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Public Officials and Transfer Recipients in Colombia

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## **ATTITUDES AND ATTRIBUTES: A FIELD EXPERIMENT WITH PUBLIC OFFICIALS AND TRANSFER RECIPIENTS IN COLOMBIA\***

**JUAN CAMILO CÁRDENAS<sup>†</sup>  
RAJIV SETHI<sup>‡</sup>**

### **Abstract**

Any system of transfer payments must be administered by officials with some degree of discretionary power over the manner in which funds are allocated. Attitudes of such officials regarding the worthiness of various recipients therefore have implications for resource allocation. Using a sample of actual public servants working in education, health, child care and nutrition programs, and a sample of potential and actual beneficiaries of such programs, we attempt to identify the set of recipient attributes that induce the most generous responses from officials. This is done using a design we call the “distributive dictator game” which requires officials to rank recipients, with the understanding that a higher ranking corresponds to an increased likelihood of getting a voucher convertible into cash. Interpreting the ranking as the outcome of a random utility model, we estimate the effects of recipient attributes using a rank-order logistic regression. We find that public officials tend to favor women, married persons, individuals with many minor dependents, and refugees from political violence.

**Keywords:** Public officials, transfer recipients, field experiments, rank-order logistic regression.

**JEL Classification:** H3, H83, I3, D6, C93, C1.

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# ACTITUDES Y ATRIBUTOS: UN EXPERIMENTO EN CAMPO CON FUNCIONARIOS PÚBLICOS Y BENEFICIARIOS DE TRANSFERENCIAS EN COLOMBIA

## Resumen

Cualquier sistema de transferencias debe ser administrado por funcionarios con algún grado de discrecionalidad sobre la forma en que se asignan los recursos. Las actitudes de estos funcionarios con respecto al merecimiento de varios receptores de las transferencias tienen por lo tanto implicaciones para la asignación. A través de una muestra de funcionarios públicos que trabajan en programas de educación, salud, cuidado de niños y nutrición, y una muestra de potenciales y actuales beneficiarios de estos programas, tratamos de identificar el conjunto de atributos de los receptores que inducen respuestas más generosas de los funcionarios. Esto se lleva a cabo usando un diseño experimental que denominamos el “Juego del Dictador Distributivo” en el cual los funcionarios deben ordenar a los beneficiarios de mayor a menor, bajo el criterio de que un mayor ranking corresponde a una mayor probabilidad de obtener un cupón convertible en dinero. Interpretando el ranking como el resultado de un modelo aleatorio de utilidad, estimamos los efectos de los atributos del receptor o beneficiario utilizando una regresión logística de datos de ranking (*rank-order logistic regression*). Encontramos que los funcionarios públicos tienden a favorecer a las mujeres, a las personas casadas y a los individuos con mayor número de dependientes menores de edad, así como a los desplazados de la violencia política.

**Palabras clave:** Funcionarios públicos, beneficiarios de programas sociales, experimentos en campo, *rank-order logistic regression*

**Clasificación JEL:** H3, H83, I3, D6, C93, C1.

# 1 Introduction

Any system of transfer payments must be administered by public officials with some degree of discretionary power. The manner in which this power is exercised will typically depend on the attitudes of such officials, especially concerning the extent to which recipient claims are considered to be worthy or deserving. An important policy question concerns the alignment of such preferences with the official rationale for transfers. If public officials have preferences that are not aligned with stated policy objectives, the policy maybe undermined or, at best, diminished in effectiveness.

Little is known, however, about the attitudes of public officials concerning the attributes of potential transfer recipients. This paper is an attempt to identify some of these attitudes using evidence from an experiment involving actual public officials and potential recipients of state transfers in Colombia. The officials recruited for the experiment were drawn from a variety of social programs such as education, health, day care and nutrition. A set of likely transfer recipients were also recruited, with widely varying attributes along a number of dimensions. Each official was confronted with detailed information about a set of possible recipients and was asked to rank them, with the understanding that higher ranked individuals had a greater chance of obtaining a monetary payment at the end of the experiment. Each official received a fixed payment for participation, and each recipient was ranked by several different officials. The resulting data was then used to draw inferences about the particular recipient attributes that were rewarded with higher rankings, and hence higher expected payments.

In order to assign to each potential recipient a score indicating the likelihood of being highly ranked, we used the Plackett-Luce model for the statistical analysis of ranking data (Plackett 1975, Luce 1959). These scores correspond to probabilities with a clear economic interpretation, and allow us to describe in an intuitive way the manner in which the ranking varies with a particular attribute such as age or gender. Interpreting the ranking as the outcome of a random utility model, we then estimated the effects of recipient attributes using a rank-order logistic regression (Beggs et al., 1981). This allowed us to determine which collection of attributes were deemed by public officials to be the most deserving. Among those attributes which significantly affect a recipient's ranking are gender, the number of minor dependents, marital status, and being displaced. Specifically, the rankings by public officials tend to favor women over men, married individuals over non-married, those with many minor dependents over those with few, and formerly displaced persons over the general population.

