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**Groups, Networks, and Hierarchy in Household Private Transfers:
Evidence from Fiji**

by

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Abstract

Although economists have extensively studied private transfers exchanged among households within a network, those exchanged directly with groups to which the household belongs – such as ritual gifts, communal work, and church donations – have received very limited attention. Using original household survey data gathered in rural Fiji, this paper shows that extant studies on across-household private transfers are incomplete for two reasons. First, group-based transfers are much greater than network-based transfers because of significant contributions to groups for their provision of local public goods. Second, group-based transfers significantly influence network-based transfers through the social hierarchy: A comparison of various groups (e.g., kin and church groups) and social ranks (e.g., gender, disability, elite kin, and religious elite) indicates that network-based transfers adjust to hierarchy bias in group-based transfers among fixed members depending on the physical and social connections of groups and networks.

1. Introduction

Roles of communities, groups, and networks in development are a central theme that development economists often address (Barrett, 2005). Private transfers are one of the most direct forms of social interaction. Although economists have extensively studied private transfers exchanged among households within a network (see, for example, Cox and Fafchamps, 2008 for review), those exchanged directly with groups to which the household belongs – such as ritual gifts, communal work, and church donations – have received very limited attention. I argue that extant studies on across-household transfers are incomplete for two reasons. First, the latter group-based transfers can be much greater than the former network-based transfers, because significant contributions are made to groups for their provision of local public goods, such as social activities and village upkeep. Second, these two forms of transfers can be tightly linked with each other. In particular, group-based transfers may significantly influence network-based transfers through the social hierarchy: As members' social ranks (e.g., elite status) affect group-based transfers, individual households may adjust network-based transfers in a way to counteract this hierarchy bias. This is because although group membership is often exogenously determined by kinship, heredity, and eligibility, household transfer networks are endogenously formed by individual households.

This paper generates empirical evidence for these conjectures. In particular, the comparison of various groups and social ranks discussed shortly indicates that the adjustment to hierarchy depends on the physical and social connections of groups and networks. The paper echoes the work of Cox and Fafchamps (2008), who call for broadening the study of determinants of private transfers beyond income, which has been

a dominant focus of extant works that explore transfer motives and crowding-out; while they emphasize demographics, I focus on groups and hierarchy.

The empirical analysis exploits original household survey data I gathered in the following two major village subgroups in rural Fiji. First, in Fiji and other Pacific island states, kinship underlies gift exchange not only among households through networks, but also between each household and the *kin group* to which it belongs, for securing social status and showing commitment to the group (Malinowski, 1922; Mauss, 1967). Indeed, following Malinowski's (1922) seminal work on gifts and reciprocity in Melanesia, most related anthropological studies have been conducted in the Pacific region (Hann, 2006). Second, development agents are increasingly recognizing *community groups* – such as women's groups and school groups – as essential local partners for implementing community-based development projects (Heyer *et al.*, 2002; Mansuri and Rao, 2004; World Bank, 2002). Bernard *et al.* (2008) assess the existence of village organizations, their performance, and members' participation in benefits in Senegal and Burkina Faso; Okten and Osili (2004) analyze household contributions to community organizations in Indonesia with a focus on ethnic diversity within the organizations; and Imai and Eklund (2008) examine the roles of women's community-based organizations in child health in Papua New Guinea. Christianity also underlies Fijian society, and church donations are quite significant. Religious networks may be as important as kin networks in household private transfers.

Hierarchy in Fijian society is determined by various ranks. Turner (1992, p. 291) highlights the roles of age, kin elite, and gender:

Hierarchy is defined here as the ranking of the elements of a whole (society) in relation to the whole. In this sense, the elements that are ranked are social

categories or positions defined in terms of age, seniority of descent, and gender, and the whole in relation to which they are ranked is a social system grounded in ritual. Elder is superior to junior, chief to commoner, and male to female. But while age, rank, and gender differences entail relations of superiority/inferiority among persons, they also create interdependence. . . . These relations of inequality and interdependence (which do not preclude conflict) are expressed and reproduced in the practice of everyday life.

Community-group leaders who play major roles in development, social, and/or humanitarian activities are also likely to hold a high rank, as religious leaders do.

Disability may signify a low rank, as the disabled are often considered to be particularly disadvantaged in developing countries with limited public safety nets, though research on disability among the poor is scant (Yeo and Moore, 2003). A unique feature of the Fijian data is that because households in each village are stratified by their kin group and elite status, direct measures of elite status are available. In standard household surveys, in contrast, elite status is often unobservable to researchers, and even if it is observable, there are too few elites to make a statistical analysis possible.

