

Competition for Donations and the Sustainability of Not-for-profit Organisations

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Abstract

Purpose

The financial sustainability of NPOs is problematic, both individually and in economy-wide terms, as they do not produce commercial saleable outputs. Instead they raise funds by either relying on government grants or competing for private donations. Sustainability of NPOs becomes an even greater issue when governments reduce their grant giving in times of stress - precisely the time when calls on NPOs' resources increase. Consequently the present purpose is to understand the nature of competition for private donations that occurs between Not-for-Profit Organisations (NPOs). This competition occurs because NPOs do not produce commercially viable outputs and therefore rely on donations.

Design/methodology/approach

The research asks the question, do donation raising expenditures by NPOs increase donations or do they damagingly divert donations from other NPOs? Using Australian data, competition between NPOs for donations is analysed using a modified oligopoly market model. NPO fundraising expenditures are central to this model, but other factors, including unpaid-volunteers, organisational size and age are also explanatory variables in determining success in fund raising. NPOs concerned with human welfare, other than specialised aged care, are the primary focus of this paper, although other NPOs such as those concerned with animal welfare, science and the arts are also modelled.

Findings

Crucially a NPO's fundraising expenditure has a direct and positive impact on its level of donations. A major influence on level of donations is the presence of volunteers within an NPO. There seems to be an interesting reciprocal relationship between the effect of size and age of organisations on their donations and the effect on fundraising. Critically for sustainability, NPOs competing for funds are established as having a negative effect on the level of donations to other NPOs with similar functions.

Keywords: Not-for-profit; Oligopoly (Cournot) theory, Organisational sustainability; Social support; Provision; Replacing Government; Volunteers.

1. Introduction

Community-based Not-for-profit organisations (NPOs) are often considered to have a better understanding of individual and community assistance needs than government or other agencies (Lyons 2001). The community in this case is most often not defined by geographical locality, but a communality of interest such as aged care, children, animal welfare or the arts. NPOs are also considered more able to provide these services in a flexible and more directed manner than government welfare services (Lyons 2003). And partly through their use of unpaid volunteers and non-profit agenda, they can also provide reasonable services more cheaply than for-profit organisations. Here a NPO is defined as an organisation that does not create or distribute profits to owners (Hansmann 1987; Weisbrod 1988).

However, the sustainability of NPOs, both individually and as a sector, is dependent on their success in garnering private donations and government grants. The present focus is how NPOs compete for private donations and the impacts of that competition upon the level of donations. The research question then asked is, do the donation raising expenditures by individual NPOs increase donations or can they also be diverting donations away from other NPOs? The model designed to answer this question utilises an econometric analysis of financial reports of 48 Australian NPOs over the period 2001-2008, but the model is intended as applicable beyond Australia. The size of donations to the NPOs in this study appears in Table 1. The cut-off in 2008 allows a benchmark for future studies on the impacts of the Global Financial crisis and Eurozone crisis.

[INSERT HERE TABLE 1]

2. Discussion and the Literature

A major problem of sustainability for most NPOs and philanthropic organisations is that they do not produce commercial outputs. Financial pressures are such that NPOs that do produce saleable commodities, such as sports clubs, stock exchanges, insurance clubs and community banks, frequently convert to for-profit organisations, abandoning their social functions. This process is sometimes described as privatisation or demutualisation (Adams & Armitage 2004). This allows greater freedom to compete and, in particular, to raise capital. Those that do not produce saleable commodities do not have this option, and are the main concern of this research. This is because it is the NPOs that provide vital services such as disaster, family welfare and counselling, and emergency relief, which do not have the trading option (Chetkovich & Frumkin 2003). By providing both the public and private goods that caring societies desire, they have perennial difficulties of sustainability.

Conversely recent research has found that market competition for donations can be a primary instrument for not-for-profit organisations to achieve more disciplined operations. (Glaeser 2003; Thornton & Belski 2009). Yet, it is not clear how donor markets might be influenced by variations in organisational efficiency as information to donors requires disclosure. Thus NPOs in selective disclosure can emphasise their ability to use donations to have sustainable operations (Castaneda, Garen & Thornton 2007). Certainly NPOs in Australia advertise the proportion of donated funds that go to recipients rather than administration (Dolnicar & Lazarevski 2009; Tyler 2005).

Consequently, there is a need to understand the factors affecting the sustainability of NPOs and the value of using empirical models in studying them. However, sustainability studies are virtually absent in the charitable sector (Weerawardena, McDonald & Sullivan 2010). It is believed that the material used here represents one of the first studies of financial sustainability of not-for-profit organisations and highlights the value of both accounting and economic analysis of organisations operations. Financial sustainability issues are compounded by the existence of competition for funds among charities operating in the same areas (Parsons 2003; Trussel & Greenlee 2004; Trussel & Parsons 2008) it has been argued that competition for funds diminishes sustainability (Lyons 2001; Weerawardena et al. 2010).

For charitable and philanthropic organisations, sustainability can be defined as how to ensure their continuity of services to community (Weerawardena, McDonald & Sullivan Mort 2010). The many recent global humanitarian crises have placed the charitable sector under stress. An increasing number of not-for-profit organisations are seeking donations from a broader section of the community (Salamon, Hems & Chinnock 2000). Thus competition for funds is both deepening and broadening.

In reality NPOs consist of incompletely altruistic individuals (members, employees and donors). This means that each NPO has preferences separate from those solely program services going directly to recipients. These preferences, separated by administrative expenses and salaries in financial accounts, may also influence donations (Andreoni & Petrie 2004; Gordon & Khumawala 1999; Imada 2003). Thus, the NPOs compete for donations via: (i) fundraising expenditures and (ii) the proportion of donations going to recipients. Fundraising expenditures are assumed either to inform, induce or enhance the utility donors obtain from the output of the NPO (Webber 2003). Yet in the short term at least, increased fundraising expenditures reduce the proportion of resources available for program services. In addition, because donors have preferences with respect to recipient groups, the greatest donations competition is likely to exist within groups with similar objectives and missions (Frumkin & Kim 2001). Consequently it is very important to investigate sub-samples (groups) of similarly focussed NPOS to determine, (a) the effectiveness of NPOs' competition for donations and (b) to find the determinants of donations related to the accountability of NPOs (Castaneda et al. 2007). Thus it is implicitly assumed that the services provide recipients with similar benefits across all NPOs in a given group.

