Give and Take or Give and Give: Charitable Giving in Migrant Households

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Abstract

We investigate how households from migrant communities in Australia deal with conflicting claims on their resources for charitable giving in various forms, using household survey data. We examine financial donations, volunteering and remittances among the competing claims on migrants' resources and the effect of secular consumption on giving. We control for the wide range of religious denominations and the metropolitan and regional locations represented in our sample. We find increases in income lead to more financial donations and remittances. Contemporaneous increases in secular spending appear to be associated with reductions in giving except in the case of remittances. It is suggested that the investment and altruism motives associated with remittances could make it rather more resilient to competing pressures. Overseas donations are more susceptible to secular expenditure than donations in the host country; the latter may be more susceptible to community pressures. Indeed, we find evidence of members of home country community groups in the host country giving more to all claimants. These households may face particular conflicts in meeting all claims on their resources as prior evidence has suggested. Time donations to social organizations are particularly susceptible to discretionary spending, which could impact on integration into the wider community.

Key words: migrants, charitable giving, volunteering, remittances, religion, sharing norms

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1. Introduction

There is a substantial literature on the determinants of charitable giving in the context of developed countries.[1] While there has also been a burgeoning economics literature specifically on migrants' remittances, very few studies have investigated these in conjunction with other forms of charitable giving and secular expenditure among migrant households living in rich countries. This paper focuses on three sources of competing claims on household resources, which characterise the situation of many migrant households from low-income countries living in richer destination countries.

First, there are remittances and charitable giving to home country communities. In poor countries it is not uncommon for those with money to find they are under pressure to share their earnings and assets with extended family, friends and community organizations. These are usually referred to as 'sharing norm pressures' (Platteau, 2000). The same is often true with respect to migrants from poor countries living in rich countries. Apart from the usual obligations to support their immediate family members in the host country, as well as the extended family in their home country, migrants often extend support to their respective community organizations, including religious bodies, in both their host and home country organizations. The formation of Home Town Associations (HTAs) in the US among migrant communities from many countries, particularly Mexico, has brought increasing pressure to bear on migrants to make donations to fund various community events, projects and activities in both their US host cities and home towns.[2]

Second, there is the giving of time as evidenced by volunteering and participation in activities within social organizations in the host community. In the US context Brown and Lankford (1992) found strong evidence of a complementary relationship between cash donations and volunteering. In recent years , the growing pressures of work in developed economies are increasingly seen as an impediment to attaining a work-life balance with some evidence that

[1] Typically this research examines issues such as: the presence of crowding-out of one source of charitable support by another (Bergstrom, *et al*. 1986; Ribar and Ottoni-Wilhelm, 2002; substitutability (Duncan, 1999) vs. complementarity (Brown and Lankford, 1992; Menchik and Weisbrod 1987) between different forms of giving; and, the effects on charitable giving behavior of recipients of others' generosity (Moody, 2008; Brooks, 2003; Kalenkoski, 2014) and of parents'giving on adult children's giving (Ottoni-Wilhelm, *et al*. 2008).

[2] Newland (2010) provides an interesting account of fundraising among a variety of US-based diaspora, including Latin Americans, Armenians and Africans, for a variety of charitable purposes both in the US and migrants' home country communities.

this leads to a reduction in social activities including volunteering (Bloom and Van Reenen, 2006; Leeves, 2014). If migrant households in rich countries encounter the same sharing norm pressures normally prevalent in low-income countries, there is an added dimension that could work to the detriment of their giving of time. In this case we would not expect to find a complementary relationship.

Third, migrant giving in all forms is subject to competing pressure from discretionary secular expenditure. The relationship between secular expenditure and giving has been investigated in developed countries (Gruber and Hungerman, 2008). However, to our knowledge, this relationship has not been examined in the context of migrant households in rich countries who face exposure to higher aspirational standards of living and more opportunities to spend than they would in their home countries. This could make remittances and/or charitable giving in all forms among migrants particularly sensitive to secular expenditure. For example, the time spent to acquire and consume secular goods and meet the multiple claims on the household could impact adversely on time accumulating local social capital. Brown and Ferris (2007), found evidence in the US of a strong positive correlation between an individual's social capital and all forms of giving. This may not be the case for migrants given the ore complex nature of competing claims.

While charitable giving might well bring welfare gains to those who rely on the churches and charities to support their livelihoods, this could come at the expense of welfare losses to the migrants' more immediate dependents in the home and host countries. Although the positive impacts of remittances on poverty alleviation in the migrants' home countries have been an important focus of recent economic analysis of migration, the presence of competing claims on migrant households and their possible implications for remittances have been largely ignored. An understanding of these aspects of giving in the case of migrant households can help answer some pertinent questions. For example, is it the case that pressures to donate to the home country community are more, or less, resistant to secular pressures? If they are more resistant then migrant households' resource allocation to the home country community may be the source of additional financial pressures for households in the host country.

We also expect that there is heterogeneity among migrant households, within otherwise culturally very similar communities, with respect to particular circumstances especially religious affiliation. Innaccone (1998) identified that norms in relation to charitable giving

manifest themselves differently among the various religious denominations. Our sample constitutes Pacific island migrant households in Australia with a common Polynesian cultural heritage and with almost all being practicing Christians. In this sample a wide range of denominations is represented.[3]

This paper provides evidence on migrant household's donations and giving in home and host countries. We examine donations to churches, other community organizations and remittances to migrants' own households, and extend this to consider donations of time (volunteering in community organizations). Understanding these aspects of giving will shed new light on aspects of the competing demands that migrant households face and how these influence charitable giving and assimilation in the host country. As is evident from the discussion in section 2, the majority of evidence on giving in the economics literature is from developed countries, particularly the US, with very little specifically on charitable donations or giving from developing countries. In this study we use a unique dataset compiled by the authors from a customised household survey among migrant households from the Pacific islands living in Australia.

The rest of the paper is organised as follows: section 2 summarizes some of the main insights from the economics literature relating to charitable giving from which our main research questions are drawn; section 3 explains the empirical strategy we use to investigate the two main hypotheses and discusses the survey data used for the empirical analysis; section 4 presents and discusses the regression results; and, section 5 draws the main conclusions.

2. Remittances, Charitable Giving and Secular Spending

2.1 Charitable giving, remittances and religiosity

Fund-raising by religious and other community organizations among overseas diaspora groups has long been used as a tool for funding causes, events and projects in the migrants' home and host countries, including the funding of community infrastructure projects, political parties, disaster relief funds, and wars (Newland, 2010). Migrants consequently face additional pressures over and above those of non-migrant households to give money and time beyond the needs of their immediate home and host country households. In the context of Pacific island

[3] Discussed further in section 3.4.

migrant communities in their main host countries, Australia and New Zealand, sharing norm pressures on patterns of giving have been well documented in the sociological and anthropological migration literature. Community groups, particularly churches, from the Pacific islands organise visits (known as *tere patis*) to the major migrant destination cities such as Auckland, Wellington, Sydney and Melbourne, specifically for the purpose of seeking organised collective donations (Alexeyeff, 2009; Lee, 2009; Loomis, 1990; Macpherson and Macpherson, 2009).[4] So regular have these organised fund-raising visits become, that leaders from the Pacific island communities in Auckland have at times resorted to lobbying their governments back home to impose restrictions on such organised fund-raising visits (Loomis, 1990).[5] Migrants in such communities are consequently under constant pressure to allocate their available household resources across a number of competing claims: their immediate family needs in the host country; their extended families' needs in their home countries; the expected contributions in cash and in-kind to religious and other community organizations in the host country - within both their respective migrant and host country communities; and, from the fund-raising campaigns organised by churches and other community organizations visiting from their home countries.

Although charitable giving may be subject to diminishing marginal utility, the links maintained with the home community are important for self-image and maintaining goodwill and social capital there, in anticipation of their possible eventual return. Similar considerations apply for donations and giving within the community in the host country. We are interested in identifying whether it is the case that migrants' home country donations are more impervious to outside influences and household characteristics than other forms of giving.