A concern with the public spiritedness of civil servants has a long history in the social sciences, dating back at least to the 1861 publication of John Stuart Mill's *Considerations on Representative Government*. More recently, scholars in the field of public administration have attempted to identify various dimensions of "Public Service Motivation" or PSM using interviews, survey data, and qualitative as well as quantitative methods (Perry 1996; Perry et al., 1990, 2000; Brewer et al. 2003; Moynihan et al. 2007). The consensus emerging from this work is that the motivations that predispose certain individuals to perform public service are in general pro-social. For instance, Brewer et al.'s (2000) study of local and federal employees in various states suggests that public officials have distaste for politicians as well as for economic rewards, and have a range of motivations that allow them to be classified as either Samaritans, communitarians, patriots, or humanitarians.

While studies based on surveys of officials are suggestive of an ethical and pro-social public servant, there are a few recent field experiments that paint a somewhat more complicated picture. These experiments involve actual or potential public servants, and uncover behavior that is sensitive to material and other institutional incentives and often at odds with the public interest. Barr et al. (2004) conducted an experimental study of Ethiopian nursing students who were likely candidates for civil service jobs in the health sector. In their "Public Servant's Game" some players had the opportunity to capture private rents by appropriating public resources at some cost to the community.<sup>1</sup> Other subjects played the role of community members with the capacity to elect monitors, who in turn could expose the opportunistic behavior of public servants. Their results indicate that public servants did expropriate resources quite often, and that such expropriation decreased if they were subject to community monitoring or paid higher wages.

In a related experiment, Alatas et al. (2006) worked with Indonesian public servants and a control group of students. Their design involved a sequential game with three player roles: a firm, a government official and a citizen. The firm could offer a bribe to the government official, who could accept or reject it. If the bribe was offered and accepted, both players increased their earnings but decreased substantially the earnings of the citizen, who could then decide whether or not to punish this behavior. Punishment reduced the payoffs of all parties, including the citizen who chose to impose it. The authors found that students assigned to the role of the firm offered bribes more frequently and in larger amounts relative to the public servants assigned to the same role. In the role of the government official, students accepted bribes more readily than did public officials assigned to that role. Nevertheless, 47% of the public servants offered a bribe in the experiment

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<sup>1</sup>For a similar experimental design, see Azfar and Nelson (2007).

and 30% accepted bribes. In the role of the citizens, the public officials punished somewhat more frequently than did students assigned to this role, although the difference was not found to be statistically significant.

The experimental literature on charitable giving is vast, and usually involves some variant of the dictator game (see Andreoni 2007a, 2007b for surveys). This includes a few field experiments with actual members of vulnerable groups placed in the role of recipients. Brañas (2006) highlights the critical role of framing, credibility and the target group in such settings. When dictators were asked to make transfers (in cash or medicines) to recipients who were actually poor, altruism increased substantially relative to levels typically observed in the canonical dictator game. Fong (2007) explored the responsiveness of students at Carnegie Mellon University and the University of Pittsburgh to empathic relations with recipients who were recruited at a child care center in Pittsburgh serving low-income mothers. Her results suggest that donations to these deserving individuals are highly dependent on the perceived worthiness of the recipient by the donor. In general, the reasons of why someone is poor (e.g. lack of effort versus lack of luck) seems to determine donations along with the degree of humanitarianism and egalitarianism of the donor, measured through survey questions. Other experimental works where the recipients of transfers involve actual charities include Eckel and Grossman (2006), Eckel et al. (2005), and Carpenter et al. (forthcoming).

While there have been experiments with practising public officials, and experiments with individuals from economically vulnerable populations, we know of no prior study simultaneously involving both of these groups. Our experimental design involves the matching of public officials with actual or potential welfare recipients and thus allows us to gain a better understanding of the attitudes of the former with respect to the attributes of the latter. As observed by Levitt and List (2007), a successful field experiment requires careful selection of representative participants and appropriate framing of decisions. Our participants were drawn from four social services areas (education, health, nutrition, and child care) and we knocked the doors of the relevant agencies to recruit public servants who deal with the poor on a daily basis. The resulting sample included nurses, teachers, secretaries, guards, and clerks. Our recipients were recruited from the very places where they apply for welfare programs and benefits, such as community kitchens, registry offices, and day care centers. Our payoff structure and framing were designed to simulate an environment that is routinely faced by our subjects in their daily lives. In other words, our experiment should be a familiar activity to both recipients and rankers. Levitt and List (2007) are also concerned with

the degree of scrutiny faced by experimental subjects, since this could be a decisive factor affecting their decisions. We believe that our design allows for the degree of scrutiny that any public official would expect to face in making allocation decisions of this kind. Decisions involving discretionary power are typically made in private, unobserved by peers and co-workers, but with final outcomes visible to selected outside observers. With the experimenter in the role of the outside observer, these features are replicated in our experimental design.