3. Theoretical Framework

If an NPO's objective is solely to maximise benefits to its intended recipients it is, therefore, an altruistic organisation. If two existing charitable organisations are both altruistic organisations, they focus on maximising their combined, aggregate private donations to increase dollars to recipients. This implies avoiding donation competition if they regard each other as equally efficient in collection and disbursement. In reality, the behaviour of the charitable organisations is complex and not all behaviour will be completely altruistic. If they place a value upon their own continued existence, for altruistic reasons or not, NPOs can be forced into survival strategies which potentially reduce net benefits to recipients. In such situations donors can to a degree observe the behaviour of the organisations and make judgements about whether the NPOs are more interested in maximising benefits to recipients or to the NPO. Donors can observe organisational behaviour through expenditure patterns in fundraising activities,

administration costs and programs. Donors can then compare two charitable organisations to decide which focuses on achieving an acceptable balance between internal costs and programs. In practice, therefore, the organisations are competing for donations from donors, and their level of success affects their sustainability.

The market competition for charitable donations in Australia is oligopolistic, oligopoly defined as a market with a small number of competitors. Most importantly for current purposes this means the actions of one oligopolist has discernible impacts on every other organisation competing (for donations) in the same market. This means each oligopolistic organisation has to be strategically reactive to what other organisations do. The result is interdependence of their decisions (Amenomori 1998). Economic theory contains many models of oligopoly but all have the features of strategic interdependence and reaction. This study utilises the Cournot theory of oligopolistic competition, (named after the 19th century French economist Antoine Augustin Cournot, 1801-1877) modified specifically to NPOs and competition for donations. In the Cournot model specified here, the NPOs compete through their individual level of donation raising expenditure. The reason for use of the Cournot framework is that most other oligopoly models use price as the strategic variable. Price based models are clearly inappropriate as NPOs do not charge prices. If all NPOs in a given group provide recipients with similar services, the non-differentiated product Cournot oligopoly model is appropriate. The precise form of the model used for estimation is specified later in this section.

Within each budgeting period, usually annual, an NPO has to choose the percentage of its income including previous donations, that it will use to raise further donations. Assuming the NPOs' fundraising activities/expenditure has an effect on donations, then its donations should be affected by competitors' fundraising activities/expenditures or the fraction of its fundraising expenditures to total competitors' fundraising expenditures. As an example, suppose there are only two NPOs that are competitors for donations. They can choose to either compete or cooperate in the donations market place. If they cooperate, to operate as a fund-raising monopoly, each charitable organisation chooses a fundraising expenditure designed to maximise the total net donations received. If this behaviour increases total dollars to recipients, it affects the charities' utility favourably (Hochman & Rodgers 1969). In other words each charitable organisation is interested in increasing the dollar benefits for recipients, and their control over the recipients' benefits would be determined by the level of coordination between them (Dimand 1988). Conversely, if they compete for donations, the fundraising expenditure of each organisation can be expected to increase, in mutually destructive competition, with little benefit to aggregate level of donations. More formally, two charities competing for donations as well as trying to increase total dollar value going to recipients can be expressed as:

$$U_R(R_i, R_j), \text{ and } R_i = F(R_j) \text{ and } R_j = G(R_i).$$

where:

R = output dollars going to a recipient;

$F; G$ = Fundraising and Grant functions;

U_R = utility (dollar benefits going to) of the recipients

i, j = competing charitable organisations i and j .

The characteristics of these charities may be considered as:

either:

(i) cooperating with each other and, thereby, acting as a monopoly in the donor market, so that the optimum of utility $Max U_R$ is where F is optimum $F = F_i + F_j$;

or

(ii) competing with each other, i.e. the two charities compete as a duopoly.

The model assumes that charitable organisation i 's total donation is affected by its own fundraising expenditures at competition period and donation period, when fundraising activities are taking place; and competitors' fundraising activities and ratio of competitors' fundraising expenditures on its own fundraising expenditure are also influenced at the same time. The same is true of organisation j . However, as discussed above, the charitable organisation i 's size (using fixed assets), age, volunteers and the relative effect of competitors' size on its own size may have an effect on the following time (annual) period.

4. Methodology and Data

The majority of studies in the charitable sector have analysed donor behaviour (Andreoni & Payne 2003; Khanna, Posnett & Sandler 1995; Khanna & Sandler 2000), with very few focused on the NPOs and their behaviour, most probably because of difficulties in acquiring useful data. In addition, previous organisational studies have mainly used data for the US or the UK. Their results are mixed (Marcuello & Salas 2001; Tinkelman & Mankaney 2007).

The data are financial and non-financial variables obtained from the annual reports of 44 NPOs that operated in Australia for the eight financial years from 2001 to 2008. In Australia, the same Accounting Standards are applied to NPOs as to the profit sector and since 2005, these have merged with the International Accounting Standards. This has made NPO financial reports a reliable source of information for the research. The choice of the eight year time period provides scope for the inclusion of data that is both representative and helps avoid distortion that can come from one or two years at a specific point, e.g a trough or a peak, in the business cycle. It also avoids the impacts of the 2008-9 Global Financial Crisis. With respect to the eight year time period selected, since 2001 the Australian Government has required Australian NPOs to publish their annual reports. The NPOs were selected from the Business Review Weekly's (BRW) "Top 200 NPOs" list, as at July 2006 (BRW 2006)¹. All universities, schools and hospitals that appeared in the 200 list were excluded creating a list of 65 NPOs. These 65 were approached for further essential financial information and 44 responded. These were no major structural changes either within or between the NPO sample organisations during this period.

