

Abstract

There is a long standing debate within third sector studies concerning the potentially negative relationship between state funding and volunteer numbers within voluntary sector organisations (VSOs). This debate has previously suffered from a lack of quantitative evidence at the sector level. The research presented here helps to fill this gap by exploring the relationship amongst larger charities in England and Wales (with an annual income over £500,000). An exploratory data analysis based approach was used to explore a relatively underutilised dataset on charity funding sources, built by TSRC and NCVO from charity accounts in England and Wales. Overall the findings appear to offer qualified support for the idea that reliance upon state income is related to a lower prevalence of volunteers within VSOs, even after controlling for size and industry. The complete picture is complicated, however, as those with no state funding at all appear less likely to use volunteers, and to use them in lower numbers.

What is the relationship between state funding and voluntary sector organisations' use of volunteers?

Introduction

This article contributes to a long standing, cross-national debate within voluntary sector studies. At its core, it concerns whether state funding morphs and shapes the voluntary sector organisations (VSOs) that receive it into something quite different to their peers. In particular, this study addresses whether state funding undermines the use of volunteers within VSOs.

Much of the literature on state funding is negative about the organisational environment for volunteers that it engenders. The results presented here make a significant research contribution by testing these ideas using quantitative data at the sector wide level for the first time. In doing so they build upon an existing qualitative evidence base by exploring how the relationship between state income and volunteer numbers stands over many cases. The study makes a second contribution by utilising a relatively untapped data source on the financial characteristics of charities in England and Wales. The relevant analysis was undertaken as part of an in depth cross-sectional, exploratory data analysis on the dataset. It therefore provides one of the first published examples of this data source's potential for multivariate analysis within voluntary sector studies.

The findings of the study suggest that although the overall picture is complex, there are some small to moderate relationships which are consistent with the prevailing pessimistic outlook in the literature. The interpretation of the results requires nuance. The findings provide some support for those concerned that state contracting may provide insufficient space and support for volunteering. This suggests that more could be done to help break down any barriers to the inclusion of volunteers in contracted service delivery. On the other hand, the cross-sectional results cannot determine for certain that the relationship is causal, and the strength of the relationships involved is in any case only modest. There is not much evidence, therefore, to support the more theoretical concerns that the voluntary sector is losing its voluntarist identity or that state funding and the use of volunteers are inherently incompatible.

The following sections begin by outlining the debates and political context surrounding state funding of the voluntary sector. A review of existing empirical research on the relationship between state funding and volunteer levels is also presented. The methods of the study are discussed, including a critical consideration of the data source used and an outline of the exploratory approach to data analysis. The findings are then presented, followed by a discussion of how the results can be interpreted in the light of the reviewed debates on state funding.

A voluntary sector?

This research is primarily concerned with organisations that deliver welfare services to individuals. Although this focus arguably neglects other forms of voluntary action (Rochester, 2013), it is where much of the controversy over the voluntary sector's relationship with the state seems to reside. Commentators have long debated the role of various sectors within the 'mixed economy of welfare', which exists to meet the welfare needs of society (Buckingham, 2011; Evers, 1995; Evers and Laville, 2004).

In addition to the state and the market sectors, a range of alternative terms and definitions have been used to elucidate the idea of a 'third sector', sometimes entirely via its relationship with the other sectors (Alcock, 2010). They often place it either as a form of residual category (Pestoff, 1992), or as a distinctive hybrid realm where rationalities and discourses associated with other sectors mix and compete (Evers, 1995; Evers and Laville 2004; Brandsen et al., 2005). Various attempts have also been made, however, to define the sector positively on the basis of unique characteristics or some kind of cohesive sectoral core (Alcock, 2010). Perhaps the most frequently used definition of this type is the structural operational definition developed by Salamon and Anheier (1997). This provides five key criteria to identify non-profit organisations. Besides the non-distribution constraint, non-profits are defined as independent, self-governing, formally organised, and crucially for our purposes here, with at least some form of voluntary input (Kendall and Knapp, 1996). As Corry (2010) points out, voluntarism is the truly positive and non-residual element within this definition.

Voluntarism, either in the form of volunteers or donative income, can be seen as part of the unique 'logic' of the voluntary sector. It suggests that services are delivered to others not for profit or statutory requirements, but voluntarily as part of a shared organisational mission or moral framework (Brandsen et al., 2005; Buckingham, 2011). This is one reason why the term 'voluntary sector' is so commonly adopted. Billis (2010) identified the 'associational' realm as the true locus of voluntarism. Associations are positively defined on the basis that they are owned by their members, governed through internal democracy, driven by their distinctive mission and rely on donated income and volunteers to survive. Any organisations or groups that deviate substantially from this model are hybrids, such as charitable agencies with paid staff or income from taxation.

The implication of placing voluntarism at the core of what defines the voluntary sector, is that if these organisations come to rely less on volunteers and other voluntary resources, then they become collectively less distinct as a result. Concern with this potential blurring of sector boundaries is not just conceptual. There are long standing normative and political differences about what is the appropriate role of the voluntary sector within the 'welfare mix', especially in relation to the state. In the UK concern increased sharply with the introduction of greater contracting within the health and social care field (Richardson, 1993; Lewis, 1993; Taylor, 1996). As far back as 1993, Knight warned

of consequences such as "lost directions, low morale and spoiled self-worth" (p. xi). Similar debates have played out internationally, particularly in the US, where contracting to non-profits has an even longer, and equally controversial history (Lewis, 1996; Smith and Lipsky, 1993; Kramer, 1994).

In the UK context policy developments under New Labour accelerated these concerns as the amount of state funding to the voluntary sector ballooned across different service fields. Carmel and Harlock (2008) claimed the sector and its activities had been rendered 'governable' and opposition neutralised to create a pliant pool of contractors for the Government's outsourcing agenda. The focus on outsourcing and 'Open Public Services' (HMG, 2011) continued under subsequent Conservative led governments, but without the accompanying rhetoric around partnership and voluntary sector exceptionality. Austerity has also arguably tilted the balance of power further towards the state (Independence Panel, 2013).