Two other features of the Fijian data are to be noted. First, distinct from many extant studies, transfer measures capture not only cash and inkind (e.g., food, handicrafts), but also labor time. This is crucial for group-based transfers, which often contain significant labor-time contributions to groups (e.g. communal work). Second, the paper focuses on domestic private transfers. This is simply because, distinct from extant studies in the Pacific region (Bertram, 1986; World Bank, 2006), overseas remittances are almost nonexistent in my study area in Fiji's remote islands.

The remainder of the paper proceeds as follows. Section 2 offers a description of the data and groups. Section 3 compares group- and network-based transfers, showing that their main difference is contributions to groups for their provision of local public

goods. Section 4 explores the group-network connection in a descriptive manner. Section 5 discusses the econometric specification and hierarchy measures to test the hypothesized link of group- and network-based transfers. Estimation results are reported in Section 6. The last section concludes.

2. Data and groups

In 2005 I conducted surveys among native Fijian households in Cakaudrove Province (Fiji is divided almost evenly between native Fijians and Indo-Fijians). The province is mainly located on Vanua Levu Island and Taveuni Island, the second- and third-largest islands in the country, which significantly lag behind the largest island, Viti Levu, where the state capital, two international airports, and most tourism businesses are situated. The province has 134 villages in 16 districts. In each district, I purposefully chose 43 villages to cover distinct environmental, economic, and social conditions. While the data represent neither the province nor the nation, the villages in the sample well capture various types of villages in Fiji's underdeveloped islands. In each village, households were stratified by the smallest kin group unit (defined shortly), as well as by the combination of leadership status (defined in Section 5) and major asset holdings (e.g., shops), and households were randomly sampled in each stratum (50% on average). Overall, the survey covered 906 households.

Kin groups

Each native Fijian belongs to a lineage of the *vanua-yavusa-mataqali-tokatoka* hierarchy: Vanua consists of several yavusa; yavusa consists of several mataqali; and mataqali consists of several tokatoka (Ravuvu, 1983). While vanua ranges over several villages, yavusa is mostly formed within the village; in another words, village formation

is largely based on yavusa. The dominant symbol of Fijian culture is kava (a beverage infused from the root of a pepper plant, *Piper methysticum*), and kava rituals frequently involve exchanges of ceremonial goods, such as food, mats, and bark cloth (Turner, 1987). Many ritual activities, such as funerals and weddings, are organized by mataqali and yavusa; vanua occasionally hold large traditional meetings. Kin groups also underlie household income-generating activities: Land is communally owned by mataqali (about 83% of the country's total land is communal), and customary rights for coastal fishing are held by vanua or several yavusa. The sample covers 20 vanua, 53 yavusa, 146 mataqali, and 234 tokatoka; an average village in the sample consists of 1.2 yavusa, 3.4 mataqali, and 5.6 tokatoka; and on average, each yavusa, mataqali, and tokatoka consists of 40, 14, and 8 households, respectively (see Table 1).

Community groups

Church, women's, school, and youth groups are four major types of community groups, and their distributions and memberships are distinct from each other. A church group formed for each church, which often covers more than one village, is available in all villages – 3.3 church groups per village on average – and almost all households are members (church membership is largely based on heredity). Village church groups have strong ties with larger groups in the same sect. In contrast, if there are any non-religious community groups in a village at all, there is usually just one for each type. Membership in non-religious community groups is based on eligibility – gender, child schooling, and age –, and accordingly, fewer individuals belong to them than to a church. While membership is almost uniform among the eligible for school groups, such is not the case for women's and youth groups. The school group formed for each school can cover more

than one village, while women's and youth groups are village based. The data lack information about the number of school groups in the village and the group-level membership of community groups; in particular, there is no information to indicate the particular church group to which each individual belongs.

3. Differences between group- and network-based transfers

My first argument is that group-based transfers are greater than network-based transfers, mainly because of household contributions to groups for their provision of local public goods, such as social activities and village upkeep. Because the Fijian data do not allow me to directly tell which contributions are actually used for public goods provision, I offer indirect, descriptive evidence supporting this conjecture.

Group-based transfers

Respondents were asked about the transfers – in the form of cash, inkind, and labor time, separately – they contributed to and received directly from each kin and community group discussed in the last section, as well as the village, in the past year. These group-based transfer data are unbalanced in coverage between receipt and giving: While the transfers that the household offers to groups contain all the resources the household contributes, those it receives from the group capture only partial benefits, excluding those of local public goods that the group provides. Directly measuring such benefits is very difficult, because they often include unobservable social and cultural benefits and can be heterogeneous across households.