To avoid inappropriate subjective choices, the grouping taxonomy used is that of the International Classification of Nonprofit Organisations (ICNPO). The classification groups from ICNPO are: 1. Culture & Recreation; 2. Education & Research; 3. Health; 4. Social Services; 5. Environment; 6. Development & Housing; 7. Law, advocacy and politics; 8. Philanthropic intermediaries and voluntarism promotion; 9. International/Global; 10. Religion; 11. Business and professional associations, unions; 12 Not elsewhere classified. This study includes neither unions nor religious societies as NPOs. The Australian sample of not-for-profit organisation has a variety of objectives and missions and many organisations provide expanded support and services for the

¹ A list of the organisations is available from the principal author.

wellbeing and welfare of people. The largest group of social services is disaggregated into three: (i) humanitarian, if it provides emergency services, and (ii) disability, if their services are focused on disability group of people, and (iii) welfare group. There are a few organisations that look after animal welfare and these are classified as animal. There is no organisation specialising in environment or education in the Australian sample.

The Humanitarian, Global and Disability groups and these are the focus of this paper. The Welfare group relies heavily on government funding and therefore the results are not as relevant to analysis of competition and fundraising. Consequently this study sees a grouping of Australian charity samples as (See Table 1 in Appendix):

1. All (aggregated) group;
2. Aged care, focused on national (e.g. Uniting Care Queensland, Angli-care NSW);
3. Humanitarian and Family, focused on national (Salvation Army Eastern & South);
4. Global, focused on international emergency aid (Oxfam, World Vision);
5. Disability, focused on national (Endeavour, Royal Institute for Deaf and Blind) ;
6. Animal, focused on national (RSPCA, WWF Australia);
7. Culture and Science and not elsewhere classified (Diabetes Australia); and
8. Rural and outback based (Royal Flying Doctor).

The number of organisations in each group are as follows: all combined for *comparative purposes* (44 organisations for 8 years); *Aged Care* ($n=13=104$); *Humanitarian & Family* ($n=6=40$); *Global* ($n=5=40$); *Disability* ($n=11=88$); *Animal* ($n=3=24$); *Culture & Science* ($n=3=24$); and *Rural* ($n=3=24$).

To provide a quick view of the sample data of charitable organisations, Table 1 presents the total donations from the sample of Australian charitable organisations for the financial years 2001 to 2008 in descending order from the total donation of the financial year of 2008. Since 2001, total donations show steady growth. There is a notable gap between the top three, World Vision, Uniting Care Queensland and the Salvation Army (East and South), and the other organisations in the amount of total donations. The top three received in total around \$50 million in 2008, two times greater than the average (\$27.6 million in 2008). If the top three organisations are excluded, average total donations reduce to \$10.7 million in 2008. These data show one of the major characteristics of an oligopoly, i.e. a market with multiple stakeholders dominated by a few very large organisations.

One major difference between the present study and the most similar of previous studies (Castaneda et al. 2007; Posnett & Sandler 1989) is that they employed the fundraising competition index variables. Such aggregation would be fatal to the present study, since it would render meaningless the competition variables, which should vary both within and between like charity groups.

The samples were also disaggregated into geographical groups. The geographical groupings are based on the address of the head office of NPOs when they have several branches spread out into different states in Australia. The geographical groupings were to determine if the competition is based upon locality rather than purpose of the organisation. The argument here was that competition may be between groups within a given spatial locality rather than between those having a similar function.

The research conducted empirical modelling on the basis of modified oligopolistic competition of the donations market. Estimation of the model used Two Stage Least Squares (2SLS) on three simultaneous equations. The estimated equations are as follows:

ShrD Equation:

$$\text{ShrD}_t = \beta_0 + \beta_1 \text{ShrF}_{it} + \beta_2 \text{RelAge}_{it} + \beta_3 \text{ShrA}_{it} + \beta_4 \text{ShrV}_{it} + \beta_5 \text{ShrV}_{it-1} + I + \varepsilon; \quad (1)$$

$$\frac{D_{it}}{\sum_i D_{it}} = f\left(\frac{F_{it}}{\sum_i F_{it}}, \frac{A_{it}}{\sum_i A_{it}}, \frac{V_{it}}{\sum_i V_{it}}, \frac{V_{it-1}}{\sum_i V_{it-1}}, \text{Re LAGE}_t\right)$$

ShrF Equation:

$$\text{ShrF}_t = \beta_0 + \beta_1 \text{ShrD}_{it} + \beta_2 \text{ShrA}_{it} + \beta_3 \text{RelAge}_{it} + \beta_4 \text{ShrV}_{it} + \beta_5 \text{ShrV}_{it-1} + I + \varepsilon; \quad (2)$$

$$\frac{F_{it}}{\sum_i F_{it}} = f\left(\frac{D_{it}}{\sum_i D_{it}}, \frac{A_{it}}{\sum_i A_{it}}, \frac{V_{it}}{\sum_i V_{it}}, \frac{V_{it-1}}{\sum_i V_{it-1}}, \text{Re LAGE}_t\right)$$

ShrV Equation:

$$\text{ShrV}_t = \beta_0 + \beta_1 \text{ShrD}_{it} + \beta_2 \text{ShrA}_{it} + \beta_3 \text{RelAge}_{it} + \beta_4 \text{ShrF}_{it} + \beta_5 \text{ShrV}_{it} + \beta_6 \text{ShrV}_{it-1} + I + \varepsilon \quad (3)$$

$$\frac{V_{it}}{\sum_i V_{it}} = f\left(\frac{D_{it}}{\sum_i D_{it}}, \frac{A_{it}}{\sum_i A_{it}}, \frac{F_{it}}{\sum_i F_{it}}, \frac{V_{it-1}}{\sum_i V_{it-1}}, \text{Re LAGE}_t\right)$$

