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Contributions in heterogeneous communities: Evidence from Indonesia

Cagla Okten[1], Una Okonkwo Osili[2]

[1] Department of Economics, Bilkent University, Bilkent, Ankara 06800, Turkey
(e-mail: cokten@bilkent.edu.tr)
[2] Department of Economics, Indiana University-Purdue University at Indianapolis, Indianapolis, IN 46202, USA (Fax: +1-317-274-0097; e-mail: uosili@iupui.edu)

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Abstract. Using household-level data from Indonesia, we investigate the importance of community characteristics: ethnic diversity and central government transfers, inter alia, in determining monetary and time contributions to community organizations. We present a framework in which ethnic diversity affects contributions through three channels: (1) diversity of preferences (2) transaction costs, and (3) inter-household considerations in the form of altruism towards one's ethnic group. Our empirical findings provide evidence that ethnic diversity has a negative and significant effect on contributions, and the prevalence of community organizations. We find evidence that government spending crowds out private monetary contributions, with a less robust effect on time contributions.

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1. Introduction

Community organizations can play a central role in the development process. Where markets and states face limitations, community-based institutions

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provide public goods and services, organize economic production, and redistribute income. Although there is a great deal of interest in the determinants of collective action in developing countries, very little is known about the transfer of resources from households to community-based institutions. In this paper, we investigate monetary and time contributions to community organizations using household-level data from Indonesia.

This paper aims to advance existing knowledge on private transfer flows to community organizations in developing countries. Within heterogeneous societies, community characteristics including ethnic diversity can affect contributions to community organizations. We investigate three potential channels through which ethnic diversity can affect monetary and time contributions.[1] The first channel can be summarized as the "diverse preferences" argument (Alesina et al. 1999). It may be difficult to define objectives towards the financing of local public goods where the community members have diverse preferences due to ethnic diversity and other forms of heterogeneity. Second, ethnic diversity may increase the transaction costs of community-level production. If trust, social sanctions, and reciprocity norms are cultivated at the group level, these are less likely to be effective in diverse environments (Miguel 2001). Ethnic diversity may also be related to the absence of social cohesion and, in some extreme cases, civil violence, which may hinder efforts to organize contributions at the community-level. Finally, ethnic diversity can affect contributions if households belonging to the same ethnic community are altruistically-linked (Becker 1981; Grimard 1997; Luttmer 2001).

We also study the impact of government expenditure on private transfers to community-level institutions. There is very limited evidence on the relationship between government transfers and private resource flows in developing countries, as previous studies rely on data obtained mainly from developed countries[2] (See Clotfelter 1985; Kingma 1989; Weisbrod 1988). The developing country setting used in this paper offers a unique opportunity to study the role of government spending in an environment where public transfers tend to be limited in scope, and where few tax-related incentives for transfer behavior exist.

The main empirical findings from Indonesia provide support for an exchange-based model of community transfers. Households transfer resources in a manner that reflects the benefits they receive from the community organization. We find that ethnic diversity has a negative effect on both monetary and time contributions, as well as on the prevalence of community-based organizations. In addition, we explore potential mechanisms through which ethnic diversity influences contributions. Results on government spending yield important insights. Government transfers appear to crowd-out private monetary contributions, with less convincing evidence on time contributions.

The rest of the paper is organized as follows: Section 2 provides a description of the setting. In Sect. 3, we present the conceptual framework. Section 4 discusses the data sources. Section 5 outlines the empirical framework. In Sects. 6 and 7, we present the results and conclusions.

2. The setting: Community organizations in Indonesia

Indonesia's national motto, "Unity in Diversity," makes reference to its heterogeneous linguistic and ethnic composition. The country's official

language is Bahasa Indonesia. However, more than 668 other languages and dialects are also spoken. The major languages spoken often belong to distinct ethnic groups. These ethno-linguistic groups include the Javanese (45% of the population), Sundanese (14%), Madurese (7.5%), coastal Malays (7.5%), others (26%).

An early observer notes the importance of ethnicity in the Indonesian context: ''Regardless of the political settlement effected in Indonesia in the near future, the social and ethnic differences of its population will continue to constitute a major problem in the political and economic development of the area'' (Van Der Kroef 1950:450). Until recently, rates of regional migration in Indonesia were relatively low (Hugo 1982). Geographical barriers make transportation between regions very difficult. In addition, land markets are not well-developed in many areas. Since the early 1990s, however, there has been a rising trend in mobility.[3] Investments in road networks and other transport infrastructure have improved the ease of movement across regions. Consequently, ethnic groups with distinct languages, customs, and traditions (*adat*) have moved towards greater economic and social interaction.

During the Suharto regime (1965–1998), Indonesia was centrally governed, with regional and local governments wielding very little political autonomy. Central government involvement in communities also grew during this period with nearly 80% of total public expenditure at the provincial level being disbursed by the central government. The remaining 20% of local public expenditure was made up of grants (INPRES Desa or Village development program) from the Central government for development projects including roads, irrigation, schools, and public health, and less than 10% of regional government expenditure was derived from local taxes and fees (Booth 1996). Official government literature during this period emphasizes *gotong royong*, or community participation as a central part of a national development strategy (Bowen 1986). Communities, in turn, were expected to provide volunteer labor, building materials, and money for use with central government transfers. The centralized system of community organization allows us to study patterns of contributions because organizations are comparable across regions. In our data, households may contribute time, money, or materials to an irrigation association (*subuk*), a neighborhood security arrangement, rice cooperatives, and neighborhood health posts (*posyandu*)- all these groups can be classified as community-level organizations. A notable example, *posyandu* relies on salaried government staff and volunteer workers to deliver key health services to the community (Frankenberg and Thomas 2001).

3. Conceptual framework

Economic theory provides a framework for understanding transfer patterns at the community level. With altruism, households contribute money and time to community organizations because they care about other members of the community. Under the exchange motive, households transfer resources because they benefit directly from their contributions and enjoy the goods and services produced by community organizations. Our framework considers the role of both motives in the household's transfer decision. We assume that households derive benefits from the services of community organizations and may also care about the utility of others that use these services. We model

services as local public goods whose production requires household contributions and government transfers as inputs.

Within altruism and exchange-based considerations, community-level variables, including ethnic diversity and government transfers, can influence the household's transfer decision. In this section, we present our conceptual framework. The formal model is detailed in an appendix, which is available upon request.