This imbalance in the data is reflected in aggregate transfer patterns: While almost all households make contributions to some groups, 42% of households receive transfers from at least one group; the mean amount of transfers in any form given to all groups

combined is more than six times those received from them (see panel A of Table 2). On the net, an average household makes cash-in-kind contributions to groups by F\$1,619 (=1,934–315), or 9% of its pre-transfer earned income (F\$1 = US\$.60).¹ An average household also contributes 47 man-days of labor time, which is equivalent to 5% of its labor-time endowment (the mean number of working adults is 3.1 and annual labor-time endowment per working adult is assumed to be 300 days), or 7% of its pre-transfer income (labor time is monetized based on men’s daily wage in each village, the mean of which is F\$16).

Since transfers made for within-group and across-group reallocations of resources *in* the village are roughly balanced, a major part of household contributions to groups should be used for their provision of local public goods.² This is supported by two pieces of evidence. First, the importance of labor-time transfers relative to cash-in-kind is much greater in giving than in receipt. Second, the most common reason reported by respondents (in both receipt and giving) is ritual – a category containing significant public goods components. Table 3 shows proportions of reasons reported by respondents for each transfer (proportions are calculated using transfer amounts as weights, and if there is more than one reason for the same transfer, equal weights are assigned among them).

Disaggregate transfer patterns are also consistent with the significance of household contributions for public goods. While transfers received from kin groups and contributed to community groups are the most common and largest, the importance of labor-time transfers relative to cash-in-kind is the greatest for the village (over 60%) (results not shown). When only members of each community group are considered,

almost all make contributions, and church donations and school contributions are large. Correspondingly, general contributions – another category containing a significant public goods components – to community groups as well as the village are as common as ritual; in contrast, ritual dominates kin group transfers (almost two thirds in both receipt and giving) (results not shown).³ Members receive almost no transfers from non-religious community groups, which presumably concentrate on the provision of public goods.

Network-based transfers

Respondents were also asked about each major transfer received from and given to other households in the past year.⁴ These standard across-household transfer data are balanced in coverage between receipt and giving. While transfers received from other households are about twice as much as those received from groups, those given to other households are only about one fifth of those contributed to groups. The following patterns in contrast to group-based transfers are consistent with my conjecture that public-goods provision can be mainly distinguished between group- and network-based transfers. Participation in cash-in-kind transfers – both receipt and giving – are almost uniform; the mean amount of cash-in-kind transfers is about four times that of monetized labor-time transfers; and an average household is a net recipient of cash-in-kind transfers, but not labor-time transfers (panel B of Table 2). The most common reason is consumption/expenditure, a category that captures public goods components less than ritual and general contributions (Table 3).

4. Connection between groups and networks

My second argument is that group- and network-based transfers are tightly linked with each other. This section offers descriptive evidence for the connection between

groups and networks. Respondents were asked about the characteristics of households with which transfers were made. An average household exchanged transfers with 3.6 households in its network, approximately 80%, 70%, and 80% of whom are in the same village, the same tokatoka (closest kin), and the same church group, respectively. It is thus clear that physical and social proximities are major determinants of network formation (as found by Fafchamps and Gubert, 2007 in the Philippines). An important new finding is that social distance is determined not only by kinship, but also by religion.

Kin and religious connections are distinct from each other. On the one hand, with the hierarchical structure of kin groups in the village, how kinship matters in group- and network-based transfers depends on the closeness of kin relationships: The tokatoka network is more important than the tokatoka group, and the comparison is the opposite for mataqali, yavusa, and vanua. In particular, transfers received from tokatoka are almost negligible, and household contributions to tokatoka are half of transfers given to other households in the same tokatoka; at the same time, transfers received from other households in the same tokatoka are over two times those from all kin groups (Table 2). It appears that the difference between the tokatoka group and the tokatoka network is blurred, as one third of households in the same tokatoka in the village are also part of the transfer network.⁵ In contrast, households belonging to the same kin group higher than tokatoka are relatively uncommon in the network, and transfers exchanged directly with such kin groups are large (transfers contributed to all kin groups are twice as much as those given to other households in the same tokatoka).

On the other hand, there is no hierarchy among church groups in the village, and both church groups and church networks are important for giving and receipt,

respectively: Household contributions to its church group are 1.5 times as much as transfers given to other households in the same church group; transfers received from other households in the same church group are 10 times those received directly from the church group.

In- and out-of-village networks

While group-based transfers are mostly made within the village, transfers exchanged with households in other villages or in another city, but *not* in another country, are more significant than suggested from relatively uncommon out-of-village networks. First of all, while within-village transfers are much more common and larger than across-village transfers, transfers (mostly cash-in-kind) received from households outside the village are twice as common and four times larger than those given (they are actually similar to cash-in-kind transfers received from all groups in the village); in contrast, within-village transfers are balanced between receipt and giving in both participation and amount (Table 2). This means that the net transfers received from other households at the aggregate level found above mostly come from out-of-village networks. An average household received 38% of transfers from 20% of households in its out-of-village network, i.e., the mean net across-village transfer received per partner household is about 2.5 times that of the within-village counterpart $((38\%/20\%)/(62\%/80\%))$. There is no such difference in transfer amount per partner household between transfers made within and outside the same tokatoka or church group.