I = Instrumental variables = $f(\text{ShrA}_{it}, \text{RelAge}_{it}, \text{ShrD}_{it}, \text{ShrF}_{it-1}, \text{ShrA}_{it-1}, \text{ShrV}_{it-1})$

where:

Share of donations (ShrD) = the proportion of total donations of charity i (D_{it}) to total donations of all charities in the same industry at year t ($\sum D_{it}$);

Share of fundraising expenditure (ShrF) = the proportion of fundraising expenditure of charity i (F_{it}) to total of fundraising expenditure of all charities in the same industry at year t ($\sum F_{it}$);

Share of fixed assets (ShrA) = the proportion of fixed assets of charity i (A_{it}) to the total fixed assets of all charities in the same industry at year t ($\sum A_{it}$);

Share of the number of volunteers (ShrV) = the proportion of the number of volunteers of charity i (V_{it}) to total the number of volunteers of all charities in the same industry at year t ($\sum V_{it}$); and Relative age of organisation (RelAge_{it}) = the proportion of the difference between organisational age of charity i (AGE_{it}) and average of organisational age of all charities in the same industry at year t (AvAGE_t).

The results of a family of OLS models (Omura & Forster 2012) found very high relationships between variables such as the natural log of fundraising expenditure of charity i (F_i) and the natural log of ratio of F_i to competitors' fundraising expenditure (F_i/F or F_i/F_j) at 0.998, the natural log of fixed assets of charity i (A_i) and the natural log of ratio of A_i to competitors' fixed assets (A_i/A or A_i/A_j) at 0.999. These create concern over multicollinearity. To avoid multicollinearity, the 2SLS model, a variation of the Family OLS model was developed. The variables of shares were estimated

combining both variables, $F_i/(F_i+F_j)$, $A_i/(A_i+A_j)$, $V_i/(V_i+V_j)$ [V = no. of volunteers], into one variable.

5 Findings

[INSERT Table 2 HERE]

Table 2 is a summary of three 2SLS estimation equation results, focusing on the main statistically significant results for eight function groups. However, in the Appendix, the detailed results showing all variables can be seen in Table A2.

The Humanitarian & Family group

The results of the Humanitarian industry group show that the number of volunteers has a statistically significant and positive impact on the level of donation and vice versa. Not surprisingly the number of volunteers in the current year is also significantly related to the number of the previous year. This is expected to be largely through loyalty and experience and commitment to the objectives of the organisation. The age of the organisation also has positive impact on the fundraising expenditures. (Appendix Table A2).

The Global group

The statistically significant results of the Globally oriented group show that the fundraising expenditure has a positive effect on the level of donations and vice versa, while the age of the organisation has a negative effect on the level of donations but a positive effect on the fundraising expenditures. As with the Humanitarian group, the volunteers in the previous year also have a positive effect on the level of donations and the size of organisations has a positive effect on the volunteers in the current year.

The Disability group

This has similar results to the Global group, the share of donations received in this group being significantly related to the share of fundraising expenditures and vice versa. What is different is that., none of the other variables in this equation is statistically significant.

Other groups

The Aged Care group

Overall in the Aged Care function group, which is heavily subsidised by government funding, the coefficients on each of 6 independent variables in each of three share equations present mixed results. It is believed the subsidisation may affects the behaviour of donors, who may also be mainly from individuals and families with need of aged care for relatives. The only significant results indicate that, for the charitable organisations in the Aged Care group, the organisational size has a positive effect on the level of donations, whereas the age of organisation has a positive effect on the fundraising expenditure. The number of volunteers in the previous year has a positive effect on the number in the current year.

The Animal group

The results for this group indicate that organisational size has a positive effect on the level of donations but a negative one on fundraising expenditure, whereas age has a negative effect on donations. However, it has a positive one on fundraising expenditure. The number of volunteers is positively affected by the number of volunteers in the previous year. The annual reports of some animal groups suggest volunteers may require considerable training, which may affect numbers (Irvine 2006).

The Science group

The results of the Science group show that the size of organisations has statistically significant and positive effect on the fundraising expenditures. This result indicates some level of support for the Cournot oligopoly model. Similarly to many other groups, the number of volunteers in the previous year has a significant and positive effect on the current number.

The Rural group

The results of the Rural group show that the size and age of organisations (ShrA and RelAGE respectively) have statistically significant but negative effects on the share of donations (ShrD). The age of organisations has significantly positive effect on the fundraising expenditures. The number of volunteers in the previous year has a significantly positive effect on the volunteers in the current year.

The Aggregated (All) group

In the All group, the only significant result is the strong effect of the number of volunteers in the previous year on those in current year, as in many other groups. The main characteristics of independent variables, ShrD, ShrF and ShrV in each of the shares equations have a mostly positive but insignificant correlation. Although not significant, the results suggest that for the charitable organisations in the All Groups group, the donations of each organisation may be affected by the level of fundraising expenditure. It is worth noting that the number of volunteers has a positive effect on both donations and fundraising expenditures. Even though the results for the number of volunteers in the current year are not significant, the share of the volunteer equation shows an extremely strong follow-on from the previous year's volunteers.

Importantly, the fact that this group exhibits poor results is consistent with the hypothesis that charitable organisations compete for funds with similar function charities.

These Group summaries show that the coefficient on the share of donations (ShrD) is significantly positive in the Global and Disability industry groups, and positive in all other industry groups, except the Humanitarian group. The share of volunteers (ShrV) is significantly positive in Humanitarian groups and positive in the All, Animal and Rural groups, but negative in all other groups. However, there is one notable difference, the coefficient on share of volunteers as being positive in most of all the industry groups, except the Global and Rural groups. Overall these results, taking the groups as a whole rather than individually, suggest some weak conformity to aspects of an amended Cournot oligopoly model.