3.1. Ethnic diversity and contributions

Ethnic diversity can affect contributions to community organizations through the diversity of preferences, transaction costs of organizing, and inter-household considerations in the form of altruism towards one's own ethnic community. These mechanisms are presented below and suggest that ethnic diversity can have a negative impact on contributions. It is important to recognize that ethnic heterogeneity may also be positively associated with contributions. Within ethnically diverse settings, community organizations may provide public goods when governments and markets fail to satisfy the heterogenous needs of consumers (Weisbrod 1988).[4]

Diverse preferences. Ethnic diversity may lead to a polarization of preferences where a larger fraction of the community may find the type of services offered by the community organization undesirable. This has a negative effect on the probability of contributions and the level of monetary or time transfers to the community organization when there is only one type of transfer under consideration. If households jointly choose monetary and time transfers, then the effect of diverse preferences is more complex. Specifically, if the marginal utility of money and time contributions diminish "rapidly enough" to compensate for any possible negative cross-utility effects of money and time transfers, then we expect the probability and level of money and time contributions to decrease with greater diversity in preferences. In our empirical work, we use an indicator variable to measure whether a household belongs to the majority ethnic group in a community or belongs to a minority ethnic group (in a community where there is a majority ethnic group) to test the diversity of preferences hypothesis.[5] If the type of services provided are based on majority preferences, a household from a non-majority group may find them less desirable and will be less likely to contribute to their production. We use this indicator variable (non-majority = 1) as a measure of a household's preference distance from the services provided by the community organization.

Transaction costs. Community-level production often depends on trust and communication among groups. Ethnically diverse communities may have low levels of trust and may lack community-level norms of reciprocity, particularly if these attributes are cultivated within ethnic groups. With high transaction costs in a community, the formation of community-level organizations may be more difficult. Furthermore, it may be more costly to produce services in the presence of communication barriers arising from ethno-linguistic diversity. Thus, high transaction costs will have a negative effect on organization existence and will decrease the probability of giving when we only consider one type of transfer. If households jointly choose

monetary and time transfers, then the effect of transaction costs on giving is likely to be ambiguous and will depend on cross-utility effects of money and time transfers as stated in the previous section. We test the transaction costs hypothesis by constructing an index of ethno-linguistic diversity and measuring its effect on the probability and level of monetary and time transfers.

Inter-household considerations. Ethnic diversity may influence contributions through altruistic preferences. The extent to which altruistic preferences lead to variations in the level of support for community services depends on differences across households in the correlation between the weight a household (i) places on the utility of another household, (j), and the marginal benefit of $i's$ contribution to j. The marginal benefit of $i's$ contribution to household j is positive if j receives community services. In particular, support for community services, and hence the level of contributions is higher among individuals for whom this correlation is larger.[6] Thus, ethnic diversity affects contributions if the weight that household i places on the utility of household j is higher when j belongs to i's ethnic group. The prediction that emerges here is that household i will increase its contributions as the number of similar households who benefit from the services of the community organization rises. In this paper, we test the altruism towards one's own ethnic group hypothesis by investigating the impact of the share of beneficiaries from a household's ethnic group on the probability and level of contributions.

Another channel that inter-household effects may affect the time transfer decision is when households prefer to interact with others who belong to the same ethnic or socio-economic group, as modelled by Alesina and LaFerrara (2000). In their model, individuals derive disutility from interacting with people who belong to a different ethnic group. For this reason, time contributions may be particularly responsive to the share of participants in the community organization who belong to one's own ethnic group and the household's non-majority status in the community.

In this section, we have discussed the channels through which ethnic diversity may affect contributions. We examine the relative importance of these mechanisms using various ethnicity measures in the empirical section of the paper. From the onset, we note that there is likely to be some degree of correlation between our ethnicity variables, which may limit our ability to fully differentiate between various mechanisms through which ethnic diversity affects contributions.

3.2. Government expenditure and contributions

If households' monetary (time) transfers and government expenditure are substitutes in the production of community services, then government support is likely to crowd out contributions. When household contributions and government transfers are complementary, then the effect of government expenditure on private contributions is ambiguous. Since time contributions and government expenditure are likely to be complements while monetary contributions and government expenditure may be substitutes, we expect crowding-out issues to be less (more) relevant for time (monetary) transfers.

We test the effect of government expenditure on contributions in our empirical section.

4. Data

We test the implications of our model using data from Indonesia. The data are based on the second wave of the Indonesia Family Life Surveys (IFLS2), conducted by RAND in 1997/98, and are representative of about 83% of Indonesia's population.

The second wave is composed of about 7500 households. In addition, we use a separate Community-Facility Survey, which measures infrastructure, availability of services, and other community characteristics for about 314 communities where households reside.[7] Table 1 provides an overview of the household and community variables used in our analysis.

The IFLS2 data is particularly well-suited to the study of transfers to community organizations. To our knowledge, there are no comparable data sets (from developed or developing countries) that provide household-level evidence on transfers to community organizations and benefits received from a representative national sample of households. Community organizations in our sample are largely economic in orientation. In this way, our focus differs from other studies that have examined participation in social, religious, and political groups.[8]

Over 40% of households contributed money or materials to a community organization. The mean total monetary contribution in the survey year for households is about 21150 rupiah, about 3% of total annual household expenditure (standard deviation = 93435 rupiah). Time contributions are widespread in our sample - about 80% of households contributed time to an organization in the community. It is important to note that surveys in developed countries have found that households are more likely to contribute money to community organizations (rather than time contributions, as we have found). About 58% of households in our sample report that they received benefits from community organizations.

The IFLS2 data allow us to investigate the extent to which giving and receipt patterns vary across households. From the onset, it is important to note that it may be difficult to measure all the benefits that households receive from organizations in an accurate manner (Clotfelter 1992). Benefits may not be tangible goods and services that can be observed by the researcher (such as membership rights and a sense of belonging in the community) and may be realized over a long-term horizon.

4.1. Ethnicity variables

Following our theoretical framework, we set out to examine the impact of ethnicity on the household's decision to contribute to the community organization.[9] To capture ethnic diversity at the community level, we construct an Ethno-linguistic Diversity Index (EDI):

$$EDI_k = 1 - \sum_i (share\ of\ ethnolinguistic\ group\ i\ in\ community\ k)^2 \qquad (4.1)$$

The Ethno-linguistic Diversity index is constructed using household level data. This index of ethnic diversity captures the probability that two randomly selected households belong to different ethnic groups. This measure of ethnic diversity has been used widely in the existing literature (Alesina et al 1999; Easterly and Levine 1997; Miguel 2001).