## 2 Subject Selection and Characteristics

We recruited local officials from government social welfare programs and potential or actual beneficiaries of such programs. We call these the *target* players, to distinguish them from controls (such as college students) whom we also recruited. In the case of public officials, the target sample refers to those employed in the public service agencies that interact directly with beneficiaries of social services, namely the poor. These include white collar and blue collar employees at four types of agencies (education, health, child care and nutrition programs), and were recruited at public health centers and hospitals, public schools, day care centers, community kitchens, and nutritional government programs. Neither the identities of the local officials nor their decisions in the experiment were revealed to any of the other players, and could not be observed by their superiors. We recruited at least two officers from each service provider visited during the process. A total of 170 public officials participated in the experiment.

In the case of beneficiaries, the target sample is composed of individuals who are currently receiving or are eligible to apply for social services from the government. These were recruited by visiting neighborhoods, community centers and municipal offices where potential beneficiaries apply for social services, or where they actually receive them. Most of the recruits were under the government welfare targeting program (SISBEN), and the pool includes ethnic minorities, people displaced by political violence, ex-combatants, street recyclers and street vendors. These are some of the most vulnerable segments of the Colombian population, and the decision to recruit them was guided by a variety of considerations. The Constitutional Court and the Ombudsman Office (*Defensoría del Pueblo*) have recorded frequent claims of discriminatory actions by state officials towards some of these groups (displaced persons, street recyclers, and ethnic minorities). Also, as a result of protracted political conflict in Colombia, individuals who have been uprooted and displaced by violence as well as ex-combatants from illegal armed groups are all currently recipients



of government subsidized social services and direct transfers. We suspect that these two groups (victims and perpetrators of political violence) might provoke very different reactions from public officials when called upon to administer the provision of services and transfers.

Table 1 shows some of the characteristics of the 205 beneficiaries in our sample. There is considerable variation in age and education levels, as well as in the number of dependents. Somewhat more than half the sample is female, and one-fifth identify themselves as black or indigenous, and a similar number are unemployed. Less than a tenth are formally married; most are single or in common law relationships. Almost one-third have been displaced from their homes as a result of political violence, and almost one-fifth are former combatants in this violence. A few of the recipients work in the informal sector as street vendors or recyclers.

Table 1. Characteristics of beneficiaries in sample

	Mean	S.D.	Min	Max
Age	32.74	13.53	16	73
Education	8.078	3.572	0	18
Number of dependents	1.970	1.796	0	7
Number of Minor dependents	1.517	1.526	0	6
Female	0.556	0.498	0	1
Black	0.137	0.344	0	1
Indigenous	0.078	0.269	0	1
Married	0.083	0.277	0	1
Common law	0.380	0.487	0	1
Single	0.380	0.487	0	1
Widow(er)	0.044	0.205	0	1
Displaced	0.317	0.466	0	1
Ex-combatant	0.190	0.393	0	1
Street recycler	0.088	0.284	0	1
Street Vendor	0.068	0.253	0	1
Unemployed	0.205	0.405	0	1

The public officials were more highly educated, more likely to be married, and less likely to be living with common law partners when compared with the beneficiaries in our sample. A total of 69% of officials were women, and the mean years of education was 15. The average age among officials was 34, about the same as the average age among beneficiaries in our sample. However, the age distribution among beneficiaries had greater variance and range (the oldest beneficiary was 73 years old while the oldest public official was 55). Only 16% of officials were living with common law partners (compared with 38% of beneficiaries), and 25% were married.

In addition to the two target populations we also recruited residents of Bogotá with varying levels of education, income, occupation, and residential location to serve as controls. About half of these were college students, while the remainder were employees in private and public sector offices. A total of 56 controls were randomly assigned to the pool of public officials, and 32 to the pool of beneficiaries.

### 3 Experimental Procedure

The two populations (officials and beneficiaries) were respectively placed in two different roles (rankers and recipients) in the following experiment, which we call the “distributive dictator game”. Rankers allocated resources to recipients at no personal cost in accordance with the following procedure. A typical session consisted of five rankers and five recipients.<sup>2</sup> Each ranker was given information about each of the recipients (in a manner described below) and asked to produce a complete ordering of these individuals. This collection of rankings determined the likelihood with which each of the recipients was paid an exogenously given sum of money. Rankers made their decisions in private, unaware of the decisions made by other rankers. Once all the rankings were completed, one of these was selected at random and formed the basis for payment. An integer was drawn from a uniform distribution on the set  $\{1, \dots, 5\}$ , and this number of recipients, starting with the highest ranked, received one voucher each. These vouchers could then be exchanged for cash at a rate of 10,000 Colombian pesos (approximately \$5) per voucher. All recipients (including those who received a voucher) were paid a show up fee of 2,000 pesos. All rankers received a fee of 10,000 pesos for completing the assigned task, as well as 2,000 pesos for transportation costs.

Prior to making their choices, each ranker observed a set of five cards, one corresponding to each

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<sup>2</sup>All sessions had at least two and at most six rankers, with the vast majority having exactly five. The number of recipients matched with each ranker was always five.

of the recipients with which they were matched. This card included a photograph of the recipient as well as basic demographic and socioeconomic attributes including age, education, neighborhood of residence, number of dependents, occupation and several other characteristics described in detail below. These cards were produced after the recruitment of the recipients, but before the recruitment of the public officials. Figure 1 depicts one of the cards used (the photograph here has been blurred to protect the privacy of the recipient, and the information has been translated from the original Spanish).