Finally, as expected from a stock equation, the volunteers equation (ShrV) shows an enormously strong follow-on from the previous year's volunteers. This pattern has been seen in other groups (All, Welfare, Animal and Science). This group indicates no support for the Cournot model, because none of other variables are significant. The consistent with the previous results that there is the effect of the fundraising expenditures of the not-for-profit organisations on donations.

6. Implications and Conclusions

The study examined the effect of the competing fundraising expenditures of the not-for-profit organisations on donations in this kind of market. Within groups with similar functions, NPOs in Australia compete in a modified form of (Cournot) oligopolistic market, dominated by a few, larger organisations. In oligopolistic markets, each not-for-profit organisation generated donations through its own fundraising expenditures. However, it was found that one NPO can be negatively affected by the fundraising efforts of its counterpart NPOs in the same charity sector. It was also found that very large fundraising expenditure has a diminishing impact on receipts both at the aggregate and individual NPO level, although always with a direct positive effect on donation income for individual NPOs. And there is also shown to be a positive (but diminishing) impact from their competitors' fundraising expenditures on total donations to all members of a group. The exception was the Animal NPO group but the reason for this is not known.

One implication of the size effect of the large NPOs is that it leaves less room for small organisations to compete for donations. This result is not surprising but it does suggest the use of an (almost) free input, i.e. the volunteers, is an important donation raising strategy that favours larger NPOs. Thus one of the important issues considered was the role of volunteers in competition between organisations. They appear to be loyal to organisations, donating not only time but funds to charities. One of the strongest results, significant in most groups, is the flow-on effect of volunteers from the previous year into the current year. In the Humanitarian sector there is significant and positive impact of volunteers on donations. This is not surprising, given that the Humanitarian group consist of Australian based group helping poor and disadvantaged people at a local level such as homeless, families under stress and people fighting with addictions. Here there are wide ranging opportunities for volunteers in e.g. to work directly with clients, run fundraising activities such as working at second hand shops or help in administration. Consequently a major conclusion indicating a potential major sustainability strategy for NPOs, is to focus on volunteer numbers, even if this is initially at the expense of fundraising efforts.

If size or age of the organisation is perceived by the donors as detrimental to the level of donations, the organisation's response to a stagnant or declining level of donations is to increase fundraising expenditure. Perhaps longer established organisations find they have to increase the level of fundraising in order to be sustainable and survive in a competitive market (Tinkelman & Mankaney 2007). It may be useful to NPOs to more specifically target donations-to-volunteer raising strategies (Kingma 2006). As previously indicated reasons for this include: (i) volunteers are often donors; (ii) volunteers can be involved in fundraising, without a corresponding and visible increase in fund-raising expenditures; and (iii) the number of volunteers is a signal to donors that the organisation is vibrant and that the organisation plays a role that others, i.e. the volunteers, value. Ideally it would be the benefits to the recipients that potential donors

should use to judge the organisations but these are often impossible for donors to gauge and volunteers seem to provide a measure of the credibility of organisations.

Consistent with a homogeneous output or slightly differentiated output Cournot equation, donations increase as fundraising expenditure increases, and the use of a priori specified groups based on the charities' identified areas of operation increased the efficacy of the Cournot modelling. Methodologically it is vital to note that the groups were constructed a priori and not constructed as 'best-fit' groups on the basis of post-examination of empirical results. Not surprisingly some groups overlap with other groups. Thus disability groups can have large component of medical research in their activities, while some rural groups' activities overlap welfare, humanitarian and disability groups. This crossover of interest may affect interpretation of the results.

Interpretation of Australian NPOs as an oligopolistic structure dominated by the larger organisations has been reinforced by this analysis. This suggests stability and stifling of innovation. However, change in NPO donations market can be brought about by external circumstances, just in the commercial world. However, after the Boxing day Tsunami at the end of 2004, the organisations running major appeals for relief operations, such as World vision, Red Cross, Oxfam, and Caritas, recorded large increases in donations in 2005. However, donation levels of smaller groups supporting on-going local welfare either stayed the same or decreased. Subsequently, the larger groups maintained donations at higher levels than before 2005. This suggests the awareness of organisations' services gained during crisis served as advertisement and encouraged continued support. It also suggests strong donor loyalty as well as volunteer loyalty. This response increases the domination of some large organisations reinforcing the oligopoly model. The crisis factor may affect donation giving but it is not a variable included in the econometric modelling in this study but its effect is suggested by the raw data and needs further study

Several areas of further research are suggested by the present modelling. One, already indicated, is to increase the sophistication of both the theoretical and empirical modelling. This can include trying to increase the role played by the assets of the organisation, an area mostly overlooked in competitive market modelling. This is particularly appropriate in not-for-profit organisations, and this can be argued in two opposing ways. Another is that greater assets suggest that the not-for-profit organisation has a greater ability to be effective and therefore donors may move towards it. Another is that greater assets imply that the donations may go to building up the organisation rather than to those who should be the recipients of the charity.

Table 1: Donations in Australian Charitable organisations (A\$'000)