When this index is close to zero, it indicates that most households belong to the same ethnic group. In contrast, when the index approaches 1, it means that households in a given community belong to many different ethnic groups. The ethnic diversity index is used in our analysis to measure the effect of transactions costs of community-level production on contributions.[10]

We also include an indicator variable in our analysis which captures whether a household **belongs** to a non-majority ethno-linguistic group in a given community. Specifically, our indicator variable (non-majority or minority status) is equal to 1 if household belongs to a minority ethno-linguistic group, in a community where there is an ethnic group which constitutes the majority of the population in village (i.e., an ethnic group that accounts for more that fifty percent of the community's population). This non-majority status variable is used in our analysis to test the diverse preferences hypothesis. Under the diverse preferences hypothesis, if community organizations provide services that reflect the preferences of the median voter who is from the majority group, then a household from a minority group will find these services less desirable and will be less likely to contribute.

The share of beneficiaries from household *i's* ethno-linguistic group is an important variable in our analysis (SHARE). This variable allows us to test whether inter-household considerations, in the form of altruism towards one's own ethnic group, are relevant in our environment. SHARE reflects the distribution of benefits from community organizations in a given community, and its value will vary across ethnic groups within the same community. This variable is constructed as follows:

$$SHARE = \frac{No.\ of\ households\ from\ household\ i's\ ethnic\ group\ with\ benefits}{No.\ of\ households\ with\ benefits} \tag{4.2}$$

4.2. Other community variables

Community characteristics used in our analysis include government involvement in the community, the density of community activities, and village infrastructure. The measure of government involvement used in our estimations is per capita transfers (measured in rupiah and scaled by 1000) from the central government. This data are available at the municipality (kabupaten) level and was obtained from the *Village Government Financial Statistics* 1998, a report published by the Indonesian Central Bureau of Statistics (*Badan Pusat Statistik or BPS*).

The index of community activity is defined as the number of social activities and services that exist in a village. This variable is constructed using the Community-Facility Survey and is a weighted sum of activities conducted in a community, where the weights are frequency with which activities are conducted.[11]

Table 1. Summary statistics Indonesia family life surveys (IFLS2)

Variable	Full sample		Urban		Rural	
	N	Mean	N	Mean	N	Mean
Panel A: Households (N = 7510)						
GiveHH contributed money/materials to community organization?	7510	0.44	3447	0.52	4063	0.37
TimeHH contributed time to community organization?	7510	0.81	3447	0.81	4063	0.81
ReceiveHH received service, money, materials other from community organization?	7510	0.30	3447	0.33	4063	0.27
Total amount contributed (in Rupiah) to community organizations in survey year	7510	21150.91 (93435.09)	3447	30206.93 (109952.70)	4063	13501.69 (75940.06)
Total amount of time spent (in hours)	7510	346.50 (1356.66)	3447	379.58 (1550.32)	4063	318.56 (1167.80)
Head's age	7492	47.35 (14.28)	3438	46.92 (13.99)	4054	47.72 (14.51)
Head's age squared	7492	2446.14 (1442.79)	3438	2397.32 (1401.62)	4054	2487.54 (1475.71)
Head's years of schooling	7387	6.25 (5.26)	3388	8.10 (5.59)	3999	4.67 (4.40)
Head's marital status (married = 1)	7510	0.81	3447	0.80	4063	0.82
Muslim (= 1)	7510	0.88	3447	0.87	4063	0.88
Household size	7510	5.20 (2.44)	3447	5.41 (2.59)	4063	5.03 (2.29)
Number of children < 14 years	7510	0.88 (1.02)	3447	0.82 (0.99)	4063	0.94 (1.05)
Per capita household expenditure (in Rupiah)	6896	206303.60 (313780.80)	2962	283887.40 (362359.60)	3934	147888.90 (256531.80)
Urban(= 1)	7510	0.46				
Share of beneficiaries from ethnic group	6663	0.84	2994	0.75	3669	0.92
Non-majority status	6793	0.16	2972	0.19	3821	0.13

Panel B: Communities (N = 313)						
Log population size	306	8.72	178	9.18	128	8.08
		(1.04)		(0.97)		(0.75)
Per capita average expenditure (in Rupiah)	312	229630.50	180	294072.20	131	140653.60
		(150092.30)		(163056.00)		(59433.40)
Ethnic diversity index	313	0.29	181	0.43	131	0.10
		(0.36)		(0.39)		(0.21)
Panel B: Communities (N = 313)						
Ethnic dominance (Population share of largest ethnic group)	303	84.15	172	76.59	130	90.52
		(19.20)		(22.60)		(22.60)
Gini coefficient	313	0.54	181	0.54	131	0.54
		(0.04)		(0.05)		(0.04)
Average years of schooling	313	6.41	181	7.89	131	4.34
		(2.99)		(2.85)		(1.67)
Received underdeveloped village grant?	314	0.21	181	0.14	131	0.29
		(0.41)		(0.35)		(0.46)
Index of community activity	298	14.05	171	14.58	127	13.35
		(4.22)		(4.46)		(3.77)
Number of community health posts (*posyandu*)	304	7.93	177	10.05	127	4.98
		(6.40)		(7.14)		(3.48)
Central government expenditure per capita (in Rupiah)	313	2.65	181	1.93	131	3.66
		(2.39)		(1.68)		(2.83)
Community electricity index	305	4.13	177	5.13	128	2.76
		(1.79)		(1.61)		(0.87)
Mass immunization since 1980 (immunize = 1)	310	0.38	181	0.38	128	0.37
Panel C: Organizations (N = 10)						
Occur	10	0.20	10	0.21	10	0.41

Standard deviations are shown in parentheses.

To account for regional variation, we construct province dummies, which are used in our estimations. Province dummies reflect ethno-linguistic variation and capture the level of urbanization, population density, as well as other differences across regions.

4.3. Household variables

The existing literature on private transfers emphasizes the role of household variables. We include variables that capture the socio-economic circumstances of the household, including age, years of schooling, marital status, religion (Muslim = 1), household size, number of children, per capita household expenditure, and an indicator variable for receipt of benefits (received benefits from community organization = 1).

5. Empirical specification and methods

5.1. Contributions to community organizations

This section presents an empirical model of the household's decision to contribute money, materials, and time to a specific organization in the community. Let i index households, j index community organizations, and k index communities. We specify a two-equation model below

$$Y^*_{ijk} = \beta_1 + \beta_2 H_i + \beta_3 V_k + \beta_4 O_j + \varepsilon_{ijk} \tag{5.1}$$

$$Z^*_{ijk} = \beta_1 + \beta_2 H_i + \beta_3 V_k + \beta_4 O_j + v_{ijk} \tag{5.2}$$

where Y^*_{ijk} $\left(Z^*_{ijk}\right)$ is the "latent variable" measuring the net expected utility to household i, from contributing money (time) to organization j in community k, H_i represents a vector of household characteristics including head's age, sex, marital status, religion, years of schooling, household size, number of children in the household, per capita household expenditure, household's receipt status from community organizations, household's non-majority status, and the share of household's ethnic group with benefits; V_k is a vector of community characteristics including ethno-linguistic diversity index of the community and transfers from central government. O_j is a dummy for organization j, and ε_{ijk} (v_{ijk}) is the error term. We assume that $E[\varepsilon] = E[v] = 0$, $Var[\varepsilon] = Var[v] = 1$, $Cov[\varepsilon, v] = \rho$. Since households contribute towards the production of community services, it is reasonable to assume that the disturbances in the money and time equations include common factors.