Out-of-village networks are mainly formed by close kin and religious relationships. Consistent with the comparison of within- and across-village transfers, an average household is a net recipient in its tokatoka network as well as in its out-of-kin

network (consisting of households belonging to other vanua outside the village); in contrast, transfers in its mataqali/yavusa/vanua network are balanced between receipt and giving. An average household is a net recipient both in and out of the church network.

5. Hierarchy and transfer linkage - econometric specification

I argue that network-based transfers counteract the hierarchy bias in group-based transfers. The last section showed that these two are linked through the physical and social connections of groups and networks and that transfers received through out-of-village networks are also considerable. I thus conjecture the following. First, the adjustment in network-based transfers to the hierarchy bias in group-based transfers is stronger outside the village than in the village, because out-of-village networks are less tightly connected with in-village groups than in-village networks are. Second, the adjustment to social ranks that are not formed by groups is stronger than those formed by kin and church groups, because groups and networks are socially connected by kinship and religion.

Identifying how group-based transfers biased by social ranks alter network-based transfers is very difficult, because these two are simultaneously determined. Instead I test the following hypotheses consistent with my conjectures.

Hypothesis 1: Network- and group-based transfers are affected by social ranks in opposite ways, and this is more strongly so in out-of-village networks than in-village networks.

Hypothesis 2: Network-based transfers are more strongly affected by social ranks that are not formed by groups than those formed by groups.

These hypotheses can be straightforwardly tested by estimating the effects of various social ranks on network- and group-based transfers in a comparable manner. Though adjustments in network-based transfers can occur in either network formation or transfer exchange in the network, or both, distinguishing between these two is beyond the scope of this paper. I first discuss the econometric specification and then detail social ranks.

Econometric specification

I employ the following standard transfer equation:

$$y_i = \alpha + \beta X_i + \gamma Z_i + V + e_i, \quad (1)$$

where y_i is household i 's net transfers received from other households, gross transfers received from groups, or gross transfers given to groups; X_i is household social rank, as defined below; Z_i is other household characteristics, such as shock, demographic factors, asset holdings, and public transfers; V is village dummies, which control for all village factors, such as location, village size, and inequality; and e_i is an error term.

Two clarifications are needed. First, earned income is not controlled for in equation (1). For net transfers received from other households, this is the only difference from many extant works in the literature. My goal is to identify the impact of social ranks, not that of earned income. To the extent that permanent income that can be correlated with social ranks is controlled for by demographic factors and asset holdings, omitted earned income does not cause bias. In contrast, earned income is endogenous as a determinant of household private transfers, because, in anticipation of private transfers, it may adjust earning efforts (i.e., decisions of earning and transfers are made simultaneously), and any unobservable factors that are correlated with earned income, such as skills, may also influence its transfer decisions. Controlling for income

endogeneity is infeasible with these data, which lack valid instrumental variables (cf. Jensen, 2004; Juarez, 2009; Kazianga, 2006).

Second, the same transfer equation (1) is used for group-based transfers. My goal is not to dissect group mechanisms determining transfers, but to show how household social ranks alter transfer outcomes. For estimations comparable with network-based transfers, equation (1) can be used for group-based transfers with the following caveats. Distinct from across-household transfers, transfers received from and given to groups need to be separately estimated, because their decisions are made by different agents and what they cover is unbalanced in the data. It is important to control for group factors, such as group size and inequality, because they can be correlated with social ranks formed in the group. When aggregate transfers made with multiple groups in the village are considered, however, it is not straightforward to construct aggregate group-level measures, though village dummies still control for the *combination* of group factors common in the village.

When participation in transfers is almost uniform, I employ Ordinary Least-Squares (OLS) to estimate equation (1); otherwise, I first estimate the determinants of participation using probit for the entire sample and then those of the amount *among participants* using OLS. This is a two-part, or hurdle, model commonly used in previous works on private and public transfers (e.g., Dercon and Krishnan, 2005; Jayne et al., 2002); a tobit model with a restrictive assumption that coefficients are the same between the participation and amount equations yields qualitatively similar results. An alternative sample selection model is infeasible with these data, which lack the identifying instruments required to credibly estimate the selection equation.

Hierarchy measures

I compare the following eight social ranks. Age, gender, and disability are ranks not formed by groups. They are measured by the age and gender of household head and the disability status of any household member (in the sample, the mean age is 51 years, 9% of households are headed by females, and 21% of households have at least one disabled member, according to respondents' subjective assessments).