Underlying these concerns are theoretical divergences over what the role of the voluntary sector *ought* to be regarding welfare delivery. Writers such as Seddon (2007) have argued that voluntary action and state funding are inherently incompatible, and favour instead of a model in which individuals take collective responsibility for their own welfare independently of the state. This harks back to historically popular view of voluntary action propagated by actors such as the Charity Organisation Society in the Victorian era (Knight, 1993; Harris, 2010). William Beveridge (1948, Alcock, 2016) famously argued that outside the welfare state, voluntary action should retain a separate and protected sphere of influence, offering specialist and additional services largely via self-help and mutualism.

Others such as the National Coalition of Independent Action (NCIA), which campaigned against contracting from 2006 to 2016, also favoured broadly separate spheres of operation. They preferred a model where the state takes primary responsibility for welfare services and TSOs provides additional services that the "government cannot, will not, or should not do" (2015, p.1). This model also has a historical heritage in the form of the 'extension ladder' model favoured by the Webb siblings (Knight, 1993). The NCIA rejected contracting entirely as part of a neoliberal agenda to shrink the state via cuts and privatisation (Benson, 2014; NCIA, 2013), and claim it leaves TSOs as "subservient" (2015, p.9).

Both these perspectives fall into what Young (2000) terms a 'supplementary' model of the voluntary sector. They resonate with theories of state failure, which identify the voluntary sector as 'filling in the gaps' in state provision. For example, Weisbrod (1975) notably argued that TSOs would emerge to meet unmet demands for public goods made by minority groups, which could not be agreed to democratically by the majority.

In contrast, 'The Panel on the Independence of the Voluntary Sector', which reported on the voluntary sector state relationship between 2011 and 2016, favoured a more complementary model (Young,

2000). They argued that overlap between the sectors is inevitable given shared interests and areas of operation (Independence Panel, 2011). Instead of separation, they favoured partnership working in which the rights and independence of voluntary organisations are properly protected (2015). This conception of cooperative state-TS relations echoes Salamon's (1987) ideas on voluntary sector failure. Salamon argued that the voluntary sector provides an initial response to welfare needs but requires the state to compensate for its uneven provision and to ensure universal minimum standards.

Whether or not commentators allow a role for fruitful collaboration between the state and voluntary sector, there is a shared concern that the wrong kind of interaction and a loss of independence may be undermining what makes the VS 'special' (Independence Panel, 2011, p.5), 'valuable' (Rochester, 2013), or even jeopardising the characteristics that constitute its "soul" (Billis and Harris, 1996, p.244). Prominent voices in voluntary sector studies have warned that voluntary organisations are increasing susceptible to external pressures and restrictions from the state (Milbourne and Cushman, 2014; Milbourne, 2013). Rochester (2013) warns that alarm over the direction of travel is not just driven by concerns over independence, but about the possible loss of a distinctive identity for voluntary organisations. The common, underlying implication is that if the voluntary sector loses those characteristics which make it distinctive, it may also lose what makes it valuable to begin with (Macmillan, 2013).

Evidence review

In order to assess where new research could add the most value into this long standing debate, a review of existing evidence on the impact of state funding on charities was conducted. The relationship between state funding and volunteers emerged as an important element of the findings, and forms the main focus within this article.

Literature was identified largely via snowball referencing, using an existing review of voluntary sector service delivery by Macmillan (2010) as a useful starting point. A mixture of peer reviewed journals and books were included in the review, but also reports by government agencies, infrastructure bodies and other interested stakeholders. Many, but not all, focussed on contracting specifically and in the area of health and social care. At one end of the spectrum of literature, there is a range of sometimes quite polemic commentary which provides testable claims, but no additional empirical research. At the other there are an increasing number of high quality qualitative studies which outline the difficulties that dealings with the state can pose for TSOs (Buckingham, 2012; Bennett, 2016).

Quantitative evidence on the voluntary sector in general, on the other hand, is very limited (Westal, 2009, UKSA, 2012). The NCVO Almanac (2017) provides only aggregate estimates of univariate voluntary sector characteristics. Surveys are usually sub-national and small sample (Rees, 2008; Leman, 2007), and the two major national surveys (Ipsos MORI, 2008, 2010) do not allow researchers to identify the amount of state funding charities received, only whether they received any at all. This means that no quantitative studies were found in the review which explicitly explored the bivariate relationship between state funding and volunteer levels.

The literature which does exist on the relationship between state funding and volunteering within charities provides an almost entirely negative outlook. Authors such as Seddon (2007) assert that contracts marginalise volunteers in favour of paid staff and managers. This appears to be backed up by some case studies, particularly of larger, publically funded organisations (Chater, 2012). Alcock et al. (2004) recorded a general move towards paid staff amongst health and social care contractors, with some using no volunteers at all. Buckingham (2012) found voluntarism was low in the organisations most integrated into the contracting regime. Russel and Scott (1997) claimed that recruitment and retention became increasing difficult due to the shift towards contracts.

According to authors such as Hedley and Davis Smith (1994), the reason for the conflict is that volunteers are forced to fit a commercial model never designed with their participation in mind. They are included in service delivery as an afterthought, if at all (Morris, 1999). The flexibility of volunteers, one of its inherent strengths, is described as fitting poorly with the specificity inherent in contracts. Similarly, Russell and Scott (1997) blamed marginalisation on a delivery orientated and

managerialist environment. Lewis (1996) drew particular attention to the difficulties involved for voluntary managers and trustees, due to the bureaucracy of contracts.

Closely associated with the perceived marginalisation of volunteers has been a link drawn between contracting and professionalization. Increases in state funding have by and large coincided with increases in the paid VS workforce between 2010 and 2011 (DCLG, 2011). Chater (2008) suggests that the demands of contracts require qualified and specialist paid staff. Smith and Lipsky (1993) claim state funding facilitates the training and salaries of staff in the form of additional resources.

Finally, it is possible that the influence of state funding has a less readily measurable influence, by changing the type of role that volunteers perform. The role of volunteers may become more formalised, or require increased training, supervision or a higher work load (Scott and Russel, 2001; Hedley and Davis Smith, 1994). Although the increased responsibility may sometimes be welcome (Lewis, 1996), the driver is often seen as the requirements of regulation and the threat of litigation (Leat, 1995; Chater, 2008). Frontline roles may be left to paid, professional staff, while volunteers take on administrative or support roles (Alcock et al., 2004; Smith and Lipsky, 1993).