We do not observe the "latent" variable, Y^*_{ijk} $\left(Z^*_{ijk}\right)$ but only the choice made by the household, which takes value 1 if household contributes money (time) to the community organization (i.e. Y^*_{ijk} is positive), and 0 otherwise.

$$\begin{aligned} P^1_{ijk} &= 1 \text{ if } Y^*_{ijk} > 0,\ 0 \text{ otherwise} \\ P^2_{ijk} &= 1 \text{ if } Z^*_{ijk} > 0,\ 0 \text{ otherwise} \end{aligned} \tag{5.3}$$

We first analyze the probability of giving to *any* community organization. Since there are ten community organizations in our sample, we construct:

$$P_{ik}^1 = 1 \text{ if } \sum_{j=1}^{10} P_{ijk}^1 > 0,\ 0 \text{ otherwise}$$
$$P_{ik}^2 = 1 \text{ if } \sum_{j=1}^{10} P_{ijk}^2 > 0,\ 0 \text{ otherwise} \tag{5.4}$$

We then estimate a bivariate probit specification where the dependent variables are P_{ik}^1 and P_{ik}^2. Our specification includes a rich set of household and community characteristics as explanatory variables. We refer to these estimations where we analyze the probability of giving to *any* community organization as our *general regressions*.

Our data set contains information on the amount transferred to community organizations, but it is important to recognize that money (time) transfers realized do not capture Y_{ijk}^* $\left(Z_{ijk}^*\right)$. Economic theory suggests that the consumer makes a marginal benefit-marginal cost calculation when deciding on the level of transfers and hence Y_{ijk}^* $\left(Z_{ijk}^*\right)$ represents the difference between marginal benefits and marginal costs. With this caveat in mind, we estimate a bivariate tobit model with the total amount of money and time transferred to community organizations as the dependent variables.

Next, we estimate a bivariate probit specification where the dependent variables are P_{ijk}^1 and P_{ijk}^2, the probabilities that a household contributes money and time to a specific community organization. By arranging the data in this format, we are able to further investigate the robustness of our general regressions. We refer to this analysis as our *organization-specific regressions*.

It may be difficult to fully capture all the community variables that affect monetary and time contributions. Village characteristics such as civic traditions, quality of leadership, and the costs of producing services, which may be unobserved, can also affect transfer patterns. Unobserved variables may be correlated with measured community characteristics, leading to bias in our estimated coefficients. The direction of the bias will depend on the correlation between the observed and omitted variables, as well as the true impact of observed variables on contributions. As a specification check, in our empirical analysis, we deal with unobserved heterogeneity by adopting a community random-effects probit model.

5.2. Existence of community organizations

Our theoretical framework suggests that in the presence of high transaction costs and diverse preferences, an organization is unlikely to be formed in a village. The empirical specification below allows us to analyze the determinants of a given organization's existence in a community:

$$D_{jk} = \gamma_1 + \gamma_2 V_k + \gamma_3 O_j + u_k + e_{jk} \tag{5.5}$$

where

$$\begin{aligned} D_{jk} &= 1 \text{ if organization } j \text{ exists in community } k \\ &= 0 \text{ otherwise} \end{aligned} \tag{5.6}$$

where V_k captures community characteristics that affect the demand for community organizations, including transfers from the central government and ethnic diversity index, O_j denotes a dummy variable for organization j, u_k is the community specific error term, and e_{jk} is the random error term. We estimate Eq. 5.5 using a probit model with community random effects.

Because the government may seek to achieve equity goals in the distribution of resources across communities, central government transfers may particularly target communities with low levels of community production in which case our estimates of the effect of government involvement will be biased downward (Pitt et al. 1993). To deal with the potential endogeneity of government transfers, we adopt a two stage least squares specification where we instrument for government transfers per capita with the instruments in our analysis of the prevalence of community organizations. We instrument for government transfers using two variables: the incidence of mass immunization in the community since 1980 (immunize = 1) and the community electricity index (which measures the years of electricity supply in the village).

6. Results

First, we present results which capture the probability that a household contributes to **at least one** organization, as a function of household and community characteristics in Sect. 6.1. Second, we analyze the determinants of the total amount contributed to community organizations using a bivariate tobit model. In Sects. 6.2 and 6.3, we examine the household's decision to contribute and the factors influencing the prevalence of community organizations by organization type.

6.1. General regressions

6.1.1. The decision to contribute money and materials to community organizations

Table 2 presents reduced-form results from a bivariate probit specification. The bivariate model allows us to study the effects of household and community variables on the joint decision to send monetary and/or time transfers. The dependent variable is equal to one if a household contributes money or materials (time) to *at least one* organization in the community, and zero otherwise. We note that at the aggregate level that there is less variation in the time contribution decision, as about 80% of households report positive time contributions. Columns 1 and 2 present the marginal effects for monetary and time contributions, respectively.[12]

From our results, a picture of the household-level determinants of contributions emerges. Higher income households (measured by per capita expenditure) are more likely to contribute to community organizations. However, in contrast to studies from developed countries, a household's economic position has a relatively small impact on the probability of giving. Starting from the mean, a ten percent increase in household's per capita expenditure in rupiah increases the probability of giving money (time) by about 0.7(0.1)%.[13] Educational attainment is positively associated with the incidence of monetary transfers to the community organization and statisti-