Pressures on migrants to respond generously to their home communities are brought to bear mainly through their home- and host-country social networks, centred primarily in the various church congregations. Most Pacific island migrants in Australia belong to and are active in one of a variety of Christian denominations and this could affect the way the household allocates

[4] For a useful analysis of the drivers of collective remittances among migrants from the Philippines, see Licuanan, *et al*. (2014).

[5] As early as the mid-1980s the Cook Island community in New Zealand lobbied their home country governments to impose a five-year moratorium on fund-raising tours (Loomis, 1990). In 2012 an expatriate Samoan politician in New Zealand attempted to limit the fundraising activities of a Samoan delegation to New Zealand. This provoked strong retaliation from community groups and churches in Samoan media, which called upon Samoans in New Zealand not to vote for him at the next election (Hill, 2012). He subsequently retracted his statement (Keresoma, 2012).

its resources across the competing claims. Innaccone (1998) identified that norms in relation to charitable giving manifest themselves differently among the various religious denominations. Such heterogeneity with respect to giving behaviors is likely to be present among the various church denominations for a variety of reasons. It is well established in the empirical literature that differences in underlying theological beliefs and organizational characteristics of the denomination, irrespective of size and locality, could be a critical factor in giving behaviors. Studies on the role of religiosity in giving address a range of issues, such as the relationships between giving to religious *versus* secular charities (see Donahue (1994), Hill and Vaidyanathan (2011), and Clain and Zech (1999) for the US, and Lyons and Nivison-Smith (2006) for Australia), and the relationship between religious giving and religious attendance (Gruber 2004).

In this study we are more interested in controlling for possible variation in giving behaviors across different denominations and theological beliefs. Given that a high proportion of research has used data and surveys originating in the US, the literature has primarily focused on Western religions and denominational differences within these. Both the sociological (Chaves, 1999; Smith, *et al*., 2009) and economic (Donahue, 1994; Zech, 2000) evidence points to a high degree of variation in the degree of charitable giving among different Western denominations. A recurring finding is a higher level of giving among Protestants compared to Catholics (see, for US studies, Davidson and Pyle (1994), Forbes and Zampelli (1997), Zaleski, *et al*., (1994) and, in Canada, Bowen (1999)).[6] However, an important study by Brown and Ferris (2007) raises some doubts about the strength of the religiosity factor in charitable giving estimated in such studies. They investigated the role of social capital on various giving and volunteering activities using US data. It was found that there was a strong association between indicators of an individual's social capital and all forms of giving. When social capital was included in their model, it resulted in a significant fall in the direct influence of religiosity.

There have been only a few studies that focus specifically on the role of religion in the remittances and charitable giving behaviors of migrant households. Kelly and Solomon (2011)

[6] It needs also to be recognized that there can be variation arising from different theological beliefs among individuals within the same denomination. For example, Lunn, *et al*. (2001), using data from the Presbyterian church in the US, found that conservative Presbyterians gave more in total, and gave more to the local church and to non-Presbyterian religious organizations than did more liberal Presbyterians, while more liberal Presbyterians gave more to secular charities than did conservative Presbyterians.

use US data to test whether immigrants from different religions remit differently and whether regular religious service attendance influences their remitting behavior. They found that Protestants are more likely to remit than Catholics whilst Catholics are more likely to remit than those with no religion. In Canada, Mata and McRae (2000) observe that although average contributions of the foreign born increase over time, the religious donations decreased whilst giving to other, secular charitable causes such as health and education increased. A study of Romanian migrants found that all religious groups have higher probabilities to remit compared to the group with no religion (Roman and Goschin, 2011). In relation to in-kind remittances Cowely, *et al*., (2004) found from a study of Pacific islanders in New Zealand that religious affiliation is significantly associated with traditional gift giving. Variation in the strength of religious or other social pressures on migrants to give can also arise from locational differences. Brown, *et al*., (2014) identified a stronger giving response from migrants living in regional areas in the wake of a natural disaster in the home country. This possibly reflected donor fatigue in metropolitan areas due to the more persistent community pressures to donate. More remote, regional areas, are visited less frequently by the fund-raising parties from their home country church and community organizations.

Our sample constitutes households with a common, Polynesian cultural heritage and almost all are Christians, with a small number recording no religious affiliation. In this sample a wide range of denominations is represented, specifically; Anglican, Catholic, Congregational, Methodist, Presbyterian, Wesleyan and unique Pacific forms of Christian sects such as the Cook Islands Christian Church, Congregational Christian Church of Samoa, Free Church of Tonga, Pacific Islanders' Presbyterian Church as well as Jehovah's Witnesses (JWs).[7] Also present, although less commonplace, are some evangelical and Pentecostal churches and Mormons. This allows us to also control for heterogeneity with respect to religiosity in our investigation of charitable giving and remittances. In addition, as part of our sample of households is located in regional Australia, it will be possible to assess the extent to which giving and remittances behaviors are subject to differing social pressures between metropolitan and regional locations.

[7] See Table 2 in section 3.4 for details of sample composition across denominations.

2.2 In-kind giving and volunteering

In this study we investigate the migrant households' contributions to a variety of volunteering activities through their involvement in social clubs, societies and organizations. In the US context Brown and Lankford (1992) found strong evidence of a complementary relationship between cash donations and volunteering. And, as already noted, there is evidence of a strong positive relationship between associational engagement with the individual's social networks and all forms of giving, including volunteering (Brown and Ferris, 2007). However, the growing pressures of work in developed economies are increasingly seen as an impediment to attaining a work-life balance and some evidence exists to suggest these pressures can lead to a reduction in social activities including volunteering (Bloom and Van Reenen 2006, Leeves 2014). Moreover, for migrant households, the aspiration to attain standards of living prevalent in the host country, would generate further pressure to generate more income through work. In addition, if migrant households in rich countries encounter similar levels of sharing norm pressures normally prevalent in their home countries, there is an added dimension to the pressures on the household's resources that could work to the detriment of their giving of time. In this case we would not expect to find a complementary relationship.

It also needs to be recognized that in-kind giving, such as the giving of one's time, the giving of gifts and volunteering, can be influenced by the role of religion (Yen and Zampelli 2014; Bekkers 2002; Bekkers and Schuyt 2008; Bowen 1999; and Parboteeah, *et al*. 2004).[8] Again, our survey data allow us to control for the effects of different religious denominations.

2.3 Giving and secular pursuits

Expenditure on other secular activities could compete with charitable giving in all forms. Stolz (2010) argues that there is a '*silent battle'* as individuals constantly switch between the religious sector and the secular sector. In defining the different types of goods he notes how this competition only exists with immanent final goods as opposed to the transcendent final goods. Gruber and Hungerman (2008) assess whether increased exposure to the 'mall culture' and the possible increase in non-religious activities creates a time allocation problem and significantly reduces religious activities and the associated church donations. They exploit as

[8] It has also been argued that charitable giving can be influenced by the individual's receipt of public or private transfers. The effect could be positive or negative: positive if recipients of generosity could behave more generously towards others through 'serial reciprocity', or, less generously if reliance on charity eliminates a culture of responsibility to help others. Ribar and Ottoni-Wilhelm (2002) find little evidence of a crowding-out effect in the US in relation to donations to international development charities. Kalenkoski (2014) examines the effects of public and private transfers on the recipients' behavior with respect to volunteering, and finds negative effects on both male and female volunteering in the form of time spent caring for non-household adults or children.

a natural experiment the occurrence of a policy-driven change in the form of a repeal of the *Blue Laws* in some US states which banned retail shopping on Sundays. They found that repeal of these laws led to a reduction in both religious participation and church donations, thus highlighting the effect of secular competition on the opportunity cost of religion.