Australian Charities	2008	2007	2006	2005	2004	2003	2002	2001
1 World Vision	317524	321962	293266	314530	206869	209809	153003	141198
2 Uniting Care QLD.	276895	209159	276895	178894	7316	5903	6610	5949
3 Salvation South	107487	102361	50679	51604	60625	58135	59420	50033
4 Salvation Eastern	82333	106167	99339	94308	89883	81887	78006	79947
5 A RedCross	55490	38480	49289	134517	28682	31829	34485	35886
6 Oxfam Australia	44519	41015	45293	35118	22167	19886	15678	12137
7 The Smith Family	42834	33328	37230	31061	26530	27412	23322	25565
8 Care Australia	39480	28670	34458	41852	39358	37348	43752	50920
9 Endeavour	28731	28848	24518	30940	23529	22103	24132	23986
10 Caritas Australia	21557	20365	19360	35096	12433	12216	12626	11901
11 Mission Au	20268	17838	21884	18814	15141	13655	13336	14277
12 WWF Australia	15352	12814	12221	11626	8915	6218	5060	4081
13 RSPCA NSW	15143	9917	17023	15954	18091	8146	5632	4463
14 The Spastic NSW	14796	13345	10950	7975	10612	10778	6553	5763
15 RI forDeaf & Blind	13501	18722	13851	11258	11333	10154	12512	10788
16 Royal Fly.Doctor SE	11503	9791	8133	7078	6105	5721	4696	3748
17 Wesley Mission Syd	10668	13924	11196	10624	10545	10290	10387	7711
18 Mul.Sclerosis Vic	10446	15984	5052	3876	5472	4969	4108	4583
19 Royal Rehab. Syd	8635	11310	9387	9205	9771	7642	8514	7797
20 St Vinent Society VIC	8414	6772	6417	5078	4997	6762	6393	6578
21 Anglicare NSW	6910	7359	7397	7028	9257	5978	5547	6927
22 Anglicare Vic.	6153	4455	7069	4719	7584	5185	3282	3321
23 Silver Chain	6138	4242	4265	2930	3257	3144	2748	2634
24 Yooralla Society Vic	4838	4427	3998	3371	4718	5240	3901	4079
25 Cerebral Palsy QLD.	4622	3416	3531	2771	3467	2963	3467	3298
26 AMANA Living	4502	4576	4246	4124	142	223	684	660
27 Scope Vic	4366	4270	2996	3261	2967	4612	3393	3657
28 Uniting Care Vic	3872	788	6012	3400	119	125	75	156
29 Royal FreemasonsVic.	3454	2501	6140	1722	1490	1681	885	1671
30 Southern CrossVic.	3333	1525	1057	1307	2183	1604	1613	1224
31 Zoological Parks	3196	5628	4085	8674	5550	3167	2723	2375
32 St Vincent Society WA	3102	2853	2966	3041	2130	964	977	1357
33 Melbourne Citymission	2426	2557	2969	3402	2816	1824	1739	2965
34 The Benevolent Society	2072	1380	2015	1668	1756	1380	1815	1721
35 Benetas	1759	1094	1766	315	818	296	891	668
36 Villa Maria Society	1544	674	709	492	812	1148	981	575
37 Anglicare SA	1518	1892	1695	1253	1159	1176	1230	1226
38 Activ Foundation	838	683	1503	904	900	299	70	423
39 Baptist CommunityVic.	653	1205	641	1514	394	736	486	461
40 Minda	522	351	182	264	6818	9729	5672	5407
41 Churches of Christ Care	435	330	411	151	702	505	858	50
42 Anglicare Australia	418	354	220	297	1275	257	209	185
43 Diabetes Australia	238	429	174	94	730	524	447	462
44 Annecto	92	84	120	71	66	195	183	167
Total	1212577	1117845	1112609	1106181	679483	643818	572101	552978
Average	27559	25406	25287	25140	15443	14632	13002	12568

NB In 2005, 2. Uniting Care Queensland merged several separate welfare divisions into one group.

Table 2: Summary of Results of ShrD, ShrF and ShrV

Table10a:	All	Aged Care	Humanitarian	Global	Disability	Animal	Culture&Science	Rural
ShrD equation								
ShrF (t-stat)	0.559 (1.231)	0.770 (1.130)	-0.360 (-1.536)	1.247 (30.233)***	0.759 (5.190)***	0.652 (1.603)	1.626 (0.821)	0.297 (0.749)
ShrV (t-stat)	6.418 (0.859)	-1.521 (-1.069)	1.863 (4.036)***	-0.375 (-0.965)	-0.453 (-0.485)	1.535 (0.370)	-4.407 (-0.716)	6.295 (1.588)
Table 10b								
ShrF equation								
ShrD (t-stat)	0.115 (0.169)	1.172 (1.082)	-2.766 (-1.520)	0.773 (30.102)***	1.317 (5.190)***	0.936 (1.443)	0.261 (0.552)	3.291 (0.766)
ShrV (t-stat)	8.953 (0.566)	1.932 (1.506)	5.173 (1.582)	0.270 (0.863)	0.597 (0.511)	0.624 (0.127)	2.119 (1.233)	-20.736 (-0.680)
Table 10c								
ShrV equation								
ShrD (t-stat)	0.009 (0.155)	-0.534 (-0.902)	0.535 (4.022)***	-0.107 (-0.338)	-2.207 (-0.485)	0.038 (0.550)	-0.133 (-0.547)	0.159 (1.595)
ShrF (t-stat)	0.060 (0.581)	0.446 (1.386)	0.193 (1.589)	0.127 (0.299)	1.676 (0.512)	0.011 (0.266)	0.399 (1.615)	-0.047 (-0.678)

(ShrF) and Share of Volunteers (ShrV).

ShrF: Share of Fundraising expenditures, ShrA: Share of fixed assets of organisations

ShrV: Share of total numbers of Volunteers (V)

RelAge: Relative Age of each organisation in each group

ShrV_1: Lagged share of volunteer (V) of each organisation in each group

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Appendix

Table A1 Sample of not-for-profit organisations

This table presents location of a head office of sample not-for-profit organisations in Australia