Table 2. Determinants of contributions to community organizations

General estimates	Did HH contribute to community org? Bivariate probit specification		Total Amount contributed (measured in logs) Bivariate tobit specification	
Dependent variable:	Monetary contribution Marginal effects	Time	Log monetary contribution (in Rupiah) Coefficient	Log time spent (in hours) Coefficient
Household variables				
Head's age	−0.004 (0.004)	0.001 (0.002)	−0.19 (0.09)	0.09 (0.02)
Head's age squared(X 100)	0.002 (0.004)	−0.003 (0.001)	0.15 (0.09)	−0.12 (0.02)
Sex (male = 1)	0.05 (0.03)	0.07 (0.02)	1.03 (0.76)	1.20 (0.18)
Head's years of schooling	0.01 (0.002)	−0.0001 (0.001)	0.11 (0.05)	0.00 (0.01)
Head's marital status	0.06 (0.03)	0.07 (0.02)	1.08 (0.77)	0.58 (0.18)
(married = 1) Muslim (= 1)	0.03 (0.03)	0.05 (0.02)	0.61 (0.84)	0.68 (0.21)
Household size	0.03 (0.004)	0.02 (0.002)	0.67 (0.10)	0.22 (0.02)
Number of children < 14 years	−0.03 (0.01)	−0.01 (0.004)	−0.56 (0.23)	−0.14 (0.06)
Percapita HH exp($\times 10^6$)	0.15 (0.04)	0.05 (0.04)	0.33 (0.08)	0.03 (0.02)
Urban (=1)	0.07 (0.02)	−0.002 (0.01)	1.11 (0.54)	0.00 (0.13)
Received benefit from comm org?	0.34 (0.01)	0.23 (0.01)	7.03 (0.58)	2.09 (0.10)
Community-specific variables				
Log population size	0.001 (0.01)	0.0004 (0.01)	−0.47 (0.91)	−0.04 (0.22)
Government spending (per capita)	−0.01 (0.004)	−0.003 (0.002)	−0.24 (0.62)	−0.58 (0.15)
Per capita avg expenditure ($\times 10^6$)	0.28 (0.10)	−0.001 (0.05)	0.17 (0.32)	0.07 (0.08)
Gini coefficient	−0.63 (0.19)	0.001 (0.08)	−0.31 (0.12)	−0.07 (0.03)
No of community programs	0.001 (0.002)	0.002 (0.001)	0.41 (0.26)	−0.14 (0.07)
Ethnic diversity index	−0.12 (0.04)	−0.004 (0.02)	−12.06 (4.74)	−0.78 (1.27)
Share of ethnic community receiving benefits ?	−0.01 (0.04)	0.02 (0.01)	0.02 (0.06)	0.06 (0.01)
Non majority	−0.01 (0.03)	−0.03 (0.01)	−2.13 (1.12)	−0.49 (0.28)
Number of observations	5262		5262	
Rho	0.99		0.72	
Log likelihood	−4094.16		−19716	

Marginal effects are evaluated at the sample means for continuous variables and reflect a change from 0 to 1 for discrete variables. Standard errors are shown in parentheses. All regressions include province dummies. In addition, we restrict our sample to IFLS communities where village population > 10.
* Denotes significance at the 10% Level of significance, ** at the 5% level and *** at the 1% level.

cally significant, while it is insignificant for time transfers. Male headship and household size are positively and significantly associated with both monetary and time contributions. The presence of young children (under 14) in the household has a negative and statistically significant impact on the probability of contributing money and time to a community organization. We also find that urban households are significantly more likely to contribute money while urban residence does not affect the probability of time transfers. Age does not have a statistically significant effect on the incidence of monetary contributions, while age squared has a negative and significant effect on time transfers.

We find that the household's receipt of benefits from the community organization has a positive and statistically significant impact on giving. We argue that this result provides support for an exchange-based model of transfer behavior, with households contributing when they receive benefits from the community organization. This effect is substantial – a change in a household's receipt status (as reported by the household) increases the probability of giving money (time) by about 34% (23%).

How does ethnic diversity affect monetary contributions? Consistent with our theoretical predictions, the ethnic diversity index has a negative and statistically significant effect on the probability of contributing money. A move from complete ethnic homogeneity to complete heterogeneity in a community, (which represents an increase from 0 to 1 in the ethnic diversity index) decreases the probability of giving by 12 percentage points. We find the results on ethnic diversity to be sizeable, when compared to other significant determinants of contributions. Starting at the mean, a ten percent increase in the ethnic diversity index decreases the probability of giving by about 0.5 percentage points.[14] The results presented above suggest that households have a lower probability of contributing to community organizations within ethnically diverse environments. However, the negative effect of ethnic diversity on monetary contributions may be explained by the high transaction costs of community level production as well as the diverse preferences for public goods in heterogeneous communities. It may not be possible to fully disentangle these two potential explanations in our data. However, to further differentiate between these two motives, we also include a variable that is equal to one if household belongs to a non-majority ethno-linguistic group in a community where there is a dominant ethnic group. This variable captures the diverse preference argument since our indicator variable is equal to one when the household is different than the median voter who is from the majority ethnic group. We find the non-majority variable to have a negative but insignificant impact on monetary contributions. Interestingly, the non-majority dummy is negative and statistically significant for time transfers. We also note that the ethnic diversity index is negative, but statistically insignificant for time transfers. This suggests that the preference heterogeneity may be a more important explanation for the negative effect of ethnic diversity on time contributions.

Theory also suggests that ethnic diversity can affect contributions through inter-household considerations. We examine closely the impact of the share of beneficiaries from household's ethnic group (SHARE) on contributions but find that the SHARE variable does not significantly affect monetary contributions. However, this variable has a positive and statistically significant (at the 10% level) effect on the incidence of time transfers. Starting at the mean, a ten percent increase in this variable leads to a 0.2 percentage point increase in

the probability that a household will contribute time to a community organization. Hence, we find some evidence for the altruism motive in the decision to contribute time to the community organization.

All our empirical specifications discussed above include province dummies to capture regional economic and environmental factors, as well as pre-existing traditions of community organization. Province dummies also control for some of the variation in attitudes towards giving across communities.[15]

We now turn to discuss other community characteristics that can affect the probability of giving. Results on the effect of government transfers provide some direction towards understanding the role of the public expenditure in low-income settings.[16] From our results, the probability that a household contributes money or time to community organizations is negatively and significantly associated with transfers per capita from the central government. This lends support to a crowding-out model of government spending. Starting from the mean, a ten percent increase in government spending per capita decreases the probability of giving money (time) by 0.7 (0.1) percentage points. Hence, the effect of government spending is smaller for time transfers as expected. To further demonstrate the impact of government spending, an increase from the minimum to maximum value of government spending per capita in our sample reduces the probability of monetary transfers by 19 percentage points.[17]

One might argue that ethnic diversity reflects other types of heterogeneity such as income inequality within a community. The existing literature suggests that income or wealth inequality can affect incentives to contribute to the community organization (LaFerrara 2001). To rule out this interpretation of our results, we control for income heterogeneity at the community-level using the Gini coefficient index.[18] We find that income inequality is negatively and significantly associated with the probability of giving money and materials but has an insignificant effect on the probability of making time transfers.