	<b>E</b>	Copy to file Print
	<b>Birthplace and age</b>	Pinar, Colombia, 33 años
	<b>Marital status</b>	Common law, lives with partner
	<b>Occupation and time</b>	Independent, 6h 30m a la semana
	<b>Estate, Neighborhood</b>	No estrato, Cocherita, Localidad 18
	<b>GISDEN classification</b>	1
	<b>No. of dependents</b>	6
	<b>Last year of education completed</b>	5th grade
	<b>Minor dependents</b>	1
	<b>Other</b>	Street recycler

Figure 1. Sample card with recipient characteristics.

The objective of the experiment was to identify attributes that have significant effects on the manner in which recipients are ranked by public officials. Since the payments to rankers were exogenously fixed and not contingent on the rankings they produced, there was no conflict between the material self interest of the two sets of players. One might therefore expect that rankers placed those recipients whom they deemed to be more worthy or deserving in higher positions in order to increase the expected value of their transfers. In order to ascertain the public officials' own conceptions of worthiness we were careful not to suggest any attributes on which the ranking ought to be based.

While these sums paid may appear small, we provide compelling evidence below that certain recipient attributes were systematically rewarded or punished by rankers, indicating that the latter took the task very seriously. Furthermore, neither rankers nor recipients could affect their monetary payoffs through any change in their own actions, so the payments are simply rewards for participation.

## 4 Measuring Worthiness

Since higher ranked recipients have a greater likelihood of receiving transfers relative to those who are lower ranked, one interpretation of a ranking is that it reflects the attitudes of public officials regarding the extent to which recipients are worthy or deserving of transfers. However each group of five recipients is ranked by multiple officials and (except on very rare occasions) these rankings are not identical. How might one aggregate the information in the rankings to obtain a measure of perceived recipient worthiness? The most obvious way to do this is to compute the average rank, or equivalently, the expected payoff for each recipient. This has the advantage of simplicity but treats the ranking itself as a cardinal measure. Under this procedure, an increase in rank from fifth to fourth results in a rise in measured worthiness that is identical to that corresponding to an increase in rank from second to first.

An alternative approach to assigning a score to each individual which respects the ordinal nature of the ranking data is based on the Plackett-Luce model (Plackett 1975, Luce 1959). This model views a ranking as a sequential act on the part of the decision maker, who begins by selecting the highest ranked object, then the second highest, and so on. A key assumption is the independence of irrelevant alternatives: for any two objects  $i$  and  $j$  that have yet to be ranked, the relative likelihood of being selected next is independent of the sequence of objects that have already been ranked. In this case, if  $p_i$  denotes the probability that object  $i$  is ranked first, then the likelihood of observing a sequence that has objects  $i$  and  $j$  in the first two positions is simply  $p_i[p_j/(1-p_i)]$ . Similarly the set of sequences beginning with  $ijk$  have probability  $p_i[p_j/(1-p_i)][p_k/(1-p_i-p_j)]$ , and so on.

Let  $n$  denote the total number of rankings of the set of  $r$  objects that are available. Each of these rankings is a sequence of length  $r$ . Let  $n_i$  denote the number of rankings with object  $i$  in the first position,  $n_{ij}$  the number with  $i$  and  $j$  in the first two positions respectively, and so on. Then, under the assumption that the process generating the data is as described above, estimates for  $p_i$

can be obtained by maximizing the following likelihood function (Plackett, 1975, p.196):

$$L(p) = \frac{(\prod p_i)^n}{\prod(1 - p_i)^{n_i} \prod(1 - p_i - p_j)^{n_{ij}} \prod(1 - p_i - p_j - p_k)^{n_{ijk}} \dots},$$

where  $p = (p_1, \dots, p_r)$  and the last product in the denominator involves sequences of length  $r - 1$ .

This is equivalent to

$$L(p) = \frac{(\prod p_i)^n}{\prod p_i^{m_i} \prod(1 - p_i)^{n_i} \prod(1 - p_i - p_j)^{n_{ij}} \prod(1 - p_i - p_j - p_k)^{n_{ijk}} \dots},$$

where the last product in the denominator involves sequences of length  $r - 2$ , and  $m_i$  denotes the number with object  $i$  in the *last* position.

The estimation of the probabilities  $p_i$  can be illustrated using a simple example. Consider the following five rankings of five objects, where each row represents the complete ordering of a *single* ranker, and different rows correspond to different rankers:

1	3	4	5	2
3	1	4	5	2
1	3	4	2	5
2	1	4	5	3
4	3	1	2	5

Here we have

$$\begin{aligned} n_1 &= 2, \quad n_2 = n_3 = n_4 = 1, \\ n_{13} &= 2, \quad n_{21} = n_{31} = n_{43} = 1, \\ n_{134} &= 2, \quad n_{214} = n_{314} = n_{431} = 1, \end{aligned}$$

with all other partial sums equal to 0. Also, looking at objects in the last position, we get

$$m_2 = m_5 = 2, \quad m_3 = 1.$$

Substituting this data into the likelihood function and maximizing, we obtain estimates

$$p_1 = 0.480, \quad p_2 = 0.039, \quad p_3 = 0.237, \quad p_4 = 0.210, \quad p_5 = 0.035.$$

this may be compared with scores obtained by using the rank itself as a measure.