Some have pushed back against a narrative of conflict, however. In the US, Young (ref) claimed that there was no evidence for Smith and Lipsky's claims that volunteers were marginalised, especially given increasing volunteering rates in the US at the time. The UK citizenship survey similarly found increasing volunteering rates generally between 2001 and 2011 (DCLG, 2011). The literature on contracting generally also suggests that the impact of state funds may be not be equal across the voluntary sector. A wide range of researchers have identified overall size as both a major predictor of the amount of state funding received, and a mediating factor in its influence over the VSO (Buckingham, 2012; Morris, 1999, 2000; Chater, 2008; Independence Panel, 2013). Cunningham (2008) suggested that larger organisations were able to be much more assertive with their funders and resist external demands. Partly this is a matter of capacity. Greater size allows organisations to cross subsidise or pool funds from different services, and allows specialist staff to be recruited for dealing with the demands of contracts (Kramer and Grossman, 1987).

Another major mediator of state funding's impact may be the form the funding relationship takes (Rees, 2013; Buckingham, 2009). Many authors distinguish between grant funding, associated with unrestricted giving, and contracting, associated with tighter specification. To Benson (2014), the distinction is one of control, where grant funding allows TSOs to provide their own independent vision outside of the state orthodoxy. There is concern; therefore, that contractual funding appears to have risen hugely since 2001 while grant funding has declined (NCVO, 2017). Others, however, suggested that the distinction was always confusing and that there is inevitably a spectrum of specification and enforceability (Audit Commission, 2007; Chater, 2008).

The results of the review; therefore, clearly suggest that in some cases state contracting leads to the marginalisation of volunteers. This may, however, be mediated by the type of state funding involved and the size of the recipient. The gaps in our knowledge largely concern how widely this phenomenon occurs, how large the impact is across the sector as a whole, and how much it might be mediated by other factors. There is therefore a clear need for a rigorous, sector-wide quantitative analysis, which this study seeks to address.

Methods

The dataset

To provide new quantitative evidence on the relationship between state funding and volunteering it was first necessary to identify an appropriate dataset. The most obvious starting point is the charity register, which contains financial and organisational characteristics drawn from charities' annual returns to the Charity Commission. Although there are service delivery organisations in the voluntary sector which are not charities, the overlap is considerable and UK charity law at least allows us to be confident that charities are not for-profit. Most registered charities with an income over £10,000 are expected to submit a return, and those with an income over £500,000 are expected to submit the additional, more detailed information required in 'Part B' (Charity Commission, 2013a). This latter group are referred to throughout this study as 'Part B charities'.

The main problem with the register as a research tool is the difficulty identifying disaggregated income sources. Young et al. (2010, p. 167) described this as a 'problem that plagues researchers' on both sides of the Atlantic. Partly to address this issue, the Third Sector Research Centre (TSRC), and the National Council of Voluntary Organisations (NCVO), began investing in a new dataset in 2010, built from information taken directly from charity accounts. Lines from a representative sample of charity accounts were digitalised into an electronic format by the Centre for Data Digitalisation and Analysis and then classified into income sources using a mixture of human and automatic processes (Kane et al. 2013). This data source therefore has the considerable advantage of being able to identify state income levels for all sizes of charity, as well as being linkable to the information contained in the charity register. It is currently significantly under-utilised; however, with only a few univariate studies currently published to date (Clifford and Mohan, 2010; Mohan and McKay 2017).

Although a substantial improvement on previous data sources or no data at all, there are some limitations to the data source that warrant further discussion. First, the quality of the data is dependent on the quality of the accounts. The degree of external scrutiny charities are subjected to varies by size:

- only those with over £250,000 of annual income are expected to follow the 'Statement of Recommended Practice' (SORP) and submit accounts on an accrual basis (CC, 2005, 2015);
- only those with an income over £1 million are expected to be externally audited.

This allows charities' a great deal of latitude in terms of how they record their accounts, especially for the smaller organisations. As a result, Morgan (2011) argues that that analysis should be limited to SORP compliant accounts and only conducted longitudinally, using within case comparisons. This would obviously limit severely the questions researchers could address.

The variation in the information recorded also makes classification of the accounts data difficult, especially as due to the scale of the task most allocations needs to be automated using key word

matching. The details of the processes used are outlined in Kane et al. (2013), but needless to say insufficient or ambiguous information introduces severe challenges. This is especially the case if some of the conceptual distinctions are complex to begin with, such as distinguishing between grants and contracts.

Nevertheless, the difficulties should not be overstated. Not all cases are ambiguous. Looking at the analysis within size groups also allows us to explore the more reliable data for the larger charities separately. The dataset creators suggest that the results are consistent existing data sources where comparable, and the dataset is certainly the best available for this type of research within the UK, and arguably globally. It is certainly far better than relying on supposition or a highly limited number of cases.

The sample

Due to the costs of the extraction process, the 'accounts dataset' is a sample of all 160 thousand charities (excluding exempt and excluded charities). To reduce the uncertainty of statistical estimates the sample is stratified by income, essentially a log₁₀ scale (see Table 1). Weights were used to ensure unbiased estimates during the analysis using the 'Survey Package' in R (Lumney, 2010), with a finite population correction applied when necessary. Larger charities have generally been sampled more heavily in order to prioritise the estimation of totals for the NCVO Almanac (Kane et al. 2013).

In order to focus on the population of organisations most relevant to the debates outlined earlier, a few further restrictions were imposed on the sample. As specified in the literature review, debates on state funding generally concern organisations providing 'welfare' or 'human' services. As such organisations that only offer infrastructure support to other organisations were excluded. So too were organisations that have no operations within the UK.

In line with the structural operational definition of the voluntary sector (Salamon and Anheier 1997), organisations that were either not fully self-governing or independent were excluded, such as non-departmental government bodies or NHS charities (as suggested in Hands et al., 2008). Charities were not excluded on the basis of their level of voluntary input, however, as this constitutes the outcome variable of interest for this study. Nor were any organisations removed on the basis that they do not fit with a common or public understanding of charities, as in Kendall and Knapp's (1996) 'narrow definition' of the voluntary sector or NCVO's (2012) 'general charities' restriction. This means that any registered housing associations and independent schools remain in the sample.