Group-based ranks are categorized into two: kin and non-kin elite status. In Fiji, traditional permanent leadership positions determine individual and kin group status. Highly ranked vanua chiefs and yavusa/mataqali chiefs assume traditional duties across villages and within the village, respectively (there is no takatoka chief). Yavusa and mataqali chiefs, some of whom are also a vanua chief, are available only in highly ranked yavusa and mataqali (*chief's kin*) (27% of households belong to chief's mataqali, see Table 1). *Kin leaders*, including chiefs, play a major role in the kin group's decision-making and negotiations among groups in the village (3%, 11%, and 18% of households have yavusa, mataqali, and tokatoka leaders, respectively).⁶ Village chiefs are shared by some kin leaders and are not necessarily yavusa/mataqali chiefs. As such, kin elite status is measured by two dummies: chief's kin defined by mataqali and kin leaders of any group. Using chief's kin defined by tokatoka yields very similar results (recall that yavusa is a group very close to the village).

Another important village position is the gatekeeper (*turaga ni koro*), who handles most matters in connection with the local government (receiving information and materials from the government and non-governmental organizations, distributing them to villagers, and coordinating village meetings). Gatekeepers and community group leaders

are neither permanent nor directly related to kinship. Approximately 3% of households have village leaders (village chiefs and gatekeepers combined), church leaders, women's leaders, and youth leaders, respectively (information about school leaders is lacking) (Table 1). Non-kin elite status is measured by three dummies: church leader, women's leader, and other non-kin leader. The last combines gatekeeper and youth leader (capturing these two separately is infeasible, as there are a limited number of them).

A comparison of age, gender, and disability reveals which ranks matter most, and a similar comparison can be made among different group-based elite ranks. I also analyze kin groups, village, and community groups separately, thus capturing potential across-group linkage through the social hierarchy – elite status formed by one group may also affect other groups. These analyses can lead to important policy implications by showing who is most disadvantaged and who is most influential.

My focus is on comparing hierarchy biases, not explaining each one. The theoretical prediction of the impact of each rank is ambiguous. Even if households with a low status (e.g., female head) are shown to receive greater private transfers, which motive operates it is unknown: It may be altruism helping the disadvantaged or a result of exchanges with more “services” offered by them (Cox, 1987). Similarly, households with a high status (e.g., church leader) may appear to be favored because of the exchange motive, cultural norms that prioritize them, or a result of misappropriation; households with another high status (e.g., kin leader) may instead appear to be disfavored as a result of the exchange motive or reputation building.

6. Hierarchy and transfer linkage – estimation results

Estimation results of the eight social rank variables are reported in Table 4 – estimated marginal effects at means for the probit in panel A and estimated coefficients for the OLS in panel B.⁷ Participation is almost uniform for gross transfers given to all groups and community groups and net transfers received from all other households and those in the same village (the corresponding columns in panel A are thus blank); participation in other group-based transfers is not uniform (Table 2). The dummy for women’s leader is excluded in the amount equations for transfers received from groups, because of the limited number of women’s leaders among recipients (when women’s leaders are combined with other non-kin leaders, almost the same results are obtained). These are results for cash-in-kind and monetized labor-time transfers combined; separate results for each are also discussed when they exhibit important distinct patterns. I discuss results for the group-network linkage hypothesized in the last section and the comparison of age, gender, and disability first, and then those of the across-group linkage.

Group-network linkage

Age, gender, and disability strongly affect group-based transfers. Households with an old head receive a larger amount from and contribute a smaller amount to groups, especially kin groups; female-headed households are more likely to be recipients of transfers from all three groups, are less likely to contribute to kin groups, and contribute a smaller amount to the village; and in contrast, households with a disabled member are less likely to participate in transfers with kin groups and the village (both receipt and giving), and they receive a smaller amount from the village. Hence, kin groups and the village treat females and the disabled in opposite ways in their reallocation of resources within the group. The disabled are strongly disfavored. While females are favored in all

groups in the village, the elderly are favored in kin groups only weakly (the marginal effect of age is F\$6.6 per year). Corresponding to these hierarchy biases, households with an old head and a disabled member rely more on their out-of-village networks. Observe that while households with an old head, a female head, and a disabled member receive greater net transfers from other households (column 9), when only within-village transfers are considered (column 10), the estimated coefficient of age becomes very small and loses statistical significance, that of gender does not change, and that of disability halves. That is, network-based transfers respond to age, gender, and disability outside the village, within the village, and both, respectively. These findings are consistent with hypothesis 1.

While kin leaders contribute *more* to kin groups (but are not large recipients) and church leaders are more likely to be recipients of transfers and receive a greater amount from community groups (but are not large donors), neither of them affects network-based transfers. Combined with the findings on age, gender, and disability, these results strongly support hypothesis 2. Qualitatively the same results about church leaders are obtained from estimating equation (1) for church groups separately: Compared to non-leaders, church leaders are 55% more likely to receive transfers and receive a greater amount by about F\$260 – over six times the mean – from the church group (results not shown); with a lack of group-level membership information, however, no group factors are controlled for in this disaggregated analysis. Consistent with hypothesis 2, other non-kin leaders that are not strongly associated with networks do not affect any transfers.