Figure 2 shows the empirical distribution of Plackett-Luce probabilities in our sample, which is clearly skewed towards zero.

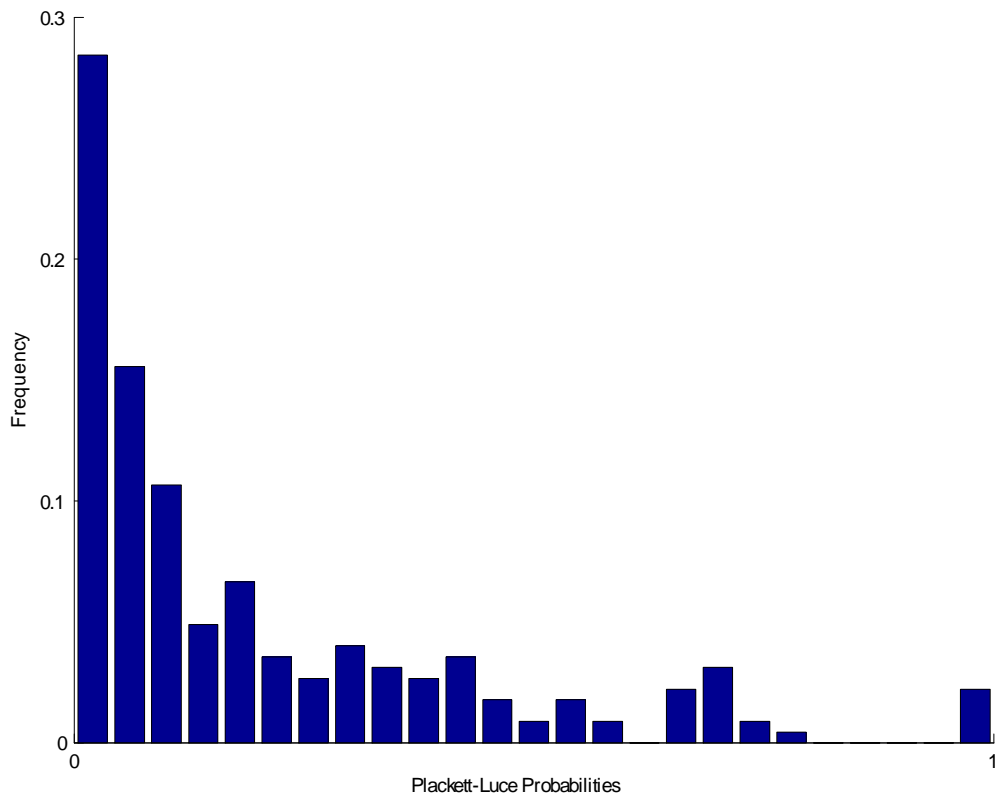


Figure 2. Sample distribution of Plackett-Luce probabilities.

The Plackett-Luce model yields estimates that are highly nonlinear in the rank itself. Moreover, since the probability assigned to any given recipient depends on the precise manner in which all other recipients in the pool are ranked, any given value of the average rank is consistent with a wide range of probabilities. This is shown in Figure 3, which illustrates the "curvature" of the (stochastic) relationship between the probability and average rank for all recipients who were ranked by precisely five rankers. Note that the probability drops sharply when an individual's average rank increases from 1 to 2, but much less dramatically for shifts in average rank from 4 to 5. This suggests that the probability might be a good measure of the degree to which attributes are highly rewarded when the resources to be allocated are very scarce. The more limited the resources, the more critical it is to be highly ranked. In other words, the expected economic value of moving from second to first place may be substantial, while moving from fifth to fourth may have negligible benefits. Using the average ranking as a measure of worthiness does not capture this effect.

