.500E-29 | -0.49 |
|  | (134.67) |  |  |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. To save space, coefficients on changes in salary, salary squared, team captain, pace setter, and works from home are omitted from the table. Group behavior is always calculated excluding the individual. Estimated using a Conditional Logit. There are 10 broad categories of giving and 35 more specific types of organizations.

**Table 14: The Effect of Subgroup Contribution Designations on Individual's Contribution Designation to 4 Different Types or Categories of Organizations**

| Group | Subgroup | Health Charities | Children's Services | Red Cross | September 11 Relief |
|---|---|---|---|---|---|
| United Way | Mail Code | 0.454 | 0.668 | 0.179 | 0.865 |
| | | (0.0697)*** | (0.1117)*** | (0.2054) | (0.0822)*** |
| United Way | Team | 0.394 | 0.638 | 0.122 | 0.796 |
| | | (0.0705)*** | (0.1030)*** | (0.2345) | (0.0799)*** |
| Mail Code | Gender | 0.068 | 0.230 | 0.561 | 0.914 |
| | | (0.1809) | (0.3424) | (0.4613) | (0.2384)*** |
| Mail Code | Salary Quartile | 0.550 | 0.679 | 0.447 | -0.395 |
| | | (0.0689)*** | (0.1460)*** | (0.1762)** | (0.2764) |
| Mail Code | Age Group | 0.269 | 0.457 | 0.100 | -0.074 |
| | | (0.1072)** | (0.2834) | (0.2719) | (0.3201) |
| Instrumental Variables | | Subgroup Chars | Subgroup Chars | Subgroup Chars | Subgroup Chars |
| Group Fixed Effects | | Yes | Yes | Yes | Yes |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. Each coefficient represents the results of a separate regression. To save space, coefficients on salary, salary squared, male, age, tenure, team captain, pace setter, work from home and group fixed effects are omitted from the table. Group behavior is always calculated excluding the individual. Estimated using linear probability model.

**Table 15: The Effect of Changes in Subgroup Designations to Non-United Way Organizations on Changes Individual's Designation to Non-United Way Organizations**

| Group | Subgroup | Health Charities | Children's Services | Red Cross | September 11 Relief |
|---|---|---|---|---|---|
| United Way | Mailcode | 0.510 | 0.685 | 0.693 | |
| | | (0.1791)*** | (0.1768)*** | (0.2665)*** | |
| United Way | Team | 0.631 | 1.062 | 0.659 | |
| | | (0.1768)*** | (0.2563)*** | (0.1817)*** | |
| Mailcode | Gender | 0.721 | 0.391 | 1.067 | |
| | | (0.2772)*** | (0.2301)* | (0.4037)*** | |
| Mailcode | Salary Quartile | 0.765 | 0.478 | 0.556 | |
| | | (0.1964)*** | (0.2926) | (0.2218)** | |
| Mailcode | Age Group | 0.649 | 0.475 | 0.887 | |
| | | (0.1878)*** | (0.2719)* | (0.2343)*** | |
| Instruments | | Characteristics of Stayers, Leavers, Joiners | Characteristics of Stayers, Leavers, Joiners | Characteristics of Stayers, Leavers, Joiners | Characteristics of Stayers, Leavers, Joiners |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. Each coefficient represents the results of a separate regression. To save space, coefficients on changes in salary, salary squared, team captain, pace setter, work from home and group fixed effects are omitted from the table. Group behavior is always calculated excluding the individual. Estimated using linear probability model.

## Table 16: Robustness: Effects of Behavior of Subgroup on Individual Contributions: Linear Probability vs. Probit

**Table 16a: The effects of Subgroup Designations to Non-United Way Organizations**

| Group | Subgroup | Reg Type | Coefficient |
|-------|----------|----------|-------------|
| United Way | Mailcode | Linear Prob | 0.568 |
| | | | (0.0376)*** |
| United Way | Mailcode | Probit | 0.529 |
| | | | (0.0361)*** |
| United Way | Team | Linear Prob | 0.508 |
| | | | (0.0376)*** |
| United Way | Team | Probit | 0.480 |
| | | | (0.0371)*** |
| Instrumental Variables | | | Subgroup Chars |
| Group Fixed Effects | | | Yes |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Notes: Standard errors in parentheses. Each coefficient represents the results of a separate regression. To save space, coefficients on salary, salary squared, male, age, tenure, team captain, pace setter, work from home and group fixed effects are omitted from the table. Group behavior is always calculated excluding the individual. Probit results are probability scaled.