The literature on competition between the religious and secular sectors suggests that there could be a different giving behavior between those living in metropolitan and non-metropolitan areas. Lunn, *et al*. (2001) use data from the Presbytarian church in urban and rural settings in the US, expecting lower attendance by church members in an urban community compared to those in a rural setting because there are more alternatives for one's time in urban areas. They also suggest that there could be more giving among those attending an urban church as an act of compensation for their reduced attendance. In this case rather than a trade-off between spending in the mall and church giving, the two could be positively related. In relation to migrant communities, migrants face exposure to much higher aspirational standards of living and more opportunities to spend than they would in their home countries. This could make remittances and/or charitable giving in all forms among migrants particularly sensitive to secular expenditure. As our survey data include migrant households in both metropolitan and regional locations we are also able to control for the effect of variation in exposure and access to the 'mall culture'.

3. Empirical strategy, data and descriptive statistics

3.1 Modelling strategy

In this section we focus on the modelling and empirical strategies to investigate giving. First, we examine the extent to which there are differences with respect to donations to community organizations (including churches) in home- as compared to host-country and we examine the relative strength of religious denominations on giving in each case. We also investigate the effect of secular discretionary consumption on charitable giving and remittances.

Our modelling strategy follows most other studies on the role and effects of religiosity in assuming that religious denomination is exogenously given (Aldashev and Platteau, 2014).[9] In

[9] We are not addressing the broader question of the role of religion in economic development (see for example Grier, 1997), where religiosity is not exogenous to most factors driving development. However, there is another

the Polynesian context this assumption is reasonable given that European colonisation of the South Pacific in the late seventeenth and early eighteenth centuries was preceded by the establishment of Christian missions. The Church of the Latter Day Saints (Mormons) arrived a little later but their congregations were well also established in Polynesia by the end of the nineteenth century (Lal and Fortune, 2000: Ch. 4). It has been documented that conversion usually entailed villages being signed up to a particular denomination *en masse* where they were following the choice of denomination of their traditional clan leader (Denoon, 1997). Religion consequently accentuated existing social divisions among Polynesians, with the result that sectarian and factional divisions coincided with and reinforced one another. Endogenous switching and self-selection into a denomination would be highly unlikely in these circumstances.[10]

As noted earlier, our data also allow us to control for differences in behaviors between migrants living in regional versus metropolitan areas. For instance, being less exposed to the mall culture and associated pressures on secular expenditure and with less opportunity to free-ride in smaller congregations may have a positive effect on charitable giving. Alternatively, a reduction in pressure to identify with the social norm of giving may serve to reduce the amounts donated, especially to home countries.

3.2 Modelling charitable giving and remittances

Religious denomination, secular expenditures and the other influences on giving could impact on either or both the participation decision and the level of giving to charitable organizations, both locally (in Australia) and overseas (migrant's home country), and remittances to migrant's own household in home country.[11] We also acknowledge that these effects will differ for each category of giving and therefore estimate separate equations for each type.[12]

strand of the religiosity literature that treats choice of religious belief and denomination as an endogenous, strategic choice. See Aldashev and Platteau (2014), section 21.3 for a review of this literature.

[10] One possible exception would be the JWs given that a requirement for all members is door-to-door 'witnessing' through which they are expected to win new converts.

[11] By 'participation' we mean the probability of being a giver, whether or not the level of giving in the observed period is greater than zero.

[12] Yen and Zampelli (2004) estimated a system of Tobit equations for each form of giving. However, to the best of our knowledge it is not possible to estimate such a system with our preferred double-hurdle model. It is not clear that the gain in efficiency from including cross equation error terms with separate participation and selection equations is outweighed by estimating the participation and levels equation jointly.

Data on giving typically include both givers (giving > 0) and non-givers (giving = 0). Consequently, the choice of statistical tool for modelling giving decisions depends on the assumptions made about the non-giving migrants' behavior; i.e. whether they never give, or just happened not to give in the observed time period. To allow for the possibility of both types of zero's within the same framework requires a more flexible modelling framework than the standard Tobit or the Heckman models (Wooldridge, 2010). We follow the same approach as in a previous analysis of migrants' remittances (Brown, *et al*., 2014), employing the double-hurdle model as proposed by Cragg (1971). This model assumes that zero giving could be reported in both decision stages, where the zeros in the first, participation stage arise from those who never give, and those in the second, level stage arise from constraints in the migrant households. In the double-hurdle model a migrant household has to overcome two hurdles in order to report a level of giving greater than $0. The first hurdle is represented by a Probit model - equation (1), and the second hurdle is represented by a standard linear regression model - equation (2) (Cragg, 1971; Greene, 2010):

$$\text{Prob}(y > 0 \mid \boldsymbol{x}) = \text{Prob}(\boldsymbol{x}'\beta + \varepsilon > 0 \mid \boldsymbol{x}) = \Phi(\boldsymbol{x}'\beta / \sigma) \tag{1}$$

and

$$E\left[y \mid y > 0, \boldsymbol{x}\right] = \boldsymbol{x}'\beta + \sigma\phi(\boldsymbol{x}'\beta / \sigma) / \Phi(\boldsymbol{x}'\beta / \sigma) \tag{2}$$

where y is household giving, $\boldsymbol{x}$ is the vector of independent variables, which may or may not be different in the two equations, and β is the vector of coefficients. Equation (2) allows for negative values of y, an unreasonable assumption when modelling such data as non-negativity must be guaranteed. This can be done either by truncating the distribution at zero or assuming that y follows a different distribution such as natural logarithm, $\ln y = \beta'\boldsymbol{x} + \varepsilon$, where the error terms are normally and independently distributed given $y > 0$.

In the current study the double-hurdle model is estimated for all three categories of giving – charitable donations to charitable organizations, domestic and overseas, and remittances to own household in the home country. The double-hurdle model, unlike the Heckman model, does not require different independent regressors in the two stages for identification.[13] In addition the two stages in the double-hurdle framework can be estimated independently from each other,

[13] The presence of continuous observations on the dependent variable implies that exclusion restrictions are not required for the identification of the stochastic processes of the two stages of the model, and, as the error terms of the stochastic processes governing the participation and level equations are uncorrelated the two equations of the double-hurdle model are estimated independently.

i.e. the errors terms of the two stages do not have to be linked together. The models in this paper are estimated on the assumption that the error terms are unconnected as in Sinning (2011) and Brown, *et al*. (2014).

The empirical (OLS) model for the level decision of the double-hurdle model is summarized by equation (3),[14] where βs are the coefficients to be estimated; Y_i is the natural logarithm of the category of giving *n* (*n*= *Overseas Churches and Community Organizations, Australian Churches and Community Organizations*); T_i is a vector of host country household *i* variables (per capita income, household head education level and age, ownership of house in Australia, total years since migration, intention to return to home country, received a visitor from home country during the year, member of a home country social/community group); N_i is a vector of home country (HC) household variables (home country, own house in home country, parents living in home country); $Origin_i$ is location in home country of household *i* – rural *vs*. urban area; U_i is the religious denomination of household *i* in the host country; Loc_i is current location of household *i* in host country – metropolitan or regional area; and Exp_i is an indicator of discretionary secular expenditure by household *i*. This is identified by positive responses to the question "Did you make purchases of household items (TV, fridge, etc.)" during the preceding year.

$$Y_{in} = \beta_{oi} + \beta_1 \boldsymbol{T}_i + \beta_2 \boldsymbol{N}_i + \beta_3 Origin_i + \beta_4 U_i + \beta_5 Loc_i + \beta_6 Exp_i + \varepsilon_i \quad (3)$$

Following the discussion in section 2, our expectation is that there is likely to be some trade-off between charitable giving and discretionary secular spending so that $\beta_6 < 0$; for instance, if Protestants are likely to be more generous givers than Catholics, there will be variations in *U*.

The location variable (Loc_i) captures all non-observable differences in giving behavior between regional and metropolitan locations in the host country, which for reasons noted earlier could have an effect on giving.