A puzzling result of women's leaders is that while they do not influence community group transfers, they do receive smaller transfers (cash-in-kind) from other

households in the same village. The former result holds when women's groups are examined separately *among group members* (results not shown). These results require caution. They might be biased if women's leadership is correlated with unobservable skills and entrepreneurship, in particular, for handicraft making for both gifts and selling (another consistent result is obtained below). The nonsignificant result of group-based transfers may be the result of selection bias caused by endogenous participation in women's groups (participation is not uniform among the eligible as discussed above, and a sample selection model is infeasible for the same reason given above). Earlier findings on religious elite are unlikely to be contaminated by the potential endogeneity of women's leadership though, because dropping the latter variable hardly alters the results of the remaining variables.⁸

Across-group linkage

Elite kin and religious elite are the most influential across groups as follows. First, while kin group status (chief's kin) does not affect kin group transfers, households in chief's kin, but not kin leaders, are less likely to contribute (especially labor time) to the village. This may be because communal labor in the village is arranged mainly among kin groups. Next, while households of chief's kin receive a large amount from church groups, church leaders receive a smaller amount (cash-in-kind) from and contribute a larger amount to kin groups; in contrast, church leaders are more likely to receive transfers from the village. These patterns may be because church membership relatively matches kinship in the village (proving this is infeasible with a lack of group-level membership data). Lastly, women's leaders contribute more labor time to the village.

This may be because women's group members – both leaders and non-leaders – play a significant role in village activities (e.g., handicrafts, festive meals).

7. Conclusion

Using original household survey data gathered in rural Fiji, this paper provided evidence that (1) group-based transfers – both cash-in-kind and labor time – are much greater than network-based transfers, mainly because of significant contributions to groups for their provision of local public goods, and (2) group-based transfers influence network-based transfers depending on the physical and social connections of groups and networks. In particular, network-based transfers, especially those outside the village, counteract the hierarchy bias in group-based transfers caused by social ranks not formed by groups – age, gender, and disability –, but not kin and religious-elite status, because the main networks are kin and religious ones. In the village, the disabled are the most disadvantaged; elite kin and religious elite are the most influential.

These findings lead to the following research and policy implications. First, extant studies focusing on across-household transfers are incomplete. Are Pacific islands – the main field in which anthropologists study gifts and reciprocity – exceptional in the significance they place on groups? More research on group-based transfers in other locales is needed. Second, in lineage-based societies in the Pacific, social hierarchy strongly shapes people's interactions and is likely to affect community-based development, with existing and newly created village organizations serving as local partners. Platteau and Abraham (2002) argue that community-based programs in Sub-Saharan Africa are captured by local elites, because cultural norms restrict non-elites' access to information and emphasize consensual decision-making; Bardhan and

Mookherjee (2000) offer a theory of elite capture. Policymakers need to pay attention to social ranks locally formed not only by kinship, but also by religion. Third, as the private redistributive mechanism for the disabled is very weak, strong public support for and more research on disability among the poor are greatly needed.

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Notes

¹ The mean earned income among sample households is F\$10,374, or F\$1,897 per capita.

Almost all households employ traditional farming practices, using no mechanized equipment or animal traction and limited purchased inputs to produce taro, cassava, coconut, and kava plants. Most households engage in subsistence fishing, using lines and

hooks, simple spear guns, or rudimentary nets, and more commercially oriented fishermen use boats with engines, along with more valuable nets. Farming and fishing, respectively, count for 62% and 12% of household earned income. One third of households receive public transfers – mostly pensions – and the mean amount is only 2.5% of earned income.

² Two exceptions are noted. First, contributions from members are not the only disposable resources for groups: Some kin groups earn incomes through land lease, logging concessions, and fishing licensing, and some non-kin groups (especially village) receive public transfers. Second, within-village reallocation and local public-goods provision are not the only ways for groups to use their resources: Kin and church groups with a hierarchical connection with larger groups outside the village make contributions to them (on the net). In contrast, across-group transfers in the village (see note 3 below) are balanced.

³ Transfers received and given are balanced in yavusa; in contrast, transfers given to mataqali and tokatoka are 8-9 times the amount of transfers received from them. This indicates significant across-group transfers in the village along the kin hierarchy: Yavusa receives transfers from its subgroups.

⁴ The survey also asked about informal loans. Informal loans are much smaller than gifts, and when informal loans are added to private transfers, results are almost the same as what are presented here.