Community resources affect household preferences, as well as the nature of services provided by the community organization, and therefore may influence the household's decision to contribute. We find that average community income is positively associated with monetary contributions and statistically significant, while it is insignificant for time transfers. In particular, a 10% increase in average community expenditure increases the likelihood of monetary contributions by about 1.3 percentage points. We should note that both household income and community level income as well as income inequality within the community appear much more important for the incidence of money contributions. Log population has a positive but insignificant impact on both types of transfers.

We also find that the density of community activities has a positive and statistically significant effect on time contributions, although it is not significant for monetary contributions. This result is not surprising since the presence of complementary inputs may be of greater relevance for time contributions.

Community random-effects. We now discuss results on monetary and time contributions based on the community random-effects specification.[19] The random-effects model allows us to deal with unobserved heterogeneity at the community level. In this specification, the signs and significance of ethnicity

variables remain comparable to our bivariate estimates. This specification serves as a robustness check and strengthens our confidence in the results presented above. The impact of government transfers remains negative and significant for time transfers, but becomes less statistically significant for monetary contributions (significant at the 15% level) with community random-effects.

6.1.2. Determinants of transfer amounts

In Table 2 (columns 3 and 4), we also present results based on a bivariate tobit model where dependent variables are the natural logarithm of the household's total monetary transfers (in rupiah) and total time contributions (in hours) to community organizations, respectively.[20] Our results on household and community variables appear comparable to earlier results shown in columns 1 and 2.

We discuss the coefficients on ethnicity and community specific variables in detail. The ethnic diversity index has a large negative and significant impact on both monetary and time transfers. As presented above, a household's non-majority status has a negative and significant effect on the level of time transfers, (while it is negative, but insignificant for money transfers). The share of beneficiaries from household's ethnic group is statistically insignificant for both types of transfers. Government per-capita transfers to the community has a negative and significant effect on both monetary and time contributions. We find that a 1 rupiah increase in per-capita transfers to community decreases per-capita private transfers by 0.49 rupiah.[21] The index of community activity has a positive and significant effect on time contributions while it is positive, but significant for monetary transfers. We find that income inequality has a negative and significant effect on monetary contributions, while its effect is insignificant for time transfers. Average community expenditure has a positive effect on monetary transfers, while it is shown to have a negative and significant effect on time transfers. Our results on the negative impact of community resources on the level of time transfers may indicate the presence of higher opportunity costs of time contributions within higher income communities.

6.2. Contributions to specific community organizations

In this section, we examine the probability that a household contributes to a specific community organization using a bivariate probit specification. Our goal here is to analyze the determinants of contributions to a specific organization given that this organization exists in the community.[22] Since we have multiple observations for each household, we construct the dependent variable such that it is equal to 1 if a household in a given community contributes to a specific type of organization, and 0 otherwise. This enables us to exploit the detailed information on contribution patterns available in the data. Household and community variables are the same measures used in the general framework, and all estimations include province dummies. In addition, we introduce controls for organization characteristics (by including a dummy variable for each organization type in our sample). There are ten types of community organizations in our sample.

Table 3. Determinants of monetary and time contributions to community organizations (IFLS2) bivariate probit specification: Organization-specific estimates. Did household contribute to a specific community organization?

Dependent variable	Monetary contributions (1) marginal effects	Time contributions (2)
Household variables		
Head's age	−0.0005 (0.001)	0.01 (0.001)
Head's age squared (X 100)	0.0001 (0.001)	−0.01 (0.001)
Sex (Male = 1)	0.02 (0.01)	0.10 (0.01)
Head's years of schooling	0.002 (0.0004)	0.003 (0.001)
Head's marital status (married = 1)	0.005 (0.01)	0.03 (0.01)
Muslim (= 1)	0.004 (0.01)	0.05 (0.01)
Household size	0.01 (0.001)	0.02 (0.001)
Number of children < 14years	−0.01 (0.00)	−0.02 (0.00)
Per capita HH exp in Rupiah (X 10^6)	0.03 (0.01)	0.02 (0.01)
Urban(= 1)	0.02 (0.004)	0.004 (0.007)
Received benefit from community organization?	0.08 (0.003)	0.19 (0.005)
Share of beneficiaries from ethnic group	−0.001 (0.002)	−0.01 (0.004)
Non-majority household (=1)	−0.002 (0.001)	0.0002 (0.001)
Community variables		
Log population	0.04 (0.00)	−0.01 (0.00)
Government spending (per capita)	−0.16 (0.03)	−0.05 (0.06)
Average expenditure (in Rupiah) (X 10^6)	0.04 (0.02)	−0.015 (0.028)
Gini coefficient	−0.02 (0.01)	−0.03 (0.01)
Index of community activity	−0.001 (0.01)	−0.01 (0.01)
Ethnic diversity index	−0.003 (0.005)	−0.06 (0.008)
Organization dummies	YES	YES
Number of observations	35949	
Log likelihood	−26513.73	
rho	0.54	

Standard errors are shown in parentheses.
*, **, *** Denote significance at 10, 5 and 1% respectively.
All regressions include province dummies. In addition, we restrict our sample to communities where population > 10.

Table 3 is based on a bivariate probit specification for monetary and time contributions. The results on household variables are very similar to our general regressions. For example, starting at the mean, a ten percent increase in the per capita household expenditure increases the probability of giving money (time) by about 0.8 (0.1) percentage points. We closely examine how ethnicity-and community-specific variables affect contributions.

According to our results, the ethnic diversity index remains negatively and significantly associated with monetary contributions. Ethnic diversity also has a negative and statistically significant effect on time contributions. Starting at the mean, a 10% increase in the ethnic diversity index decreases the probability of giving money (time) by about 0.6 (0.3) percentage points. However, for time contributions, the significance of this variable appears sensitive to the inclusion of other ethnicity variables in our organization-

specific estimates. For example, when share of beneficiaries from household's ethnic group (SHARE) is excluded from the regression, ethnic diversity is no longer significant for time. Similar to our earlier results from the general bivariate specification, non-majority status has a negative and significant effect on the incidence of time transfers, while its effect is insignificant for monetary transfers. SHARE is no longer significant for time contributions, and it remains insignificant for money transfers. We should note that SHARE was significant only at 10% for time in the general bivariate probit specification.

To summarize, ethnic diversity has a negative and significant effect on the incidence of monetary contributions, while non-majority status has a negative and significant effect on the incidence of time transfers. A change in a household's status (from non-majority to majority) increases the probability of giving time by about 6%. Both of these results appear robust across both general and organization-specific specifications.