A final restriction is not theoretical, but relates to the size of charity for which representative data is available. The latest year of the accounts data currently publically available is for the financial year 2012-2013. This was also the first year that the relevant question on volunteers was made compulsory by the Charity Commission. This appears to have substantially improved the amount of data available

for the Part B charities, with an income over £500,000, 95% of which provided valid data. Unfortunately, the data made available for the smaller charities is mainly missing until the year 2015, and these missing values seem highly unlikely to be 'missing at random' (MAR). This means that for this study, analysis on volunteers was only feasible for the Part B charities.

Given that the accounts dataset has not been developed specifically for this study and that the Charity Register is primarily a regulatory tool, it is inevitably necessary to be flexible about the above restrictions and how the concepts involved are operationalised (Arber, 2001). Although this is of course limiting, there are strong arguments to maximise the use of existing large scale data sources before undertaking new, expensive, and perhaps smaller scale primary collection (Gorard, 2001; Arber, 2001). The available data provides an invaluable first look at how the claims in the literature around volunteering and state income play out across many cases at the sector level. As new years of accounts data become available it may be possible to verify the relationships explored amongst all sizes of charity, as part of a subsequent confirmatory analysis. The number of cases at different size strata are summarised in Table 1, both for the sample used for this study and the target population.

Table 1: Sample size for each size stratum in the 2012-2013 accounts dataset (Part B charities only)

Size category	Population n	Unweighted n - sample dataset
Medium (£500,001 to £1,000, 000)	2,692	655
Large (£1,000,001 to £10,000,000)	4,155	3,235
Major 1 (£10,000,001 to £100,000,000)	790	660
Major 2 (£100,000,001 plus)	47	43
Total	39,805	4,593

* During the analysis, finite population corrections were applied by the 'Survey' Package in R where the proportion of the population stratum sampled was sufficiently high

Approach to analysis

This study falls within the broad paradigm of exploratory data analysis (EDA), originally introduced by Tukey (1977) as a contrast to the widely used 'confirmatory paradigm'. Confirmatory work tests a small number of tightly pre-specified hypotheses against the data, often using null-hypothesis significance tests. EDA, in contrast, is more inductive, open and investigative (Tukey, 1977, Hartwig and Dearing, 1979). Rigour is ensured through careful and thorough examination of the data for

relevant patterns and relationships, testing as many possibilities as possible and working upwards from univariate exploration towards more complex multivariate models (Hartwig and Dearing, 1979).

EDA is also commonly associated with data visualisation and graphing, as this style of analysis lends itself to uncovering new and unexpected patterns (Tukey, 1977). It can help to reveal the structure of the variables and their relationships with great power and efficiency (Cleveland, 1993; Tufte, 1983). Almost all the analysis in this study was primarily conducted using graphs and visualisations, for example by using co-plots to explore interactions or hold variables constant. Simple linear models were also used, however, to help clarify and quantify the relationships uncovered, as well as to help concisely present certain results in the next section. The details of these models are included in Appendix A.

In reality the boundary between the confirmatory and EDA paradigms is more blurred, and there is a spectrum of pre-specification. In this case, the conceptual variables under consideration have been suggested in advance by the literature, but the potential strength, form and role of mediating variables in the relationships of interest are not known. A largely exploratory position is therefore a good fit for this relatively untapped data source. As a result the research question for this study was quite broadly specified: *What is the relationship between state funding and volunteer levels in charities?*

The most obvious disadvantage to EDA is a much higher risk of uncovering spurious relationships within the sample due to the sheer number of different avenues explored. In other words, despite the large sample size, if using null-hypothesis significance tests the family-wise error rate is likely to be unacceptably high. This is why it is recommended that any relationships or models that result from EDA are later tested by new data (Grolemund and Wickham, 2017). It is in this later stage when null-hypothesis tests are best applied as part of a fully worked out framework, which takes account of statistical power (Cohen, 1990; Field, 2013).

In an exploratory study like this one, where the all or nothing logic of hypothesis tests is ill-suited, sampling uncertainty is instead generally shown visually using 95 per cent confidence intervals. As a rule of thumb, for those who wish to infer statistical significance more formally, if these intervals overlap by more than 25 per cent then a null-hypothesis test will not be significant at the .05 level (Field, 2013).

Analysis

Key variables

The two main outcome variables used to measure volunteer input in this study were derived from headcounts of volunteers and staff included in Part B of the annual returns. The first measure was simply the number of volunteers, while the second scaled this number volunteer variable into a proportion of all volunteers and staff in a charity. Although these constitute a reasonable measure of paid and voluntary input, they are clearly only a partial indicator as they do not measure the extent of an individual's involvement in terms of hours contributed or the nature of their role.