3.3 Modelling volunteering

As noted above, while giving through remittances to the home country household and to the church and other community organizations may be competing or complementary, it is also

[14] Given that the independent variables in the Probit and OLS equations are identical we present only the OLS model here.

possible that giving is competing or complementary to other forms of donation such as volunteering (Bowen, 1999; Bekkers, 2002). We explore this possibility by examining the relationship between membership and level of activity in social organizations and religious denomination. In the survey (to be discussed in section 4), the respondents were asked about their membership of a variety of social organizations that are not directly related to the community or the church, and whether they were active in those organizations. Memberships and activities in social organizations has been used in previous research as an indicator of social capital investment (Glaeser, *et al*., 2002; Fidrmuc and Gerxhani, 2008; Urwin, *et al*., 2008). Memberships and activities provide an indication of an individuals' allocation of time and resources to social capital investment in the community. Other measures have been used in studies of individual social capital, such as questions on trust of others in society (Knack and Keefer, 1997). However, we are particularly concerned with donation of time rather than an individual's feelings of connectedness within the community. (Our organizations include a range of social and community groups as well as sporting and professional organizations details of which are given in Appendix Table A.1).

In this instance the unit of analysis is the individual respondent (household head) rather than the household and to measure volunteering we use two measures: (i) the number social organizations to which the individual belongs; and (ii) the number of social organizations in which they are active (self-declared), excluding their respective church congregations and home country community groups. The dependent variables in this instance are treated as count data variables. We estimate negative binomial models to obtain estimates of factors influencing membership and activity. Our initial estimates using a Poisson model indicated there was excessive overdispersion in the data, the variance exceeds the mean, so the more flexible negative binomial distribution was used. The same model is used for membership and activity counts and is summarized below, where the probability and individual is a member of (active in) Y organizations is given by:

$$P(Y = y \mid X_1, X_2, X_3, k) = \frac{\Gamma(y+k)}{\Gamma(k)\Gamma(y+1)}\left(\frac{k}{k+\mu}\right)^k\left(\frac{\mu}{k+\mu}\right)^y \qquad y = 0,1,2,... \tag{4}$$

With mean equal to μ and variance equal to *1/k* and Γ is the gamma distribution and the X's are explanatory variables. In our estimates we use a variable indicating the total number of years the household has been living abroad as the exposure variable; the amount of time over

which the individual is exposed to the possibility of the event occurring. The length of time abroad gives the household more time to establish contacts and become engaged with the local community.

There was a relatively heavy concentration of observations with counts between zero and three, with very few above three. As a robustness check the models were also estimated using an ordered probit model with four categories for the dependent variable, where the first three are those with counts of zero, one and two and fourth with counts of three or more.[15]

Our choice of independent variables is guided by factors that have been identified in previous studies as influential on social capital investment and factors that would impact on an individual's time allocation. The former includes owning a house and education level, both of which should contribute to increased membership and activity counts, and the regional location variable which should decrease membership and activity counts. Age is included as people increase social contacts between ages 20 to 40 years of age, and over the age of about 45 years social connections start to decrease (Glaeser, *et al.,* 2002). We also include variables to capture the individual's employment circumstances as this will affect time allocation, as well as controls for gender, country of origin and our set of church denomination indicators. In an extension of the basic model, we include the same variable for discretionary expenditure on secular goods (*Exp*) as well as all the previously discussed variables. To our knowledge, no previous study has investigated the impact of discretionary secular expenditure on social capital investment. Our expectation is that expenditures would deter membership and activities through a mixture of financial and time constraints. An alternative possibility is that the social networks generated through membership and activity in these types of organizations generate the potential for purchase of goods and services more cheaply from compatriots in these social groups. This is a question to be resolved through empirical estimation.

3.4 Survey data and descriptive statistics

A customised survey of Polynesian migrant households from Tonga, Samoa and the Cook Islands was conducted over a six month period from September 2010 to March 2011. A total of 824 households from these communities were surveyed. The sample represents about 5%

[15] See Table 4 in the following sub-section for the frequency distribution. The ordered pobit results are reported separately in Appendix Table A.2.

each of the total Tongan- and Samoan-born populations and approximately 12% of the Cook Islands-born population in New South Wales (NSW) as estimated by the 2006 Census (Department of Immigration and Citizenship 2010a; 2010b; 2010c). The surveys were administered in urban (greater Sydney) and regional (Riverina region) areas of NSW simultaneously.[16]

As no sample frame exists the respondents were recruited through a combination of methods, initially through interviewer networks combined with snowball sampling. There is a wide range of church denominations in the sample as shown in Table 1.

Table 1

Composition of Sample by Church Denomination

Protestant	Catholic	Mormon	Jehovah's Witness	Evangelical/ Other	No religion	No response	Total
524	117	35	76	13	10	49	824
63.6%	14.2%	4.2%	9.2%	1.6%	1.2%	5.9%	100.0%

We excluded from the sample respondents who indicated 'no religion' or gave no response to the religious affiliation question. This left 748 observations for the estimation of donations and remittances and 757 observations for estimation of volunteering in the final sample.[17] The numbers of Mormon and Evangelical households were small and had to be combined in the regression estimates and are classified as *Other* denominations.

A possible sampling bias could arise with respondents being recruited into the survey through a church or community organization; members of church congregations are possibly more likely to be members of and active in volunteering activities with community organizations. However, it is noted that just over half of our respondent household heads were neither members of, nor active in, social organizations (see Table 4).

[16] For further details of the survey, see [deleted for review purposes]. The Riverina region is primarily an agricultural area in western New South Wales, bordering the state of Victoria. It is primarily but not exclusively rural as the survey area included a number of towns. Hence our preferred usage of the term 'regional'.

[17] The proportion of respondents not providing a denomination of affiliation may appear low, but is consistent with the pervasiveness and dominance of Christianity in Polynesian culture associated with the establishment of numerous Christian missions that accompanied European colonization of the South Pacific from the late 17th century. The slightly lower numbers of observations reported in the regression results in section 4 are due to missing observations for some variables.

Descriptive statistics of some key variables at the household and individual (household head) level for each religious denomination are presented in Table 2.

Table 2
Profile of Migrant Households and Religious Denominations
(Standard Deviation)

Variables	Protestant N=**524**	Catholic N=**117**	Mormon N=**35**	Jehovah's Witness N=**76**	Evangelical/ Other N=**13**	Total N=**765**
HH with parent in HC (%)	34.35	32.48	37.14	46.05	46.15	35.56
HH had a visitor from HC (%)	38.93	47.01	42.86	28.95	30.77	39.22
Own house in Australia (%)	23.85	26.5	20	22.37	23.08	23.92
Own house in HC (%)	17.75	20.51	11.43	13.16	23.08	17.52
Living in regional area in Australia (Riverina) (%)	21.56	17.95	22.86	36.84	38.46	22.88
From rural origin in HC (%)	29.01	18.8	17.14	19.74	23.08	25.88
Unexpected events in Australian HH (%)	10.11	12.82	20	10.53	46.15	11.63
Samoa (%)	63.41	14.02	5.79	15.55	1.22	100
Tonga (%)	58.06	24.88	6.91	8.76	1.38	100
Cook Islands (%)	86.36	7.73	0.45	2.73	2.73	100
HH head is Male (%)	81.8	76.92	74.29	90.79	92.31	81.78
HH head's intent to return to HC (%)	15.65	28.21	28.57	11.84	30.77	18.04
Total HH income ($'000)	95.45 *(59.37)*	95.29 *(59.79)*	98.51 *(44.29)*	94.44 *(52.46)*	116.35 *(60.93)*	95.82 *(58.13)*
Age of HH head (yrs)	45.29 *(11.36)*	44.73 *(12.05)*	48.23 *(11.51)*	41.04 *(10.6)*	44.85 *(7.54)*	44.91 *(11.42)*
Total years HH head was away from HC	22.80 *(11.4)*	25.51 *(11.04)*	25.60 *(7.34)*	22.13 *(9.97)*	23.62 *(9.07)*	23.29 *(11.06)*
HH head's Education (years)	10.84 *(3.23)*	11.29 *(2.54)*	9.94 *(3.3)*	10.91 *(3.01)*	9.31 *(3.64)*	10.85 *(3.13)*

HH=Household; HC=Home country

Catholics and *Other* had high rates of home ownership in both the host and home countries. Protestants had the highest proportion of households with regional origins in the home country, while the highest proportion living in regional areas in Australia came from the JW and Other

congregations.[18] Samoa had the highest proportion of Mormons and JWs, while Tonga had the highest proportion of Catholics and the Cook Islands had the highest proportion of *Other* religious denominations.