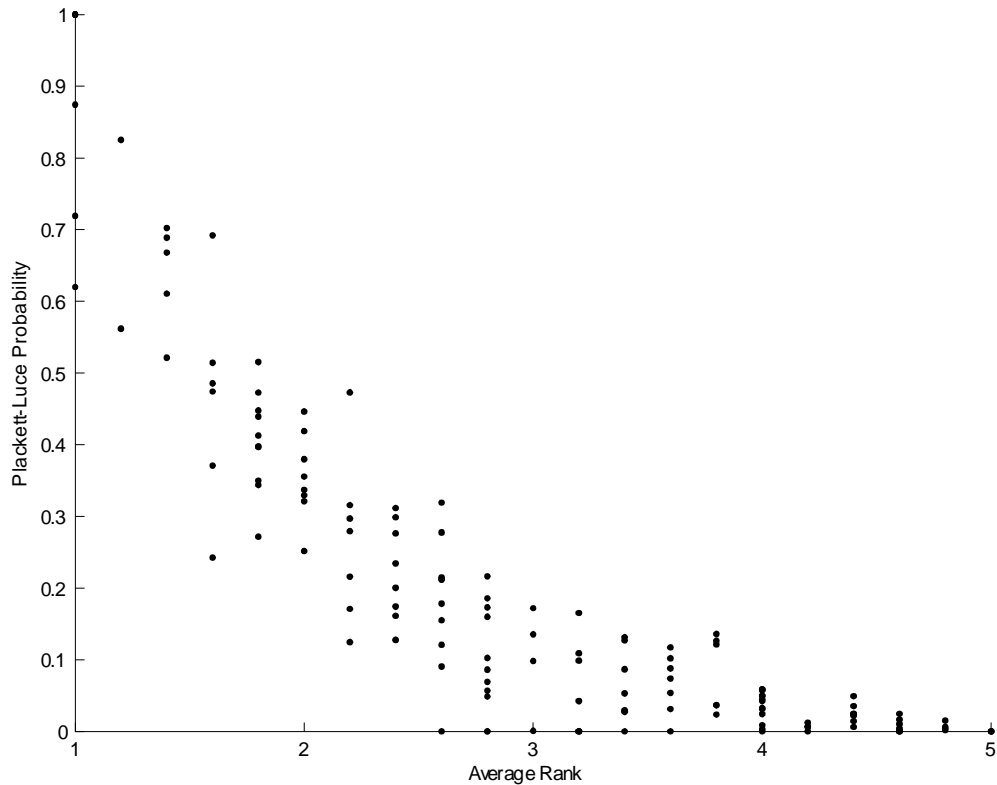


Figure 3. Plackett-Luce Probabilities and Average Rank

The manner in which certain recipient attributes affect the probability of being highly ranked is described in Figure 4. The top-left panel shows that recipients belonging to the target group have much higher probabilities on average than those in the control group, so rankers recognize and allocate resources to those most likely to be eligible for them in the broader social setting. The top-right panel shows that women are ranked above men on average. The bottom-left panel shows that individuals who were displaced by political violence were treated much more sympathetically by rankers on average, being more than twice as likely to be ranked first. Finally, the bottom-right panel shows a striking effect of the number of minor dependents. Rankers systematically divert resources towards those with dependent children, and do so in a manner that increases monotonically with the number of dependents.

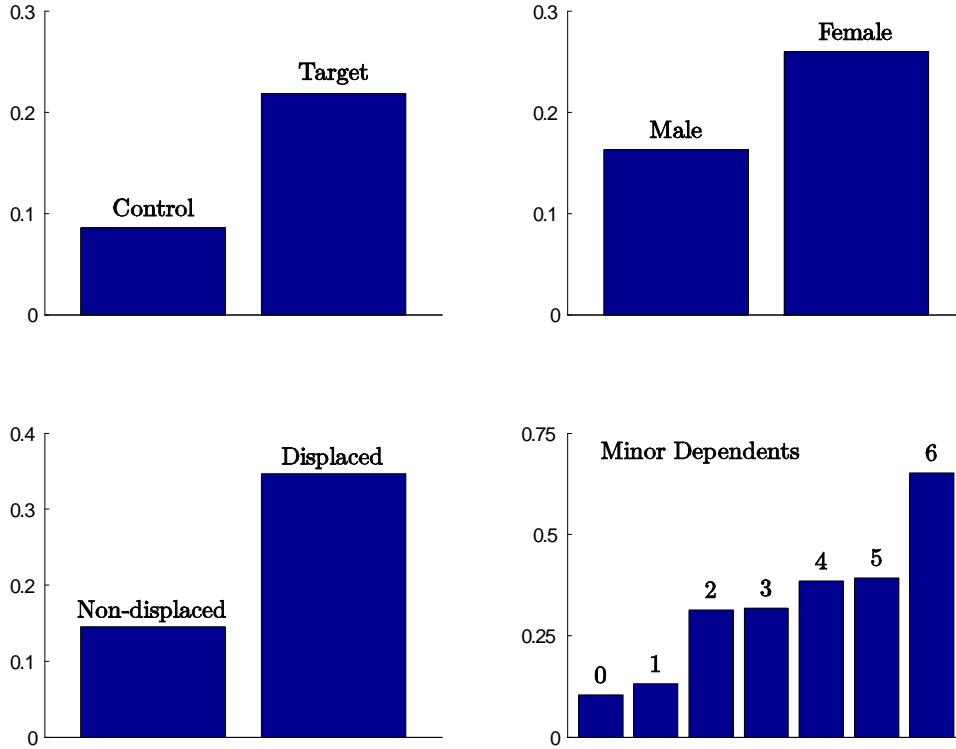


Figure 4. Plackett-Luce probabilities and recipient attributes

The regularities shown in the figure are merely suggestive, however, and the relationship between ranker attitudes and beneficiary attributes needs to be explored in a regression context. This is done next.