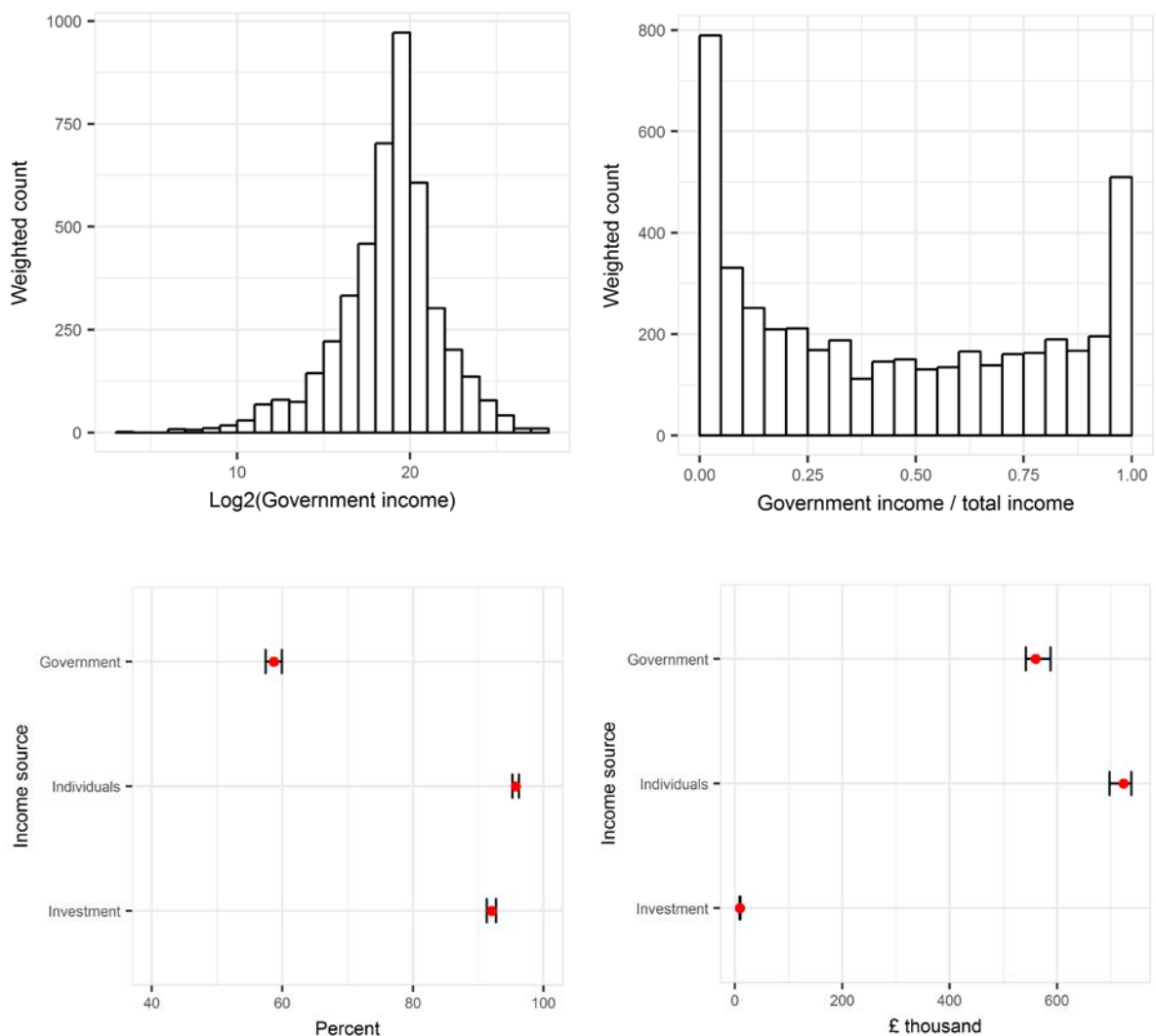
The distribution of the volunteer count is heavily skewed, and 34 per cent of the Part B Charities recorded zero volunteers. Having any volunteers at all, and the number of those volunteers, seem likely to capture related but somewhat distinct conceptual characteristics of a charity, so were considered separately during the exploratory analysis. Excluding zero values, the mean number of volunteers for Part B charities is 1,692,055 and the median is 48, which indicates the very large degree of skew. Skew can cause analysis issues due to extreme cases disproportionately influencing the results. In order to mitigate this problem, group medians were compared during the bivariate analysis as well the means, and the logarithm transformation (base 2) was applied to the income and count variables. In the latter case this has the additional benefit of increasing the linearity of monotonic relationships between variables (Hartwig and Dearing, 1979).

The number of zero values for staff is much lower than for the volunteer variable, at just 3.6%, though this raises doubts over whether zeros are being recorded as missing for this variable. If we focus on the 65% of the Part B charities with non-missing and non-zero values for both staff and volunteers, then the mean proportion of volunteers is .55 and the median is .58. This reflects the fairly uniform distribution for volunteers as a proportion, with a slight degree of negative skew.

State income here refers specifically to funding from the core elements of the UK state, including central, regional, local, and town and parish government, NHS trusts and devolved administrations. More independent or peripheral bodies such as the European Union, international government agencies, foreign governments, public corporations, the Arts Council and the National Lottery are not included. 41 per cent of charities received no state funding at all, much higher than the proportions than that received no investment or individual income (8 and 4 per cent respectively, see Figure X).

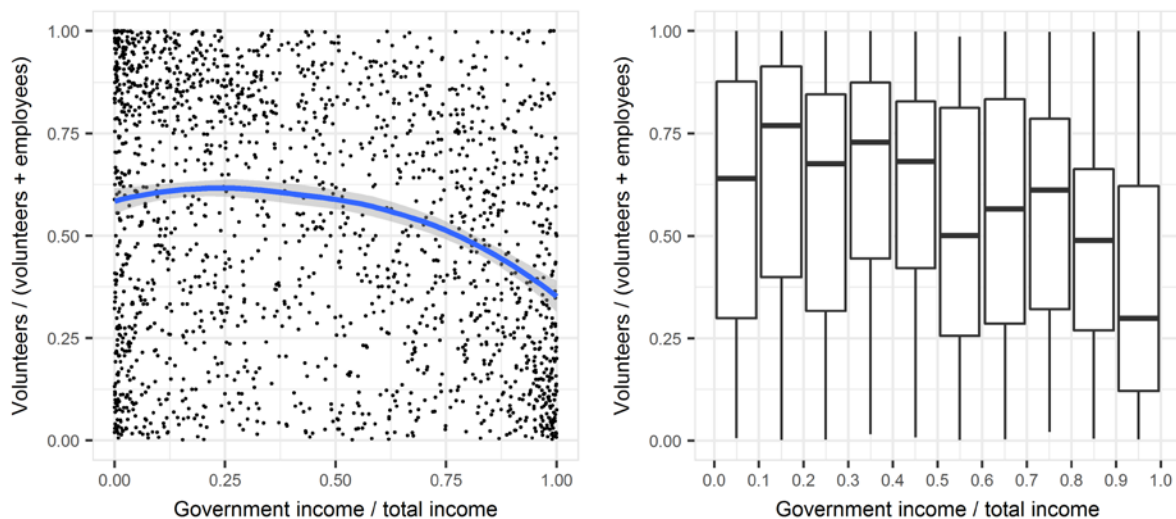
Even excluding the zero values, state income is extremely skewed, as shown by the percentile plot in Figure X. 50 per cent of state income recipients receive less than £46,351, and 90 per cent receive less than £706,228. As a result most state income is concentrated within a relatively small number of recipients. The top 10 per cent of recipients account for 95 per cent of the total.