Catholic and Mormon household heads had been away the longest from their home country and these denominations also had the highest proportion that intended to return. Mormon and *Other* household heads had the lowest number of years of education but had the highest household income.

As shown in Table 3, there is variation in giving (donations) across denominations, in relation to both participation in giving and, the mean level of giving. It has been suggested elsewhere that norms manifest themselves differently in various religious denominations (Iannaccone, 1998).

Table 3
Proportion Donating to Charitable Organisations and Remitting by Religious Denomination (*Standard Deviation*)

Church categories	Donations in Australia		Donations Overseas		Remittance to Own HH in HC		Total Remittance to HC	
	%	Mean	%	Mean	%	Mean	%	Mean
Protestant	78.05	$1,299.44 *(1,703.05)*	93.7	$2,640.81 *(4,285.5)*	78.44	$5,577.09 *(5,564.37)*	95.04	$7,298.98 *(9,973.59)*
Catholic/ Anglican	76.07	$1,615.72 *(1,991.6)*	96.58	$1,949.29 *(3,831.07)*	87.18	$6,035.51 *(7,479.66)*	93.16	$8,991.65 *(12,216.17)*
Mormon	65.71	$2,326.09 *(4,335.71)*	97.14	$3,370.59 *(3,332.44)*	85.71	$4,656.67 *(7,727.07)*	97.14	$7,142.65 *(11,749.08)*
Jehovah's Witness	67.11	$2,690.78 *(2,580.44)*	92.11	$4,749.00 *(6,238.83)*	76.32	$6,772.24 *(8,810.7)*	92.11	$10,359.00 *(13,206.48)*
Evangelical/ Other	69.23	$1,388.89 *(1,505.36)*	76.92	$7,520.00 *(9,373.46)*	92.31	$6,583.33 *(5,653.65)*	100	$10,357.69 *(10,849.98)*
Total	75.95	$1,512.05 *(2,035.34)*	93.86	$2,840.03 *(4,585.87)*	80.13	$5,740.14 *(6,384.69)*	94.38	$7,897.25 *(10,803.71)*

[18] As the Protestant denomination consists primarily of Methodist and Presbyterian churches, the relatively few Anglican congregations were grouped with the Catholics, given the stronger similarities between them.

The mean amount of donations to organizations in Australia was lower than the mean amounts donated to overseas organizations across all religious denominations. Protestants had the highest proportion of household donors (78%) to organizations in Australia but they had the lowest mean amounts ($1,299), while JWs who had one of the lowest proportion of households donating (67%) had the highest mean amounts ($2,691). This is consistent with the hypothesis that there is the opportunity for more free-riding in the larger congregations such as Protestants. In addition, as suggested by a number of previous studies, sectarian religions are generally associated with greater giving than more main-line churches. The highest mean level of donations for the whole sample is observed for the JWs and *Other* denominations.

Table 4 shows the frequency distributions for the two variables used in our analysis to gauge the involvement of households in volunteering activities, the sample size reflects those households that responded completely to the questions on volunteering.

Table 4
Frequency Distribution for Non-Church Group Volunteering

Number Groups (count)	Group memberships		Active in Group	
	No. HH Heads	% sample	No. HH Heads	% sample
0	395	51.63	512	66.93
1	184	24.05	148	19.35
2	119	15.56	67	8.76
3	48	6.27	27	3.53
4	12	1.57	7	0.92
5	5	0.65	3	0.39
6	1	0.13	-----	-----

The first two columns refer to number of non-church social groups, clubs, etc. to which the individual (household head) belongs. The second refers to the number of such groups in which the household head claimed to be 'active'. As identified earlier, more than half of the household heads were not members of any non-church group, and almost three-quarters were not active members of any such groups.[19]

[19] For a list of social organizations and the percentage of HH heads responding to each as 'members of', or, 'active in' see Appendix Table A.1.

4. Results

4.1 Giving and remittances

The results in Table 5 are for the double-hurdle model where the dependent variable is, *Giving* (in logs). Model I is for *Giving Overseas* (to the home country) for the full sample and Model II is for a subset of households that responded negatively to a question asking "*Did the costs of sending money influence your household's decision to send money (overseas)*?" It is assumed that these households have greater resources and so are less financially constrained in their expenditure decisions. In Model III the dependent variable is *Giving Australia*, which includes donations and other monetary gifts to organizations in the host country. In the estimates the omitted denomination category is Protestant.

First we note that income per capita income has a positive and weakly significant association with the level of giving but not the propensity to give. Of particular interest is the *Goods* variable which is highly significant and negatively signed in the levels equation. A contemporaneous increase in spending on major household items reduces the amount of overseas giving. This is consistent with Gruber and Hungerman's (2008) findings that religious giving is prone to secular competition. The *Goods* estimate is much lower in the *Australian* giving equation and only just significant at standard levels of confidence. *Overseas* donations are, on average, nearly twice as large as home donations and so might be expected to be more sensitive to spending decisions in the household.

Focusing on the denomination results, we see that the propensity to give – 'Participation' in the first and fourth columns for *Overseas* and in *Australia* respectively – does not, in general, differ across religious denominations. The only exception is the case of giving in Australia where *Other* denominations exhibit a significantly lower propensity to donate.

The amount given does display differences across denominations. For overseas giving (Model I, the full sample, in the second column), Catholics give a lower amount than Protestants (the omitted category), similar findings were reported by a number of other studies cited earlier (Forbes and Zampelli (1997); Bowen (1999); Zaleski, *et al*. (1994); Kelly and Solomon (2011)). From the raw data it can be determined that the average Catholic household donated approximately $1,900 overseas whilst the average for all other households was $2,800; a 32% difference that is significant at the 5% level. The coefficient estimates suggest the conditional

Table 5
Double-Hurdle Regression Results: Giving
(Robust standard errors)

	Overseas			Australia	
	Participation	Level Model I	Level Model II	Participation	Level Model III
Income per capita	0.012	0.098*	0.162*	0.236***	0.176***
	(0.128)	*(0.059)*	*(0.090)*	*(0.080)*	*(0.066)*
Age of HH head	*0.018***	*0.002*	*0.012***	*0.009**	*0.003*
	(0.009)	*(0.004)*	*(0.006)*	*(0.005)*	*(0.004)*
HH head's years of education	-0.024	0.005	-0.019	-0.058***	0.029**
	(0.031)	*(0.013)*	*(0.020)*	*(0.019)*	*(0.014)*
Own house in Australia	-0.015	0.183**	0.039	-0.224*	0.164*
	(0.221)	*(0.094)*	*(0.148)*	*(0.134)*	*(0.100)*
HH head's total years away from HC	-0.001	0.006	-0.003	-0.002	0.005
	(0.009)	*(0.004)*	*(0.005)*	*(0.005)*	*(0.004)*
HC social group	0.265	0.450***	0.112	0.367**	0.221*
	(0.298)	*(0.116)*	*(0.186)*	*(0.173)*	*(0.118)*
HH head intends to return to HC	0.143	0.295***	0.201	0.196	0.016
	(0.272)	*(0.111)*	*(0.163)*	*(0.162)*	*(0.115)*
Had visitor from HC	0.170	-0.120	-0.265**	0.160	-0.045
	(0.181)	*(0.080)*	*(0.120)*	*(0112)*	*(0.085)*
Own house in HC	0.036	0.257***	0.316***	0.071	0.129
	(0260)	*(0.103)*	*(0.131)*	*(0.151)*	*(0.106)*
Rural origin of HH head in HC	-0.590***	-0.470***	-0.130	-0.234**	-0.174*
	(0.176)	*(0.091)*	*(0.152)*	*(0.121)*	*(0.097)*
Parent living in HC	-0.015	0.461***	0.393***	0.270**	0.454***
	(0.180)	*(0.085)*	*(0.127)*	*(0.118)*	*(0.090)*
Samoan	0.397**	0.336***	-0.059	-0.088	0.522***
	(0.207)	*(0.096)*	*(0.149)*	*(0.132)*	*(0.103)*
Cook Islander	0.308	-0.449**	-0.411***	0.170	-0.266***
	(0.220)	*(0.108)*	*(0.165)*	*(0.150)*	*(0.111)*
Living in regional area (Riverina)	-0.726***	-0.871***	-1.342***	-0.370***	-0.416***
	(0180)	*(0.098)*	*(0.157)*	*(0.128)*	*(0.107)*
Catholic	0.271	-0.487***	-0.400***	-0.030	0.133
	(0.280)	*(0.109)*	*(0.168)*	*(0155)*	*(0.116)*
Jehovah's Witness	0.066	0.363***	0.594***	-0.176	0.500***
	(0.272)	*(0.134)*	*(0.218)*	*(0.175)*	*(0.148)*
Other Churches	-0.274	0.239	0.409	-0.509***	0.218
	(0.317)	*(0.162)*	*(0.256)*	*(0.208)*	*(0.179)*
Goods	*-0.060*	*-0.455****	*-0.708****	*0.209*	*-0.191**
	(0.230)	*(0.105)*	*(0.143)*	*(0.149)*	*(0.111)*
Constant	1.045	5.902***	5.808***	-1.381*	4.090***
	(1.332)	*(0.622)*	*(0.987)*	*(0.842)*	*(0.685)*
lnsigma	-0.006			-0.067**	
	(0.027)			*(0.029)*	
Number of observations	748		278	748	