The effect of government transfers on contributions deserves close attention. The effect of government transfers on money contributions remains negative and significant in the organization-specific regression. Starting at the mean, a ten percent increase in the government expenditures per capita decreases the probability of giving money by about 0.9 percentage points. However, this variable is no longer significant for the incidence of time transfers. We should note that government transfers had a relatively small effect on time transfers in the general bivariate probit specification. Our results on average village income and income inequality and the density of community activities remain similar to those from the general regressions.

Our results (not shown) remain robust to the inclusion of household random effects.[23] As noted above, ethnic diversity is found to have a negative and significant effect on the incidence of monetary transfers while household's non-majority status has a negative and significant effect for time transfers. We find evidence that government transfers may crowd out monetary transfers while they are insignificant for time transfers. However, when we adopt a community random effects specification, we note a reduction in levels of significance for community level variables including ethnic diversity index and government transfers. Non-majority status remains negative and significant for time transfers. We argue that community random effects are magnified due to the way our data are arranged in organization regressions, and as a result, the significance levels of community level variables are reduced.

In summary, results from our organization-specific analysis confirm theoretical predictions. Ethnic diversity appears to have a negative impact on both monetary and time contributions, although it may affect contributions through different channels. In particular, ethnic diversity at the community-level has a negative effect on the probability of monetary contributions, while households are less likely to contribute time if they belong to a non-majority group. These results imply that the higher transaction costs within an ethnically diverse community may be more important in lowering the likelihood and level of monetary transfers while diverse preferences might be more relevant for time transfers. Another potential explanation is that non-majority households derive a disutility from interacting with the members of the majority ethnic group as hypothesized by Alesina and LaFerrara (2000). We

Table 4. Understanding the prevalence of community orgnizations dependent variable: occur

Variable	(1) GLS	(2) IV	(3) Probit	
			Marginal coefficient effect	
Community variables Ethnic diversity index	−0.04 (0.02)	−0.12 (0.06)	−0.08	−0.30 (0.17)
Average expenditure in Rupiah (X 10^6)	0.09 (0.04)	0.03 (0.07)	0.16	0.58 (0.42)
Government spending (per capita)	−0.004 (0.002)	−0.04 (0.03)	−0.005	−0.02 (0.02)
Average years of schooling	0.001 (0.002)	0.005 (0.003)	−0.001	−0.002 (0.02)
Gini coefficient	−0.14 (0.09)	−0.002 (0.16)	0.43	1.67 (0.83)
Community random-effects	Yes	Yes	Yes	
Organization dummies	Yes	Yes	Yes	
Number of observations =	3050	3040	3050	
R-squared/Pseudo R-Squared	0.57	0.52		
Wald chi2-Statistic =			635.12	

The dependent variable (occur) is based on community means of households' reports of organizational existence (see Appendix A for a list of organizations). Marginal Effects are calculated at the mean Standard errors are shown in parentheses. All regressions include province dummies. We restrict our sample to IFLS communities where village population > 10 & denotes significance at the 11 % level

* Denotes significance at the 10 % level, ** at the 5 % level, and *** at the 1 % level.

Results also includes controls for log population and urbanization. Constant term is not shown. In the IV specification (column 2), we instrument for government spending. Estimates are provided at the community level. There are 314 communities in our sample.

do not find a robust effect of altruism towards one's own ethnic group on contributions.

6.3. Existence of community organizations

Table 4 presents results on the prevalence of community organizations at the community-level. Our theoretical framework suggests that ethnic diversity may also affect the existence of community organizations through high transaction costs and diverse preferences within a community. We construct a measure of prevalence of community organizations from households' reports on whether or not a specific organization exists in the community. Our regressions are estimated at the community-level.

In columns 1 and 2, the dependent variable is the mean household report on the existence of organizations at the community level. Column 3 shows results from a probit specification, with occurrence as a dichotomous variable which is equal to 1 if community organization exists and zero, otherwise. We exploit the fact that we have multiple observations on each community, and we adopt a community random effects specification. Regressions in this section are estimated at the community level.

From our results, ethnic diversity index does have a negative and statistically significant effect on the prevalence of organizations. This negative result persists across all specifications (columns 1–3). From column 3, a 10% increase in ethnic diversity decreases the probability of occurrence of

an organization by 0.2%. The robustness of this result may appear surprising, given that others (notably, Weisbrod 1988) have argued that ethnic diversity may exert a positive influence on the existence of community organizations. In Weisbrod's view, community organizations supply public goods in heterogenous communities as a response to market and state failure. However, the prevalence of community organizations may also depend on the emergence of organization leaders or "social entrepreneurs" (James 1987), who create community organizations to meet the diverse needs of ethnic, religious, and income groups in the community. We note that within more restrictive political environments, particularly with less democratic governance, the incentives for, and the scope of community-level activity, may be reduced.

Other community-specific variables appear to have a less robust effect on the prevalence of community organizations. Government involvement in the community (government transfers per capita) has a negative but statistically insignificant effect on the prevalence of a given organization. As government programs may not be randomly allocated across communities in Indonesia and central government spending may have redistributive objectives, we instrument for government transfers using two variables: the incidence of mass immunization in the community since 1980 (immunize = 1) and the village electricity index (which measures the years of electricity supply in the village). When we instrument for government transfers, the coefficient on government spending remains negative, although only statistically significant at the 11% level (column 2). Average community expenditure (per capita) and average years of education are positively associated with the prevalence of community organizations.

7. Conclusions

Beyond providing local public goods and services, community organizations may be linked to social capital formation and economic growth (Putnam 1993; Knack and Keefer 1997). Using data from Indonesia, we find that ethnic diversity has a negative effect on both monetary and time contributions as well as on the prevalence of community-based organizations. Our main findings are suggestive of mechanisms through which ethnic diversity can influence contributions. For monetary contributions, transaction costs emerge as an important explanation for the negative effect of ethnic diversity. However, preference heterogeneity, as well as transaction costs of organizing community activity, may explain the negative impact of ethnic diversity on time contributions.

The results from this study can inform public policy towards community organizations in developing countries. While decentralization and segregation along ethnic boundaries may reduce the costs of organizing community activity in the short run, such policies may prove costly in the long run if they lead to further ethnic polarization (Benabou 1996). Thus, government policies that provide incentives for cooperation across ethnic and cultural boundaries may prove beneficial over a long term horizon. One noteworthy success of the early political leadership in Indonesia was the development of a national language policy with the adoption of Bahasa Indonesia as the official language.[24]

Regarding the effect of central government transfers, we find support for a crowding-out model for monetary contributions, with less convincing evidence on time contributions. However, we should note that the crowding out effects of central government transfers on monetary contributions tend to be relatively small. Further research may be needed to investigate what role governments can play in supporting community institutions across various settings.