For those Part B charities that do receive some state income, the mean amount is **£2,655,032** and the median is **£559,682**. These are higher than the averages for the other sources shown in **Figure X**, excluding all zero values. It suggests that charities are less likely to receive state income but receive on average more of it when they do compared to other sources. In addition to absolute levels of state income, we can also look at the proportion of total income charities receive from the state. **Figure X** shows the distribution of this variable, again excluding zero values. There remains a peak for the very lowest values, but in general the distribution is much more uniform across the full range. The mean proportion of their income that recipients obtain from the state is **.44** and the median is **.39**. Less than **1** per cent of charities that receive state income receive absolutely all of their income from the state.



Bivariate findings

As discussed in the evidence review, the existing literature was largely negative about the relationship between state income and volunteer levels in charities. The finding most in line with this body of work within this study is the relationship between state income as a proportion of total income, and volunteers as a proportion of both volunteers and paid staff. The loess curve in **Figure X** below shows a clearly negative trend, accelerating at the higher levels of state income as a proportion. It is possible to distinguish two clusters of cases in the top-left and bottom-right of the graph, suggesting a prevalence of charities with a very high score on one variable, and a very low score on the other. The linear correlation coefficient is **-0.23**: a moderate effect size. This relationship is therefore at least consistent with the idea that state funding inhibits voluntary participation in charities, though it is worth reiterating that the research design means we cannot determine a causal link. The potential for size to act as a confounding variable was ruled out using co-plots and linear modelling, exploring the relationship at different levels of total income. The size of the relationship was virtually unchanged when size was held constant.

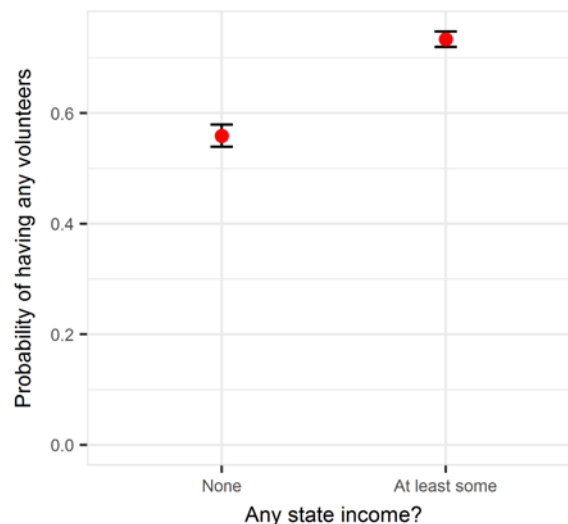


Size does play a major role if neither of the variables is scaled as a proportion, however. The linear correlation between \log_2 state income and \log_2 volunteers is slightly positive ($r = .14$), but this is entirely due to the confounding influence of total income. Of those Part B charities with at least some volunteers and state income, charities with a higher total income are more likely to have higher absolute levels of both resources. Included as a single predictor of \log_2 volunteers, \log_2 state income has a coefficient of **0.14**, but this drops to **-0.06** when \log_2 total income is included as a second predictor, holding size constant.

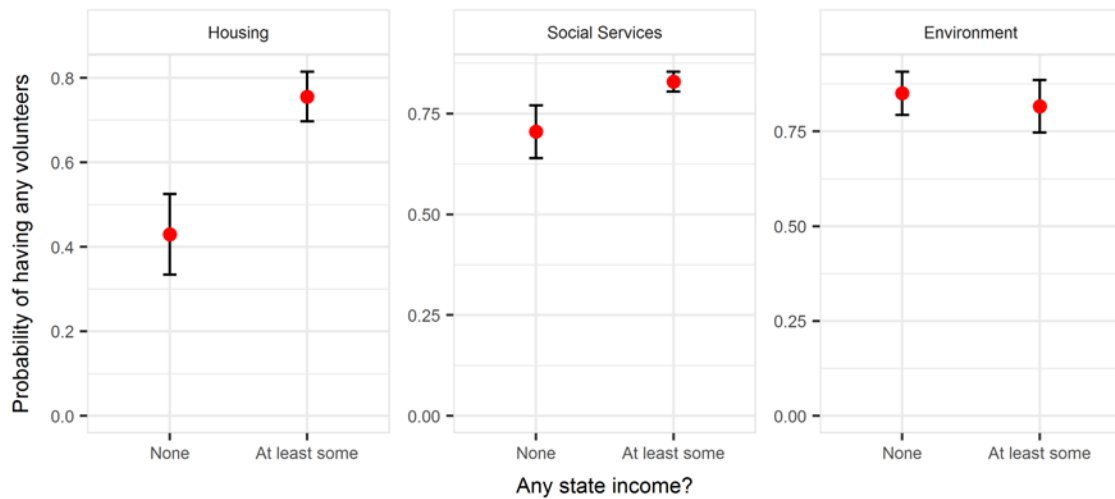
If volunteers are expressed as a proportion and government income as the \log_2 absolute amount then the correlation is **-0.22**. If volunteers are left in \log_2 absolute form and government income as a proportion of total income, it is **-0.17**. In both cases the moderate negative relationship remains.

The results for contract income are consistent those in **Figure X**. The correlation between contract income as a proportion of total income and volunteers as a proportion of volunteers and staff is **-.21**. In contrast, however, the same relationship using voluntary state income (grants) is almost entirely absent ($r = .02$). This is also consistent with the literature critical of state funding, which suggests that grant funding is much more consistent with voluntary action than contracts.