*** p<0.01, ** p<0.05, * p<0.1. Omitted cases Tongan, Protestant

effect of a non-Catholic household becoming Catholic would lead to a 48% reduction in donations overseas. Bowen (1999) reports annual giving amounts of $300 for Catholics, $752 for mainline Protestants (Anglicans) and $948 for conservative Protestant (evangelicals) in Canada. Thus our differences seem comparable to the types of gaps found in previous research. JWs give proportionately more of their income overseas, which is what we expected given the more centralised control over their congregation. Within Australia, only JWs give significantly more than the other denominations.

It is also interesting to note that living in a regional locality (*Riverina*) is associated with a lower participation in and level of giving, both overseas and in Australia. Outside the large metropolitan areas where most Pacific island migrants are concentrated, families are less vulnerable to pressures from community organizations and church fund-raising drives (Brown *et al*., 2014).

Of the other variables, we note that intention to return to the home country is associated with higher donations overseas. This is consistent with investment motives to build the migrant household's stock of social capital upon return as Ahlburg and Brown (1998) found in an earlier study of remittances to Tonga and Samoa. Similar considerations could apply to the positive impact on donations from having a parent living in the home country. Belonging to a *Home Country Social Group* has a significant positive effect on giving, these are households wnere the social pressure to donate is likely stronger and may also be further indication of wanting to build up social capital in the home country. Households originating from rural areas in the home country are less likely to donate and those that do donate they give less. It may be that the churches and social groups from the rural parts of the Pacific islands make lower or less regular demands that those from the main cities and towns.

The third column presents the estimates for Model II (levels), for the restricted sample. Interestingly, the *Goods* coefficient estimate is larger for this sub-sample. Hence, it does not appear that the impact of secular expenditures is limited to those households that are rather more conscious of the cost of remittances. The denominational effects are consistent with the previous model. However, there are some changes in the estimates for other variables; *Home Country Social Group, intention to return home, Samoan* and *regional origin*, no longer have a significant positive effect on the amount of giving. The reduced sample size is likely to impact on the precision of estimates in some cases.

In Table 6 we examine the impact of the same set of variables on remittances to *Own Household*. For brevity, we report only the levels results for two model specifications; the base model in the column labelled Model I and an extended model in the column labelled Model II.

Income per capita is again positive and significant and of a similar order of magnitude to that found in Table 5. Hence, both forms of giving make a claim on increases in a migrant household's income. The *Goods* variable is not significant, which suggests the drivers of remittances are different to the drivers of donations. It would appear that there is less conflict with discretionary expenditure in the case of remittances, the investment and altruism motives associated with this form of giving could make it rather more resilient to competing pressures. Among households that do remit to their own household in the home country, we again see that Catholics give less than other denominations. However, those from *Other* congregations also remit a significantly lower proportion of their income than protestants and JWs. In the alternative specification (Model II) we include an additional variable capturing the effect of events that are likely to lead to increased household expenditure: *Births/Deaths/Weddings*. This includes the occurrence of a wedding, a death, a birth or a christening or other major social ceremony in the household in Australia during the preceding 12 months. This has no significant association with remittances and again suggests remittance decisions are not susceptible to one-off expenditures; the inclusion of this variable does not affect the results of the other variables. It is noted that being a member of a *Home Country Social Group* in the host country increases the amount of remittances. Hence, households that are members of such groups have greater claims on their resources both from the family and the broader community. Having a visitor from the home country increase remittances. Visitors can be a cost efficient way to remit money back. As might be expected, having a living parent or house in the home country are both associated with increased remittances. Catholic *and Other* denominations remit less than Protestants and JWs.

In the third column we report the results from an extended version of the *Overseas Giving* model reported in Table 5, where we now include the *Births/Deaths/Wedding* variable in the equation in addition to all the previous regressors. The coefficient for this additional variable is not significant but the *Goods* variable remains strongly negative and significant as in Table 5. This provides further support for the contention that it is discretionary secular consumption

Table 6
Double–Hurdle Regression Results: Remittances and Giving
(Robust standard errors)

Variables	**Remittances (Level)**		**Giving (Level)**
	Model I	Model II	
Income per capita	*0.116**	*0.129**	*0.101**
	(0.072)	*(0.072)*	*(0.059)*
Age of HH head	*0.001*	*0.002*	*0.003*
	(0.005)	*(0.005)*	*(0.004)*
HH head's years of education	-0.030*	-0.031*	0.005
	(0.016)	*(0.016)*	*(0.013)*
Own house in Australia	0.057	0.058	0.184**
	(0.117)	*(0.117)*	*(0.094)*
HH head's total years away from HC	0.010**	0.009**	0.006*
	(0.005)	*(0.005)*	*(0.004)*
HC social group	0.298**	0.280**	0.437***
	(0.143)	*(0.144)*	*(0.117)*
HH head intends to return to HC	0.082	0.086	0.299***
	(0.132)	*(0.132)*	*(0.111)*
Had visitor from HC	0.535***	0.532***	-0.123
	(0.096)	*(0.096)*	*(0.080)*
Own house in HC	0.484***	0.471***	0.248***
	(0.119)	*(0.119)*	*(0.104)*
Rural origin of HH head in HC	-0.179	-0.184	-0.472***
	(0.116)	*(0.116)*	*(0.091)*
Parent living in HC	0.607***	0.613***	0.462***
	(0.101)	*(0.101)*	*(0.085)*
Samoan	0.037	0.033	0.332***
	(0.113)	*(0.113)*	*(0.096)*
Cook Islander	-0.706***	-0.709***	-0.451***
	(0133)	*(0133)*	*(0.108)*
Living in regional area (Riverina)	-0.174	-0.168	-0.870***
	(0.117)	*(0.117)*	*(0.098)*
Catholic	-0.270**	-0.267**	-0.487***
	(0.131)	*(0.131)*	*(0.109)*
Jehovah's Witness	0.047	-0.044	0.362***
	(0.167)	*(0.167)*	*(0.134)*
Other Churches	-0.318*	-0.336*	0.226
	(0.190)	*(0.191)*	*(0.163)*
Goods	*0.145*	*0.141*	*-0.459***
	(0.125)	*(0.125)*	*(0.105)*
Births/Death/Wedding	-----	*0.135*	*0.092*
		(0.143)	*(0.123)*
Constant	6.549**	6.471**	5.871***
	(0.756)	*(0.760)*	*(0.623)*
lnsigma	0.122***	0.121***	-0.006
	(0.029)	*(0.029)*	*(0.027)*
Number of observations	748	748	748

*** p<0.01, ** p<0.05, * p<0.1 Omitted cases Tongan, Protestant.

expenditures that reduce household donations. Overseas giving appears to be immune from expenditures on ceremonial activities related to the religious world.