State	Number	Australian Charities	
ACT	1	Care Australia	
	2	Diabetes Australia	
NSW	3	Anglicare NSW	
	4	Caritas Australia	
	5	Mission Australia	
	6	Royal Flying Doctor South Eastern	
	7	Royal Institute for Deaf and Blind Children	
	8	Royal Rehabilitation Centre Sydney	
	9	RSPCA NSW	
	10	Salvation Eastern	
	11	The Benevolent Society	
	12	The Smith Family	
	13	The Spastic Centre of NSW	
	14	Wesley Mission Sydney	
	15	WWF Australia	
	16	Zoological Parks and Gardens Board	
	Queensland	17	Cerebral Palsy League of Queensland
		18	Churches of Christ Care Q
19		Endeavour Foundation	
20		Silver Chain	
21		Uniting Care Queensland	
South Australia	22	Anglicare SA	
	23	Minda	
Victoria	24	Anglicare Australia	
	25	Anglicare Vic.	
	26	Annecto (change from WIN service)	
	27	Australian Red Cross	
	28	Baptist Community Care Victoria	
	29	Benetas	
	30	Melbourne City mission	
	31	Multiple Sclerosis Society of Victoria	
	32	Oxfam Australia	
	33	Royal Freemasons' Homes of vic.	
	34	Salvation South	
	35	Scope (Vic)	
	36	Southern Cross Care Victoria	
	37	St Vincent de Paul Society VIC	
	38	Uniting Care Victoria	
	39	Villa Maria Society	
	40	World vision of Australia	
	41	Yooralla Society of Victoria	
	Western Australia	42	Activ Foundation
43		Anglican Homes Western Australia	
44		St Vincent de Paul Society WA	

Aged Care (n= 13=104); *Humanitarian & Family* (n =5=40); *Global* (n =5 = 40); *Disability* (n =11= 88); *Animal* (n=3=24); *Culture &Science* (n=4=56); and *Rural* (n=3=24).

Table A2: Two-stage least squares estimation for Humanitarian group

Dependent Variables	ShrD	ShrF	ShrV
β_0	0.065*	0.181*	-0.035*
(t-stat)	(2.710)	(2.328)	(-2.697)
Shr A	-0.118	-0.331	0.064
(t-stat)	(-0.590)	(-0.515)	(0.611)
RelAGE	0.086	0.240***	-0.046
(t-stat)	(1.730)	(3.958)	(-1.925)
ShrD		-2.766	0.535
(t-stat)		(-1.520)	(4.022)
ShrF	-0.360		0.193
(t-stat)	(-1.536)		(1.589)
ShrV	1.868***	5.173	
(t-stat)	(4.038)	(1.582)	
ShrV_1	-0.780*	-2.162	0.418***
(t-stat)	(-2.011)	(-1.339)	(3.501)
S.E. of regression	0.118	0.328	0.063
Observations	42	42	42

NOTE: Dependent variables are Share of donations (ShrD), Share of fundraising expenditure (ShrF) and Share of Volunteers (ShrV).

ShrF: Share of Fundraising expenditures, ShrA: Share of fixed assets of organisations

ShrV: Share of total numbers of Volunteers (V)

RelAge: Relative Age of each organisation in each group

ShrV_1: Lagged share of volunteer (V) of each organisation in each group

Table A3: Two-stage least squares estimation for Global group

Dependent Variables	ShrD	ShrF	ShrV
β_0	-0.051***	0.042***	0.011
(t-stat)	(-4.839)	(5.291)	(0.649)
Shr A	-0.127	0.114	0.553**
(t-stat)	(-0.556)	(0.631)	(2.974)
RelAGE	-0.189 ***	0.147***	-0.010
(t-stat)	(-5.588)	(5.348)	(-0.172)
ShrD		0.773***	-0.107
(t-stat)		(30.102)	(-0.338)
ShrF	1.274***		0.127
(t-stat)	(30.233)		(0.299)
ShrV	-0.375	0.270	
(t-stat)	(-0.965)	(0.863)	
ShrV_1	0.484**	-0.369*	0.370
(t-stat)	(2.429)	(-2.206)	(1.706)
S.E. of regression	0.043	0.034	0.034
Observations	35	35	35

NOTE: Dependent variables are Share of donations (ShrD), Share of fundraising Expenditures (ShrF) and Share of Volunteers (ShrV).

ShrF: Share of Fundraising expenditures, ShrA: Share of fixed assets of organisations

ShrV: Share of total numbers of Volunteers (V)

RelAge: Relative Age of each organisation in each group

ShrV_1: Lagged share of volunteer (V) of each organisation in each group

Table A4: Two-stage least squares estimation for Disability group

Dependent Variables	ShrD	ShrF	ShrV
β_0	0.065	-0.085	0.143
(t-stat)	(2.206)	(-2.423)	(0.583)
Shr A	0.155	-0.205	0.343
(t-stat)	(0.980)	(-1.045)	(0.539)
RelAGE	0.023	-0.031	0.052
(t-stat)	(0.754)	(-0.721)	(0.363)
ShrD		1.317***	-2.207
(t-stat)		(5.190)	(-0.485)
ShrF	0.759***		1.676
(t-stat)	(5.190)		(0.512)
ShrV	-0.453	0.597	
(t-stat)	(-0.485)	(0.511)	
ShrV_1	-0.103	0.136	-0.227
(t-stat)	(-0.205)	(0.202)	(-0.146)
S.E. of regression	0.072	0.094	0.158
Observations	77	77	77

NOTE: Dependent variables are Share of donations (ShrD), Share of fundraising Expenditures (ShrF) and Share of Volunteers (ShrV).

ShrF: Share of Fundraising expenditures, ShrA: Share of fixed assets of organisations

ShrV: Share of total numbers of Volunteers (V)

RelAge: Relative Age of each organisation in each group

ShrV_1: Lagged share of volunteer (V) of each organisation in each group

Table A5: Two-stage least squares estimation for Aged Care group

Dependent Variables	ShrD	ShrF	ShrV
β_0	-0.019	0.030	-0.013
(t-stat)	(-0.279)	(0.441)	(-0.360)
Shr A	0.893*	-1.094	0.508
(t-stat)	(2.563)	(-1.654)	(1.319)
RelAGE	-0.436	0.566***	-0.259
(t-stat)	(-1.195)	(4.611)	(-1.627)
ShrD		1.172	-0.534
(t-stat)		(1.082)	(-0.902)
ShrF	0.770		0.446
(t-stat)	(1.130)		(1.386)
ShrV	-1.521	1.932	
(t-stat)	(-1.069)	(1.506)	
ShrV_1	1.437	-1.828	0.949***
(t-stat)	(1.052)	(-1.469)	(27.530)
S.E. of regression	0.156	0.199	0.102
Observations	91	91	91

NOTE: Dependent variables are Share of donations (ShrD), Share of Fundraising Expenditures (ShrF) and Share of Volunteers (ShrV).