## 5 Regression Results

The Plackett-Luce model provides a parsimonious measure of the likelihood of being highly ranked but tells us nothing about the determinants of this likelihood in relation to recipient attributes. In order to explore this relationship, we interpret the ranking as being the outcome of a random utility model along the lines of Beggs et al. (1981). Specifically, let  $u_{ij}$  denote the utility obtained by official  $i$  when recipient  $j$  is paid. This depends on a vector of attributes  $z_{ij}$  (which may include interactions between recipient and official attributes) and a disturbance term  $\varepsilon_{ij}$  as follows:

$$u_{ij} = \beta z_{ij} + \varepsilon_{ij}$$



A recipient  $j$  is ranked above recipient  $k$  by official  $i$  if and only if  $u_{ij} > u_{ik}$ . If the vector  $z_{ij}$  depends only on recipient attributes, we have the case of homogeneous official preferences. Some degree of heterogeneity in the preferences of public officials can be captured by allowing for interactions between their attributes and those of recipients.

Beggs et al. (1981) derive the likelihood function for this random utility model under the assumption that the disturbances  $\varepsilon_{ij}$  are independently and identically distributed across all  $i$  and  $j$ , and take on the extreme value distribution:  $\Pr(\varepsilon_{ij} \leq t) = \exp(-\exp(-t))$ . This is the rank-order logit model, which we use to obtain maximum likelihood estimates of the parameter vector  $\beta$ .

Table 2. Rank-order logistic regression results

	(1)		(2)		(3)	
	$\beta$	S.E.	$\beta$	S.E.	$\beta$	S.E.
Target	0.828***	0.287	1.266**	0.535	0.809***	0.288
Female	0.423***	0.124	0.858***	0.242	0.047	0.196
Age	0.012*	0.006	0.013	0.018	0.012**	0.006
Black	0.233	0.178	0.026	0.365	0.196	0.179
Indigenous	0.179	0.204	-0.163	0.640	0.234	0.206
Married	-0.082	0.219	0.030	0.617	-0.071	0.219
Common law	-0.047	0.124	0.556	0.394	-0.035	0.125
Widow(er)	1.299***	0.406	1.592*	0.816	1.367***	0.408
Education	-0.024	0.017	0.067	0.059	-0.023	0.017
Minor dependents	0.308***	0.047	0.802***	0.165	0.311***	0.047
Displaced	0.409**	0.167	1.823***	0.514	0.409**	0.167
Ex-combatant	-0.365	0.230	0.870	0.595	-0.322	0.231
Street recycler	-0.172	0.273	-1.206	0.866	-0.183	0.274
Both Female					0.585**	0.239
Number of Rankers	170		56		170	
Number of Observations	850		280		850	

Significance reported at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels

Results for three specifications of the model are reported in Table 2. In specification (1) we use data only from target rankers (actual public officials rather than controls assigned to this group).

The set of explanatory variables includes a wide range of recipient attributes visible to the ranker as well as one attribute that was not visible: whether or not the recipient was a target or a control. Our reason for including this is to ascertain whether or not the photograph carries information that does not appear elsewhere on the card and which affects the ranker's judgment. It turns out that it does: target recipients are ranked significantly higher than controls, despite inclusion of all other information visible to rankers. In addition, women and displaced persons elicit a significant positive response from the rankers, as does the number of minor dependents. A strong effect is also observed for those who have lost their spouses (many of these are young widows with children who have been displaced from their homes). Race, ethnicity, marital status and education appear not to have significant effects, and neither does one's status as a former combatant or a street recycler.

Specification (2) uses the same explanatory variables as in (1) but uses data only from the control group of rankers. This allows us to see whether there are criteria used by public officials that differ systematically from those used by other members of society. The differences do not appear to be large. Ex-combatants are punished by public officials and rewarded by the controls but in neither case is the effect statistically significant. Street recyclers are treated much more punitively by the controls, but again the difference is not statistically significant.

Specification (3) is identical to (1) except that we allow for the possibility the male and female public officials differ in the weight they attach to the gender of the recipient. This is done by adding a dummy variable which takes the value 1 if both ranker and recipient are female. Not only does this turn out to have a positive and significant coefficient, but its inclusion causes the coefficient on the gender of the recipient to lose significance. Hence it appears that women are significantly favored in the rankings by female public officials but not by males. The other effects are robust: the number of minor dependents, the loss of one's spouse, and the status of being displaced are all factors that result in significantly higher rankings.

## 6 Discussion

The criteria on the basis of which public funds are to be disbursed among transfer recipients cannot be contractually specified with complete precision. Furthermore, even for well-specified criteria, monitoring and enforcement is imperfect at best. This leaves public officials with considerable discretion, and their private attitudes therefore have important distributive consequences. Our experimental design, and the recruitment of subjects drawn from representative populations of

rankers and recipients, allowed us to identify certain key elements of their preferences. Our analysis is positive rather than normative: we do not ask what *should* matter in the allocation decisions of the public officials, but rather what *does* matter in their ranking behavior when faced with recipients similar to those with whom they interact on a daily basis.

Our results suggest that public officials tend to favor victims of prior misfortune, such as widows with minor dependents, and individuals who have been displaced by political violence. Women in general are ranked higher, after controlling for other factors. Certain attributes result in lower rankings, perhaps reflecting discriminatory attitudes. Ex-combatants from the political conflict, street recyclers and individuals in common law relationships generally have a smaller likelihood of being ranked high. Some of these attributes are highly collinear with other attributes (for instance ex-combatants tend to be young males). Standard errors are higher as a result, and many of these coefficients are therefore insignificant.