4.2 Volunteering and social capital

We now examine volunteering, using our count data models of *membership* and *activity* in social organizations, excluding their respective church congregations and home country associations.[20] In Table 7 we present the results for three specifications of the negative binomial models: a baseline case (Model I) and two specifications with additional control variables, these being our Goods variable (Model II), and Birth/Death/Wedding variable (Model III). The estimates are presented as incident rate ratios (IRRs). The coefficient estimates represent the percentage change (increase or decrease) in the dependent variable depending on whether the estimate is above or below unity (one). Thus, a coefficient of 1.2 indicates that in the case of a binary variable a change from zero to one increases membership or activity counts by 20%.

Individuals in JW congregations have on average 37% greater membership counts than the two mainline religions; the other denominations are indistinguishable in membership counts. Thus, we see some evidence of a positive relationship between membership and donations for JWs. For the other regressors, we find that owning an Australian house increases membership counts by 44%. An increase in the level of education raises membership counts by 12%. This confirms earlier evidence; home ownership is associated with lower mobility and investment in education is associated with a lower rate of time preference and both of these encourage investment in social capital (Glaeser, *et al*., 2002; Huang, *et al*., 2009). The age coefficients do not suggest any particular significant relationship between membership counts and age. Samoans and Cook Islanders are more likely to have higher membership counts than Tongans. Interestingly, there is no difference between individuals in metropolitan and regional locations; the Riverina variable is not significant. Glaeser, *et al*., (2002) suggest the greater proximity in urban/metropolitan areas leads to increased social connections as documented in earlier sociological studies (Festinger, *et al*., 1950), based on US evidence. The impact of the employment indicators suggests that free time is a crucial factor; full-time employment restricts membership compared to those providing home duties (omitted category). Finally, the total number of migrants associated with the individual's household, both in Australia and in other

[20] *Membership* is measured by the number social organizations to which the individual belongs, and *activity* is measured by the number of social organizations in which they declared they were 'active'. See Table 4 and Appendix Table A.1 for the descriptive statistics on volunteering.

Table 7
Negative Binomial Regression Results for Volunteering
(Incident Rate Ratios (IRRs); Robust standard errors)

Variables	Model I		Model II		Model III	
	Membership	Active	Membership	Active	Membership	Active
Own Australian house	1.437***	1.766***	1.427***	1.829***	1.429***	1.820***
	(0.166)	*(0.287)*	*(0.166)*	*(0.298)*	*(0.164)*	*(0.292)*
Male	1.179	0.981	1.171	1.006	1.143	0.976
	(0.156)	*(0.173)*	*(0.155)*	*(0177)*	*(0.150)*	*(0.170)*
Age	0.977	0.945*	0.976	0.945*	0.988	0.956
	(0.027)	*(0.030)*	(0.027)	(0.029)	(0.029)	(0.032)
Age squared	0.999	1.000	1.000	1.000	1.000	1.000
	(0.0003)	*(0.0003)*	(0.0003)	(0.0003)	(0.0003)	(0.0004)
Samoan	1.392***	1.207	1.386***	1.236	1.394***	1.259
	(0.189)	*(0.223)*	*(0.189)*	*(0228)*	*(0.188)*	*(0.226)*
Cook Islander	1.378**	1.053	1.384**	1.027	1.400**	1.065
	(0.209)	*(0.209)*	*(0.210)*	*(0.201)*	*(0.208)*	*(0.203)*
HH head's years of education	1.121***	1.054*	1.119***	1.059**	1.116***	1.053**
	(0.026)	*(0.030)*	*(0.026)*	*(0.030)*	*(0.026)*	*(0.030)*
Total migrants	1.034*	1.074***	1.035*	1.071***	1.021	1.052***
	(0.021)	*(0.023)*	*(0.021)*	*(0.023)*	*(0.019)*	*(0.022)*
Employed f/t	0.621**	0.484***	0.626**	0.471***	0.638**	0.493***
	(0.130)	*(0.121)*	*(0.131)*	*(0.115)*	*(0.136)*	*(0.122)*
Employed p/t	0.660	0.443***	0.664	0.443***	0.665	0.458**
	(0.172)	*(0.150)*	*(0.173)*	*(0.147)*	*(0.175)*	*(0.151)*
Other employment	0.760	0.673	0.761	0.656	0.760	0.661
	(0.198)	*(0.224)*	*(0.198)*	*(0.213)*	*(0.197)*	*(0.207)*
Living in regional area (Riverina)	1.019	1.244	1.017	1.263	1.032	1.302
	(0.140)	*(0.226)*	*(0.140)*	*(0.226)*	*(0.144)*	*(0.235)*
Catholic	*0.820*	*0574***	*0.824*	*0.558***	*0.825*	*0.564***
	(0.115)	*(0.122)*	*(0.116)*	*(0.120)*	*(0.113)*	*(0.120)*
Jehovah's Witness	*1.367***	*1.054*	*1.372***	*1.028*	*1.361***	*1.014*
	(0.209)	*(0.242)*	*(0.211)*	*(0.230)*	*(0.215)*	*(0.233)*
Other churches	*1.306*	*1.834***	*1.316*	*1.756***	*1.142*	*1.488**
	(0.263)	*(0.430)*	*(0.264)*	*(0.418)*	*(0.224)*	*(0.360)*
Goods	-----	-----	1.099	0.596***	1.046	0.542***
			(0134)	*(0.121)*	*(0.127)*	*(0.107)*
Weddings/Births/Deaths	-----	-----	-----	-----	*1.752****	*2.019****
					(0.254)	*(0.374)*
Constant	0.018***	0.064***	0.018***	0.069***	0.014***	0.054***
	(0.014)	*(0.059)*	*(0.014)*	*(0.062)*	*(0.011)*	*(0.051)*
IV estimates – coeff Jehovah's Witness/Others	*0.807* *(0.722)*	*2.245** *(1.334)*				
Number of observations	*757*	*757*	*757*	*757*	*757*	*757*
Log likelihood	*-791.82*	*-584.46*	*-791.57*	*-581.08*	*-783.81*	*-573.95*

*** p<0.01, ** p<0.05, * p<0.1 Omitted cases Tongan, Providing Home duties, Protestant.

countries, has some marginally significant impact on membership counts and could be indicative of greater social networks that might encourage or facilitate membership of organizations.

In the second column of Table 7 we repeat the estimation for activity in organizations. Again, the minority religions are linked to higher activity counts but this time the *Other* denomination category has a far greater impact, suggesting an 83% increase in activity counts, compared to Protestants. It is also noted that activity counts are 43% lower for Catholics, a difference that has been noted in previous research. Age seems to have some negative impact on activity in organizations, and employment, either full or part-time, restricts activity. In unreported results, we repeated the regressions for memberships and activities with the inclusion of the income variable as in the previous regressions. It was found that this variable was not significant in either case and did not materially affect the results for the other covariates.

It could be argued that unobserved personality traits affect the propensity to join minority religions and social/community groups. Hence, the positive impact of these variables could be related to an omitted variable bias. We attempt to overcome this by using an instrumental variable (IV) procedure. Finding an instrument that is correlated with denomination but not related to membership and activity in organizations is difficult. We exploit a variation in the administration of our interviews. Our survey recorded the time of interview. There are distinct differences in the time of interviews between the religious groupings; those from JWs and *Other* denominations were interviewed later in the day and this difference is significant at the 1% level. The difference does not appear related to employment differences as the proportion employed on a full-time basis is only slightly greater in the mainline religions and not statistically significant. Hence, the timing of the interview seems unlikely to be related to the work schedules which could affect propensity to be a member of or active in a social organization. For brevity we present only the results for the denomination variable, the IV estimates are presented below the IRR estimates of the regression results for Model I in Table 7.[21] Using the one instrument we had to group together the two denomination variables, JWs and *Other* denominations. The coefficient estimates are no longer incident rate ratios as these cannot be obtained using the instrumental variable procedure. The IV estimates for membership counts suggest that the minority religions are associated with higher counts but the estimate is

[21]The full set of results is available from the authors on request.

not statistically significant. However, the IV estimate for active counts is positive and significant. This provides some evidence to suggest that the denomination effects are not driven predominantly by some unobserved personality characteristics of the individuals.