⁵ The analysis focuses on the kin groups to which households currently belong. Marriage across different kin groups is common. If the kin groups to which individuals used to

belong prior to marriage are considered, transfer networks further concentrate on tokatoka.

⁶ The sample contains a very small number of vanua chiefs in an incomplete manner, because many vanua chiefs live in cities. All vanua chiefs in the sample share yavusa chiefs.

⁷ Other household characteristics controlled for that are not shown include: sickness of any household member (capturing transitory income), household size of three age groups (younger than 15, between 15 and 65, and older than 65), secondary education of adult members, land holdings, and public transfers received (controlling for permanent income). Although demographics strongly affect household private transfers – households with more working adults receive smaller transfers from other households and contribute more labor time to the village and community groups, group- and network-based transfers are neutral to transitory and permanent incomes (as an exception, households with educated adults receive smaller amounts from other households in the same village). These weak results buttress the central roles played by social ranks in Fijians' private transfers.

⁸ Omitted group factors are unlikely to be a major source of potential bias, because running the same regression for women's groups in selected villages where there is only one group yields very similar results. Note that in this subsample analysis, village dummies fully control for group factors. This approach is infeasible for church groups, because most villages contain more than one such group.

Table 1. Group characteristics.

	Population in sample villages			Proportion in sample households (n=900)		
	Total no. groups	Village mean of no. groups per village	Group mean of no. members per group	Member-ship	Leaders	Group with kin chief
Vanua	20	1.0 (0.2)	96 (55)	100%	-	-
Yavusa	53	1.2 (0.6)	14 (11)	100%	3.2%	56%
Mataqali	146	3.4 (2.0)	14 (11)	100%	11%	27%
Tokatoka	234	5.6 (3.2)	8 (7)	100%	18%	18%
Village	43	1.0 (0.0)	45 (21)	100%	2.8%	-
Church group	142	3.3 (2.2)	-	98%	3.1%	-
Women's group	47	1.1 (0.6)	-	52%	2.8%	-
School group	-	-	-	60%	-	-
Youth group	44	1.0 (0.5)	-	15%	2.6%	-

Note: Standard deviations are in parentheses.

Table 2. Participation in and amounts of household private transfers.

	Transfers received		Transfers given	
	Participation	Mean amounts (F\$)	Participation	Mean amounts (F\$)
A. Group-based transfers				
Total	42%	315 (644)	99%	1934 (2413)
Cash-in-kind	42%	257 (591)	99%	1221 (1634)
Labor-time (man-day)	25%	3.9 (12)	79%	51 (75)
Group type:				
Kin groups	35%	188 (433)	86%	604 (990)
Village	22%	67 (191)	88%	384 (483)
Community groups	18%	61 (238)	97%	959 (1512)
Kin groups:				
Vanua	16%	34 (120)	43%	113 (272)
Yavusa	34%	109 (287)	40%	111 (254)
Mataqali	11%	25 (105)	74%	232 (377)
Tokatoka	9%	19 (93)	50%	153 (299)
Community groups among group members: ¹				
Church	16%	41 (136)	97%	480 (788)
Women	11%	22 (81)	94%	306 (407)
School	2%	4 (43)	97%	466 (898)
Youth	1%	3 (26)	87%	298 (389)
B. Network-based transfers				
Total	94%	606 (686)	88%	420 (491)
Cash-in-kind	94%	481 (570)	89%	303 (354)
Labor-time (man-day)	32%	8.7 (19)	33%	8.2 (18)
Location:				
Same village	89%	375 (426)	86%	363 (432)
Other village or city	37%	231 (509)	17%	56 (192)
Kin group:				
Same tokatoka	82%	417 (570)	77%	303 (409)
Other tokatoka and same mataqali	14%	33 (121)	14%	30 (104)
Other mataqali and same yavusa	29%	68 (167)	28%	64 (176)
Other yavusa and same vanua	7%	17 (98)	7%	12 (76)
Other vanua	14%	73 (250)	6%	17 (104)
Community group:				
Same church group	79%	413 (531)	74%	317 (412)
Not same church group	29%	186 (521)	23%	102 (328)

¹ Proportions of members are shown in Table 1.

Note: Standard deviations are in parentheses. Number of observations vary.

Table 3. Reasons for household private transfers.

(n=887)	Group-based transfers		Network-based transfers	
	Received	Given	Received	Given
Consumption & expenditure	19%	16%	50%	52%
Ritual	57%	40%	22%	18%
Medical expense	4%	1%	4%	4%
Production & investment	1%	5%	4%	3%
General	17%	22%	16%	19%
Other	2%	7%	3%	4%

Note: These are proportions of reasons weighted by transfer amounts. If there is more than one reason for the same transfer, equal weights are assigned among them.

Table 4. Effects of social ranks on household private transfers.