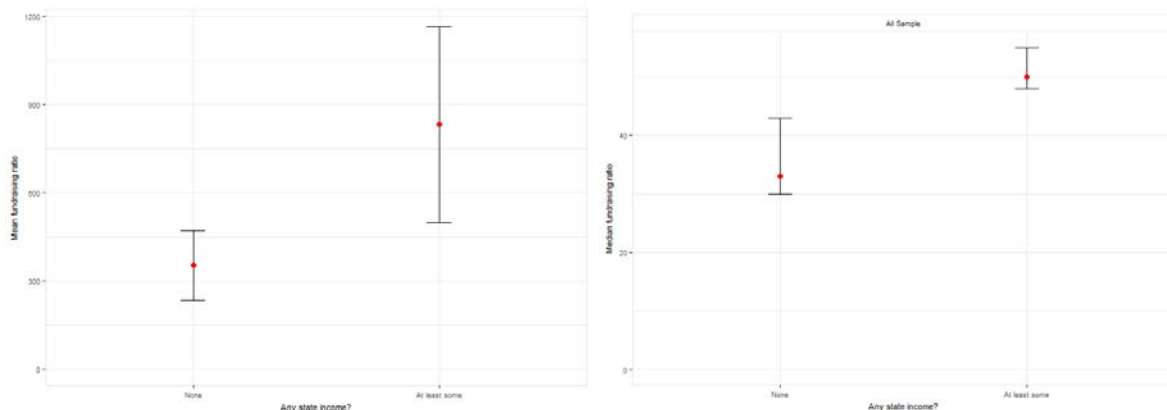
Once we start looking at the influence of having any state income at all, however, the picture becomes more complicated. Having at least some state income is positively related to having at least some volunteers. **Figure X** shows the relationship between the probabilities of these two outcomes. **56** per cent of those with no state funding use volunteers, compared to **73** per cent of those with at least some state income. The relationship is almost unchanged at different levels of total income and applies to voluntary and contractual state funding. There is therefore no evidence to suggest that having state income makes using volunteers less likely, as the critique of state funding might suggest.



Potentially, this finding may be related to the 'type' of charities involved and the nature of their activities. Some of these differences can be captured by charities' industry or service area. **Figure X** shows the same graph as **Figure X** within three different ICNPO categories, each of which has a reasonable number of unweighted cases and variation. The relationship is stronger for Housing charities, but weaker for those in Social Services, and for environment charities it appears to have disappeared entirely. If we include all the ICNPO categories as covariant within a logistic regression model predicting the log odds of having any volunteers, then the coefficient for having any state income drops from **0.78** to **0.48**.



State funded charities also have a higher average number of volunteers (even excluding zero values). The mean number of volunteers is **351** for those with no state funding and **831** for those with at least some (excluding those with zero volunteers in both cases). The respective medians for both groups are **30** and **50**. Similar results were found regardless of whether the state funding was voluntary or contractual. Once again, the results contradict any suggestion that having any state income might limit the number of volunteers.



Again, this finding may come down to the different types of charity in each group. Controlling for industry in a linear model predicting log2 volunteers reduces the coefficient for having any state income from **0.61** to **0.39**.

Holding total income constant makes little difference to the overall result, reducing the coefficient for having any state income down only slightly to **0.56**. Further examination using co-plots; however, reveals an interaction effect occurring between having any state income and total income.

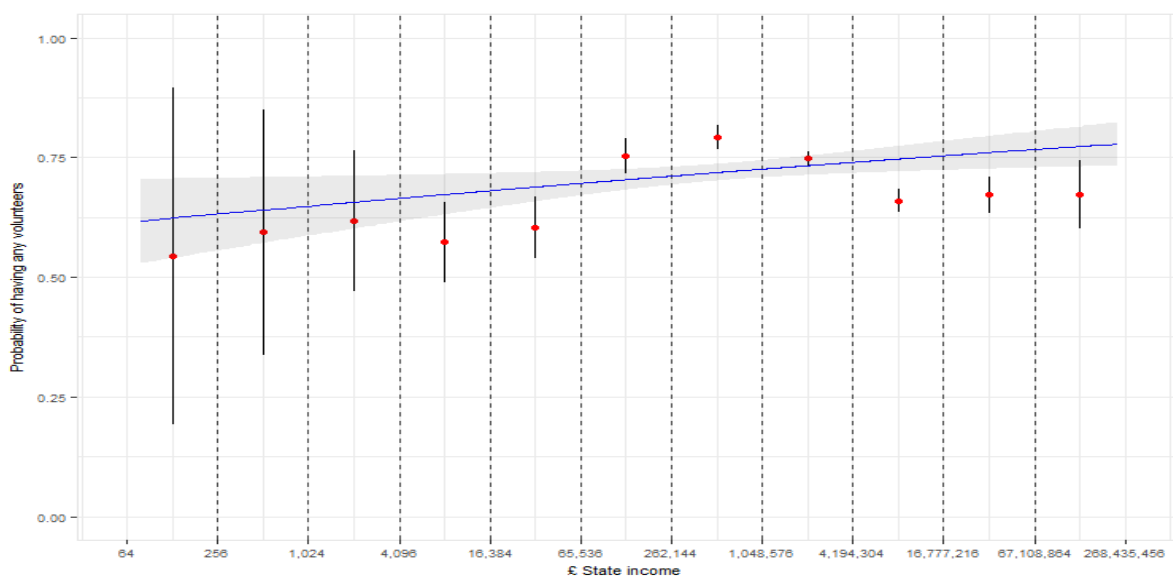
Specifically, the positive difference appears to emerge only as the charities involved become larger. For charities with an income over £1 million, state funded charities have a mean of **391** volunteers and non-state funded a mean of **1207**. The medians are **33** and **63** respectively. We can only speculate for the reasons behind this interaction, but it may be that at higher levels of funding, receiving any

state income at all becomes more of a distinguishing factor due to the higher monetary stakes involved.

A similar pattern emerges when the outcome variable is changed to volunteers as a proportion of both staff and volunteers, excluding all zero values. Overall there is little difference between those with and without state income in either direction. The mean proportion for those with no state income is **.54** and for those with at least some it is **.55**. The medians for both groups are **.58**. The type of state income involved again makes little difference to the results. This means that although the relevant charities with at least some state income use on average more volunteers, they must also use more employees. This fits with the idea that state funded charities might be conducting different types of activities to those without any state funding, requiring greater levels of human resources.

Again, however, there is an interaction with total income, and co-plots do reveal a positive relationship amongst the very highest categories. For charities with an income over £10 million, state funded charities have a mean proportion of volunteers of **.40**, while the mean for those with no state funding was **.31**. The respective medians were and **.34** and **.12**. For the very largest charities, therefore, having state income must increase the average number of volunteers more than it does the number of staff. In any case, the results at all size levels remain inconsistent with the idea that having any state income tilts the balance in favour of staff, at least in terms of raw headcounts.