ShrF: Share of Fundraising expenditures, ShrA: Share of Fixed Assets of organisations

ShrV: Share of total numbers of Volunteers (V)

RelAge: Relative Age of each organisation in each group

ShrV_1: Lagged share of Volunteers (V) of each organisation in each group

Table A6: Two-stage least squares estimation for Animal group

Dependent Variables	ShrD	ShrF	ShrV
β_0	-0.690	1.083	0.010
(t-stat)	(-1.376)	(2.986)	(0.227)
Shr A	2.176	-2.893	-0.054
(t-stat)	(2.150)*	(-2.956)**	(-0.507)
RelAGE	-0.960	1.237	0.022
(t-stat)	(-2.540)**	(3.281)**	(0.468)
ShrD		0.936	0.038
(t-stat)		(1.443)	(0.550)
ShrF	0.652		0.011
(t-stat)	(1.603)		(0.266)
ShrV	1.535	0.624	
(t-stat)	(0.370)	(0.127)	
ShrV_1	-1.293	-0.916	0.977***
(t-stat)	(-0.325)	(-0.194)	(41.298)
S.E. of regression	0.078	0.110	0.011
Observations	21	21	21

NOTE: Dependent variables are Share of donations (ShrD), Share of fundraising Expenditures (ShrF) and Share of Volunteers (ShrV).

ShrF: Share of Fundraising expenditures, ShrA: Share of fixed assets of organisations

ShrV: Share of total numbers of Volunteers (V)

RelAge: Relative Age of each organisation in each group

ShrV_1: Lagged share of volunteer (V) of each organisation in each group

Table A7: Two-stage least squares estimation for Culture and Science group

Dependent Variables	ShrD	ShrF	ShrV
β_0	-0.008	0.035	-0.012
(t-stat)	(-0.070)	(0.613)	(-0.494)
Shr A	-0.561	0.331***	-0.132
(t-stat)	(-0.814)	(3.104)	(-1.713)
RelAGE	0.586	-0.107	0.061
(t-stat)	(1.325)	(-0.305)	(0.368)
ShrD		0.261	-0.133
(t-stat)		(0.552)	(-0.547)
ShrF	1.626		0.399
(t-stat)	(0.821)		(1.615)
ShrV	-4.407	2.119	
(t-stat)	(-0.716)	(1.233)	
ShrV_1	4.375	-1.850	0.913***
(t-stat)	(0.813)	(-1.030)	(5.556)
S.E. of regression	0.268	0.116	0.051
Observations	21	21	21

NOTE: Dependent variables are Share of donations (ShrD), Share of fundraising Expenditures (ShrF) and Share of Volunteers (ShrV).

ShrF: Share of Fundraising expenditures, ShrA: Share of fixed assets of organisations

ShrV: Share of total numbers of Volunteers (V)

RelAge: Relative Age of each organisation in each group

ShrV_1: Lagged share of volunteer (V) of each organisation in each group

Table A8: Two-stage least squares estimation for Rural group

Dependent Variables	ShrD	ShrF	ShrV
β_0	0.045	-0.146	-0.007
(t-stat)	(1.219)	(-0.501)	(-0.917)
Shr A	-0.946	3.115	0.150
(t-stat)	(-2.3984)*	(0.697)	(1.483)
RelAGE	-0.205	0.676	0.033
(t-stat)	(-2.209)*	(3.291)***	(1.212)
ShrD		3.291	0.159
(t-stat)		(0.766)	(1.595)
ShrF	0.297		-0.047
(t-stat)	(0.749)		(-0.678)
ShrV	6.295	-20.736	
(t-stat)	(1.588)	(-0.680)	
ShrV_1	-4.961	16.353	0.788***
(t-stat)	(-1.294)	(0.666)	(6.198)
S.E. of regression	0.241	0.795	0.038
Observations	21	21	21

NOTE: Dependent variables are Share of donations (ShrD), Share of fundraising Expenditures (ShrF) and Share of Volunteers (ShrV).

ShrF: Share of Fundraising expenditures, ShrA: Share of fixed assets of organisations

ShrV: Share of total numbers of Volunteers (V)

RelAge: Relative Age of each organisation in each group

ShrV_1: Lagged share of volunteer (V) of each organisation in each group

Table A9: Two-stage least squares estimation for All Groups group

Dependent Variables	ShrD	ShrF	ShrV
β_0	0.001	0.007	0.000
(t-stat)	(0.175)	(0.794)	-0.216
Shr A	-0.300	-0.674	0.069
(t-stat)	(-0.449)	(-0.521)	(1.385)
RelAGE	-0.018	0.006	0.000
(t-stat)	(-2.170)	(0.440)	(-0.140)
ShrD		0.115	0.009
(t-stat)		(0.169)	(0.155)
ShrF	0.559		0.060
(t-stat)	(1.231)		(0.581)
ShrV	6.418	8.953	
(t-stat)	(0.859)	(0.566)	
ShrV_1	-5.709	-7.630	0.870***
(t-stat)	(-0.870)	(-0.545)	(19.777)
S.E. of regression	0.118	0.156	0.017
Observations	308	308	308

NOTE: Dependent variables are Share of donations (ShrD), Share of Fundraising Expenditures (ShrF) and Share of Volunteers (ShrV).

ShrF: Share of Fundraising expenditures, ShrA: Share of Fixed Assets of organisations

ShrV: Share of total numbers of Volunteers (V)

RelAge: Relative Age of each organisation in each group

ShrV_1: Lagged share of Volunteers (V) of each organisation in each group