While the written information on recipient cards is quite detailed, it is possible that the photographs themselves carry information about additional attributes that rankers find salient. We did not find any effects of self-reported race or ethnicity, but this leaves open the possibility that physical features apparent in the photographs do affect ranker perceptions and decisions. A visual evaluation of a face has been shown to have significant effects in certain experimental settings. For instance, the attractiveness of subjects appears to influence the incidence of trust and reciprocity (Eckel and Wilson 2005; Wilson and Eckel 2006). Eckel (2007) reviews a series of studies, including her own experimental work, showing how more attractive people get better treatment in court, in the labor market and in laboratory ultimatum games. Attractive people also trigger initially higher contributions in public goods games and are more likely to be chosen and trusted in prisoners' dilemma games. In the highly asymmetric environment considered here, attributes such as perceived vulnerability may be more salient than attractiveness. We have public officials and controls with no major socioeconomic stress ranking recipients who are in a much less secure position both inside and outside of the lab, and with no power over the payoffs to the rankers. We leave to future research the task of systematically extracting attribute information from the photographs, and exploring the effects of this information on the behavior of public officials.

## References

- [1] Alatas, Vivi, Lisa Cameron, Ananish Chaudhuri, Nisvan Erkal & Lata Gangadharan, (2006). "Subject Pool Effects in a Corruption Experiment: A Comparison of Indonesian Public Servants and Indonesian Students," Department of Economics - Working Papers Series 975, The University of Melbourne.
- [2] Andreoni, James (2007a) "Charitable Giving." prepared for *The New Palgrave Dictionary of Economics*, 2nd Edition.
- [3] Andreoni, James (2007b) "Philanthropy." in S-C. Kolm and J. Mercier Ythier, eds., *Handbook of Giving, Reciprocity and Altruism*, Amsterdam: North Holland, pp. 1201-1269.
- [4] Azfar, Omar and William Robert Nelson (2007). "Transparency, wages, and the separation of powers: An experimental analysis of corruption". *Public Choice* 130: 471-493.
- [5] Barr, Abigail & Lindelow, Magnus & Serneels, Pieter (2004). "To serve the community or oneself - the public servant's dilemma," Policy Research Working Paper Series 3187, The World Bank.
- [6] Beggs, S, S. Cardell and J. Hausman (1981). "Assessing the potential demand for electric cars". *Journal of Econometrics* 17: 1-19.
- [7] Branas, Pablo (2006) "Poverty in Dictator Games: Awakening Solidarity". *Journal of Economic Behavior & Organization* 60:306-320.
- [8] Brewer, Gene A., Sally Coleman Selden & Rex L. Facer II (2000). "Public Service Motivation: Individual Conceptions of Public Service Motivation". *Public Administration Review* 60: 254–264.
- [9] Carpenter, J., Holmes, J., Matthews, P. (2007). "Charity Auctions: A Field Experimental Investigation". *Economic Journal*, forthcoming.
- [10] Eckel, Catherine (2007). "People Playing Games: The Human Face of Experimental Economics". Presidential Address. *Southern Economic Journal* 2007: 73.
- [11] Eckel, Catherine and P. Grossman (2006). "Volunteers and pseudo-volunteers: The effect of recruitment method in dictator experiments". *Experimental Economics* 3: 1386-4157.

- [12] Eckel, Catherine, P. Grossman and Rachel M. Johnston (2005). “An experimental test of the crowding out hypothesis”. *Journal of Public Economics* 89: 1543-1560.
- [13] Eckel, Catherine C., and Rick K. Wilson. (2005). “Detecting trustworthiness: Does beauty confound intuition?” Unpublished paper, University of Texas at Dallas.
- [14] Fong, Christina (2007) “Evidence from an Experiment on Charity to Welfare Recipients: Reciprocity, Altruism and the Empathic Responsiveness Hypothesis.” *Economic Journal* 117: 1008-1024.
- [15] Levitt, Steven D. and List, John A. (2007). “Viewpoint: On the Generalizability of Lab Behaviour to the Field.” *Canadian Journal of Economics* 40: 347-370.
- [16] Luce, R. D. (1959). *Individual Choice Behavior*, New York: Wiley.
- [17] Moynihan, Donald P., Sanjay K. Pandey. (2007). “The Role of Organizations in Fostering Public Service Motivation.” *Public Administration Review* 67: 40–53.
- [18] Perry, James L. (1996). “Measuring Public Service Motivation: An Assessment of Construct Reliability and Validity”. *Journal of Public Administration Research and Theory: J-PART* 6: 5-22.
- [19] Perry , James L. , and Lois R . Wise (1990). “The Motivational Bases of Public Service. *Public Administration Review* 50: 367-73 .
- [20] Plackett, R.L (1975) “The Analysis of Permutations”. *Applied Statistics* 24: 193-202.
- [21] Wilson, Rick K., and Catherine C. Eckel. (2006). Judging a book by its cover: Beauty and expectations in a trust game. *Political Research Quarterly* 59:189–202.