In Model II we see that the *Goods* variable has no impact on membership counts; membership alone does not require use of time and resources, except perhaps for membership fees that may exist in some cases. The results for activity counts indicate a strong negative impact from increased consumption activity (*Goods* IRR = 0.596). The time required to generate income to acquire these goods and/or the time to enjoy them seem to come at the expense of activity in social groups. This negative effect more than counteracts any positive relationship between expenditure and activities that could be generated through access to cheaper goods because of increased access to social networks and purchasing from fellow members of a particular group. Model III includes the *Births/Deaths/Weddings* variable as an additional regressor. We see a different impact for this variable compared to *Goods* as it leads to increased membership and activity. This might be as a direct result of the event; a new family member or child may cause the household head to become involved in a community organization. Alternatively, the events may increase contacts with new social networks. The net impact seems to overcome any of the negative effects of additional expenditure for the event, as was the case for giving overseas.

5. Conclusions

A study of the giving behavior of international migrants from less developed countries is of special interest given the competing claims on their earnings from churches and other organizations in both their host and home countries. These claims are in addition to the ongoing expectations to provide what is often the main means of livelihood for their home country households and coping with rising aspirations of their immediate host country household members associated with the higher standard of living in the host country.

Our unique household dataset, compiled from a customised survey of Pacific island migrants in Australia, allowed for an analysis of all forms of charitable giving, and across the wide range of religious denominations prevalent among Pacific island communities. We were also able to explore the influence of other factors on charitable giving, such as expenditure on secular consumption and residence in metropolitan *versus* regional locations, which previous research had found relevant to charitable giving.

We find that discretionary expenditure reduces giving, especially to home country organisations. Remittances seem to be resilient to spending pressures, where altruism and investment motives may be the drivers to ensure these flows are maintained. Households who are part of home country social or community groups in the host country may face added pressures to manage resources as membership promotes all forms of giving.

The propensity to give does not, in general, appear to differ across our selection of religious denominations, but the amount given does. Migrants from Catholic congregations give less than Protestants, while the smaller, non-mainline congregation of Jehovah Witnesses gave more to their congregations and other community organizations in their home countries, indicative of stronger ties to home communities and the institutional structure of the religion. We also uncover a similar pattern for volunteering insofar as Catholics are less likely to be active in community organisations, and non-mainline churches, in this case various evangelical congregations and Mormons, are more active than Protestants.

In this study we found evidence to suggest that giving increases as household income rises and households belonging to home country social groups and associations give more than other households. It could be that other claims on household's resources suffer because of these commitments, such as lower investment in the human capital of the next generation. Lee (2011) noted that second-generation Tongan migrants in Australia were becoming increasingly resentful of their parents' charitable giving to the wider, transnational Tongan community; giving which they perceived to be at the expense of their own welfare and education. It would then be of interest to gauge whether the extent of variation in actual educational attainment is related to differences in charitable giving and discretionary expenditure.

Another consideration this raises is the possible effect of migrant households' giving on intergenerational transmission of giving behaviors. There is evidence from a US study of a positive correlation between parents' and adult children's giving behaviors (Ottoni-Wilhelm *et al*., 2008). However, if the parents' giving to far-removed 'others' in the migrants' home countries generates resentment on the part of second-generation migrants, intergenerational transmission of generosity would seem less likely to occur. This is another aspect of migrants' remittances and charitable giving worthy of further investigation.

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Appendix

Volunteering Descriptives and Ordered Probit Results

In Table 4 we provided the frequency distributions for the number of non-church groups to which individuals (household heads) belonged, and, claimed to be 'active'. The range of clubs and societies and the corresponding percentages are shown in Appendix Table A.1.

Table A.1
Membership of and Active in Volunteering Groups

Social Organisations	% Household Heads	
	Member	Active
Community groups (eg. home country group/club)	21.70	16.34
Civic groups (eg. Neighbourhood watch)	22.20	13.10
Social group/ club	11.50	60.10
Political group/ organisation	0.52	0.26
Parents/ school association	7.32	4.18
Tenants/ residents association	0.65	0.26
Volunteer service	11.76	6.54
Pensioner's group	1.31	1.05
Scouts/ Guides	0.78	0.39
Professional organisation	2.75	1.57
Sports club	24.71	15.95

In the discussion of modelling the count data on volunteering it was noted that given the high concentration of observations in the zero to three range, the results from a count data model could be biased. As a robustness check we estimated ordered probit models with four categories for the dependent variable, where the fourth category combined all observations with a count of three or more. The results for the average marginal effects are given in Appendix Table A.2. It can be seen from these that the same variables are statistically significant and their effects of a very similar order of magnitude.

Table A.2
Ordered Probit Regression Results on Volunteering
(*Average marginal effects on probability at least one activity; Robust standard errors*)

Variables	(1) Membership	(2) Active	(3) Membership	(4) Active	(5) Membership	(6) Active
Own Australian house	0.170***	0.154***	0.166***	0.159***	0.166***	0.156***
	(0.036)	(0.035)	(0.036)	(0.034)	(0.036)	(0.034)
Male	0.011	0.035	0.007	0.029	0.000	0.037
	(0.041)	(0.038)	(0.041)	(0.038)	(0.041)	(0.038)
Age	0.004	0.004	0.004	0.004	0.007	0.002
	(0.008)	(0.007)	(0.008)	(0.007)	(0.008)	(0.007)
Age squared	-0.000	0.000	-0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Samoan	0.111***	0.042	0.109***	0.045	0.110***	0.047
	(0.040)	(0.039)	(0.040)	(0.038)	(0.040)	(0.038)
Cook Islander	0.088**	0.010	0.090**	0.005	0.090**	0.008
	(0.044)	(0.041)	(0.044)	(0.041)	(0.044)	(0.041)
Education (years)	0.031***	0.009	0.030***	0.010*	0.029***	0.009
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Total migrants in HH	0.014**	0.021***	0.014**	0.021***	0.011*	0.017***
	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)
Employed full-time	-0.128*	-0.141**	-0.127*	-0.144**	-0.122*	-0.137**
	(0.068)	(0.058)	(0.068)	(0.057)	(0.069)	(0.057)
Employed part-time	-0.121	-0.165**	-0.119	-0.166**	-0.122	-0.167**
	(0.083)	(0.076)	(0.083)	(0.075)	(0.083)	(0.074)
Other employment	-0.048	-0.067	-0.048	-0.068	-0.048	-0.068
	(0.086)	(0.074)	(0.086)	(0.072)	(0.086)	(0.072)
Living in regional area (Riverina)	-0.002	0.041	-0.001	0.040	0.002	0.044
	(0.042)	(0.038)	(0.042)	(0.038)	(0.041)	(0.038)
Catholic	0.003	-0.080*	0.005	-0.084*	0.002	-0.085*
	(0.043)	(0.044)	(0.043)	(0.044)	(0.043)	(0.044)
Jehovah's Witness	0.149***	0.055	0.152***	0.049	0.151***	0.049
	(0.050)	(0.048)	(0.050)	(0.047)	(0.050)	(0.047)
Other churches	0.119**	0.173***	0.125**	0.163***	0.087	0.129**
	(0.060)	(0.051)	(0.060)	(0.051)	(0.059)	(0.052)
Goods			0.051	-0.097**	0.036	-0.114***
			(0.040)	(0.041)	(0.040)	(0.041)
Weddings/Births/Deaths					0.178***	0.153***
					(0.044)	(0.042)
Observations	757	757	757	757	757	757

*** p<0.01, ** p<0.05, * p<0.1. Omitted cases: Tongan; Providing home duties; Protestant