Appendix

Table A1. Contribution to community organizations by type

	Type of organization	N	% of HH that report occurrence	% of HH that contribute money or materials	Average transfer (money or materials) (in Rupiah)	% of HH that contribute time	Average time transfer (in hours)
A	Community meeting	7510	0.46	0.18	4530.15 (47517.36)	0.46	22.30 (107.49)
B	Co-operative	7510	0.12	0.03	1133.14 (20861.26)	0.06	2.88 (57.47)
C	Volunteer labor	7510	0.46	0.15	3040.59 (27591.72)	0.54	52.55 (217.96)
D	Neigborhood improvement	7510	0.25	0.16	5880.73 (33917.32)	0.27	26.38 (232.17)
E	Neigborhood security	7510	0.35	0.08	2019.77 (13687.59)	0.34	97.40 (405.88)
F	Drinking water	7510	0.04	0.02	1272.05 (14886.94)	0.03	46.27 (652.76)
G	Washing water	7510	0.04	0.01	565.82 (16617.64)	0.02	45.00 (707.94)
H	Garbage collection	7510	0.06	0.06	1545.14 (10631.35)	0.02	11.88 (287.88)
I	Women's groups	7510	0.07	0.07	991.56 (11423.09)	0.16	8.15 (66.61)
J	Community health posts	7510	0.10	0.05	351.30 (4818.09)	0.28	10.06 (55.34)

N = 7510 households.

Table A2. Benefits received from community organizations (by class of benefits received)

Class of benefit received	Mean
Did HH receive any class of benefits? (1 = Yes, 0 = No)	0.58
1. Received service from organization	0.13
2. Received materials	0.02
3. Received money	0.08
4. Received other	0.11
5. Received information	0.31
6. Received infrastructure	0.34

N = 7510.

Endnotes

[1] A growing number of studies examine the link between ethnic diversity and economic outcomes (Alesina et al. 1999; Alesina and LaFerrara 2001; Collier 2000; Easterly and Levine 1997; Miguel 2001).

[2] To our knowledge, this is the first study to examine crowding-out issues for transfers to community organizations in a developing country context using household-level data. Wong et al. (1998) use organization-level data from Singapore to study transfers to community organizations. The authors find some evidence that government transfers crowd out private contributions.

[3] The government has also been involved in relocating families through its Transmigration Program from the highly populated islands of Java, Bali, and Madura to less populated islands. Between 1969 to 1989, some 730,000 families were relocated under the Transmigration program.

[4] This hypothesis may be less appropriate for Indonesia, which had a centrally-administered government during our period of study, with very limited public involvement in central government spending decisions. Diverse preferences may lead to a wide range of opinions on what type of public goods to provide, and within democratic systems of government, the supply of public goods reflect the preferences of the median voter only Weisbrod (1988:27).

[5] We acknowledge the contributions of an anonymous referee in suggesting this variable.

[6] This result is unambiguous in the case when there is only one type of transfer. When the household considers both money and time transfers, we need a restriction on the cross-utility effects as specified in the discussion of diverse preferences.

[7] In our study, the term community refers to an IFLS enumeration area. An enumeration area refers a cluster of households located in an administrative area called desa (village) or keluruhan (township).

[8] Alesina and LaFarrera (2000) and LaFarrera (2001) examine participation in social and religious groups. Although these may be of considerable importance in our sample, the IFLS data do not provide information on religious and social contributions.

[9] It would also be interesting to study the effect of religious heterogeneity on contributions. However, a majority (about 88%) of the IFLS sample can be identified as Muslim.

[10] We check the reliability of our household-based measure of ethnic diversity against limited data on ethnic composition available in the Community survey. The community-based ethnicity variable is highly and statistically significantly correlated with our household-based measure (correlation coefficient = 0.67). This community-based measure of ethnicity relies on information obtained from village leaders on the population share of the three largest ethnic groups in the community.

[11] There are 16 community activities listed in the Community-Facility Survey. If an activity is conducted regularly it is weighted by 2, if it is conducted irregularly it is weighted by 1, and if it is never conducted it is weighted by 0. In addition to the eight organizations detailed in the household survey (organizations A through H in Table 2), eight additional community activities, namely youth groups, study groups, village library, public works, adult literacy program, waste water management system, underdeveloped village program, village decision making organization are used to construct this measure.

[12] Marginal effects are evaluated at the sample means for continuous variables, and reflect a change from 0 to 1 for discrete variables.

[13] For all variables, point elasticities evaluated at the means are available upon request.

[14] We also investigate an additional specification which includes ethnic squared as a regressor. Our ethnic diversity index remains negative and significant, however, ethnic square is positive and significant suggesting a non-linear relationship between ethnicity and contributions.

[15] As noted by an anonymous referee, cultural differences in patterns of giving are likely to be important. For example, the Javanese and Sundanese are significantly more likely to give than other ethnic groups. Both of the above ethnic groups had highly centralized pre-colonial systems of organizing community life that bore similarities to the gotong royong system of community organization in post-independence Indonesia.

[16] As discussed earlier, local government expenditure in Indonesia depends heavily on transfers from the center. There are two main types of central government transfers: (i) Block grants

(INPRES)-which fund specific development expenditures on roads, primary schools, public health centers and reforestation (ii) transfers for local government personnel expenses.

[17] The maximum level of central government spending in our sample is 19132 rupiah per capita, while the minimum level is 82 rupiah per capita.

[18] Our Gini coefficient index was constructed using expenditure data at the kecamatan (district) level.

[19] These results are not shown, but are available upon request from the authors. These estimations are carried out as univariate probit specifications. We should note that coefficients from the random effects specification are unbiased only if regressors are orthogonal to the error term, including the community effect.

[20] The dependent variables here are measured as the natural logarithm of (monetary transfers $+1$) and the natural logarithm of (time transfers $+1$) respectively.

[21] This result is calculated based a univariate Tobit model where (log) money transfers is the dependent variable. In this regression, the coefficient on the government transfers is found to be -0.12 and significant. We multiply this coefficient by average per capita money transfers, which gives us our crowding out estimate.

[22] Our data on organizational existence is based on the household survey. Thus, we assume that if at least one household head in a community is aware of an organization's existence, then this organization exists in this community during the survey period.

[23] Since we have multiple observations for each household, we are able to adopt a random household effect specification in our organization-specific regressions.

[24] In addition, the structure of community institutions may need to differ across regions in order to account for diverse preferences of members within heterogeneous communities. For example, power-sharing arrangements among ethnic groups may reduce ethnic-based polarization.

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