	Gross transfers received from groups				Gross transfers given to groups				Net transfers received from households	
	All	Kin	Village	Com- munity	All	Kin	Village	Com- munity	All	Within- village
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A. Probit for participation - marginal effects at means.										
Head age	0.002 (0.002)	0.002 (0.002)	0.003 * (0.002)	0.001 (0.001)		0.001 (0.001)	0.000 (0.001)			
Female head	0.220 *** (0.074)	0.148 * (0.082)	0.122 * (0.077)	0.156 *** (0.067)		-0.092 * (0.060)	-0.066 (0.056)			
Disability	-0.051 (0.058)	-0.135 ** (0.058)	-0.083 * (0.044)	0.028 (0.042)		-0.109 ** (0.052)	-0.087 ** (0.048)			
Chief's kin	0.020 (0.055)	0.018 (0.054)	0.006 (0.044)	0.012 (0.040)		-0.033 (0.051)	-0.092 ** (0.049)			
Kin leader	-0.016 (0.057)	-0.007 (0.060)	-0.047 (0.042)	-0.004 (0.037)		-0.002 (0.039)	-0.005 (0.036)			
Church leader	0.273 ** (0.112)	0.089 (0.127)	0.345 *** (0.120)	0.479 *** (0.113)		-0.056 (0.097)	0.031 (0.061)			
Women's leader	-0.172 (0.095)	-0.090 (0.105)	-0.138 (0.056)	-0.041 (0.065)		0.076 (0.055)	0.036 (0.071)			
Other non-kin leader	-0.087 (0.089)	-0.092 (0.092)	-0.034 (0.070)	-0.063 (0.048)		-0.017 (0.070)	0.012 (0.058)			
Log likelihood	-420.1	-351.6	-315.1	-313.2		-260.6	-258.5			
Chi sq. (p value)	0.000	0.000	0.000	0.000		0.000	0.001			
Pseudo R sq.	0.236	0.263	0.278	0.230		0.195	0.135			
No. obs.	809	714	755	823		684	707			
Panel B. OLS for amounts.										
Head age	7.2 * (3.7)	6.6 ** (2.9)	3.5 (2.6)	1.4 (3.0)	-11.7 (7.6)	-7.3 * (4.3)	-1.7 (2.4)	-6.4 (4.7)	3.9 ** (1.9)	1.0 (0.9)
Female head	-145.5 (161.2)	-164.0 (110.9)	62.8 (81.8)	-199.0 (181.4)	-138.5 (223.5)	-121.4 (151.1)	-80.7 * (46.3)	-91.6 (146.8)	134.8 * (74.3)	132.6 *** (49.0)
Disability	0.9 (224.4)	-97.3 (124.9)	-168.7 ** (79.2)	382.1 (302.4)	120.3 (219.0)	123.3 (142.2)	12.5 (48.8)	16.0 (125.8)	134.4 ** (63.9)	58.7 ** (27.2)
Chief's kin	139.4 (133.2)	56.8 (94.0)	11.6 (64.0)	277.3 (185.0)	33.5 (135.8)	112.9 (87.3)	-40.6 (42.1)	20.4 (83.0)	-43.5 (45.5)	-3.4 (28.3)
Kin leader	6.3 (151.8)	-69.7 (97.3)	88.2 (63.2)	34.5 (128.7)	100.5 (238.9)	287.0 * (157.5)	20.6 (53.9)	-105.2 (121.2)	-19.1 (57.1)	4.0 (24.5)
Church leader	331.0 (251.5)	-322.8 *** (119.4)	117.3 (93.3)	415.9 *** (141.9)	36.2 (375.3)	286.6 * (163.0)	-89.6 (69.4)	-11.0 (256.2)	102.3 (147.6)	-48.3 (45.2)
Women's leader					234.0 (537.8)	-12.8 (277.9)	406.6 *** (131.1)	143.6 (347.2)	-156.8 * (89.9)	-209.4 *** (74.6)
Other non-kin leader	13.3 (157.6)	-41.0 (112.3)	44.8 (71.4)	-43.1 (154.9)	-98.3 (287.6)	-95.4 (112.3)	29.4 (87.4)	-106.0 (190.3)	-86.4 (73.4)	-37.6 (42.0)
F (p value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
R squared	0.207	0.263	0.324	0.335	0.220	0.319	0.172	0.225	0.173	0.157
No. obs.	332	274	195	150	867	560	601	883	880	895

Note: *10% significance, **5% significance, ***1% significance. Marginal effects at means in probit estimates with standard errors in parentheses are shown in panel A. OLS estimates with robust standard errors in parentheses are shown in panel B: columns (1)-(4), (6), and (7) are for households conditional on participation, and columns (5), (8)-(10) are for the whole sample. Other controls which are not shown here are other household characteristics discussed in the text, village dummies, and constant.