Finally, the relationship between the amount of state funding and the probability of having any volunteers also fails to exhibit a relationship consistent with the general literature. **Figure X** shows the estimated probability of having any volunteers for different intervals of state income (boundaries increasing by 2 on a log2 scale and excluding zero values). The confidence intervals for the first few categories are very wide due to the smaller number of cases at those levels.



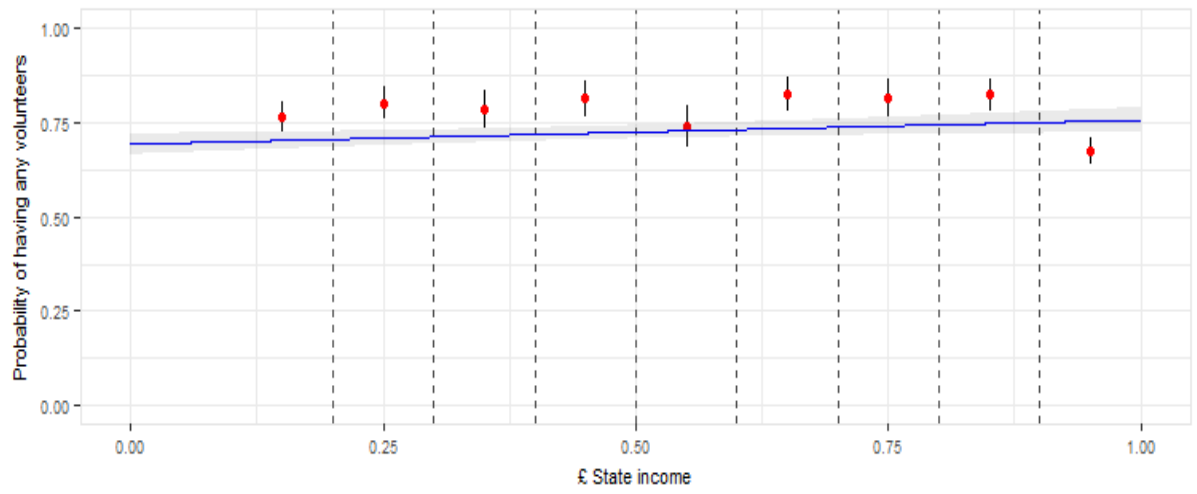
Overall, it is difficult to identify a consistent pattern. The linear trend is slightly positive, as indicated by a logistic regression model in **Figure X**, transformed to show changes in the predicted probability of having any volunteers. This would be consistent with the relationship with having any state income at all shown in **Figure X**, but the trend is quite weak. It may even begin to reverse slightly at higher levels of state income, indicating some non-linearity.

It is worth briefly noting, however, that this reversal occurs around the £500,000 mark. Changes in state income below this point are associated with average increases in state income as a proportion of total income, whereas above this point they are generally not. This may be related to the minimum size threshold of £500,000 for this sample, which means this relationship in particular would warrant future confirmation with all sizes of charity, to see whether the non-linearity remains.

Using co-plots to control for the relationship in figure X does not work well due to the rapidly decreasing number of cases per sub-category. Adding ICNPO category dummy variables to the linear model, however, seems to absorb most of the variation which state income was able to account. Controlling for log2 total income actually increases the log2 state income from **0.04** to **0.10**. But this may still just be reflecting the effect of ICNPO categories, as including both covariates once again appears to render state income (and total income) insignificant.

The relationship shown in Figures X is very similar if just contractual state funding is considered, but the results for voluntary state income are quite distinctive. In a linear model the coefficient for log2 voluntary state income is **-0.11**, clearly negative. The coefficient also stands up much better to the inclusion of total income or ICNPO categories, and remains at **-0.10** when both covariates are included. This somewhat surprising finding does not seem consistent with the idea that grant funding has less of an impact on charities than state contracts.

Using government income as a proportion as the predictor yields similar results. Again there is a very slight positive trend, though Figure X suggests there is very limited variation in the probability of having any volunteers across the x-axis categories. There is also some non-linearity visible, particularly a dip for those with the highest proportions of income from the data, which is not captured well by the logistic regression model. Adding log2 total income into the model makes almost no difference in this case, whereas adding ICNPO categories renders the state income as a proportion coefficient too uncertain to interpret. Similar to when using absolute state income, using voluntary income as a proportion of total income produces a negative relationship ($b = -0.22$ in a linear model), even if both covariates are included ($b = -0.47$).



Discussion

On the basis of the evidence presented in this article, how seriously should we take the threat posed to the voluntary characteristics of TSOs, warned against in the literature review (Rochester, 2013; Billis, 2010)? The cross-sectional relationship between state income and volunteer numbers was found to be moderately negative, at least after size is controlled for or when the two variables are considered as proportions. Although only cross-sectional, these findings are at least consistent with the negative picture painted by the literature. The existing body of case study work, which outlines some of the problems TSOs have experienced when combining volunteers and state contracting, also means that there is a plausible theoretical mechanism for a negative causal relationship. Furthermore, the findings suggested that the relationship applied to contract funding, but not voluntary grant funding, which is again consistent with the concerns raised by the literature.

With all this in mind, a moderate level of concern does seem reasonable, especially if further data confirms the results. Promoting volunteering was central to a number of the policy agendas favoured by the previous Conservative led administration (Woodhouse, 2015). NCVO (2017) estimated that the voluntary sector received 15.3 billion from the state in 2014/2015. The sums involved are considerable, and volunteer participation is one means by which public spending might increase the social value it creates. If the current Government therefore wishes to promote voluntary participation at the same time as contracting, as seems likely, then changes to the existing model may well be required. Steps could certainly be taken which make contracts themselves more amenable to the role of volunteers. Including the role of volunteers in the contract itself would be a positive first step, as would ensuring resources are made available for their training and supervision.

The strongest critics of state contracting; however, would undoubtedly reject the potential for voluntary activity to co-exist harmoniously alongside government outsourcing. The risk is that the needs of the state will always come first, neutering and diminishing the potential input of volunteers and their ability operate independently. The findings from this study, however, suggest that there is nothing completely contradictory about receiving state income and using volunteers, and indeed the likelihoods of using either resource are positively correlated. Charities with at least some state funding seem to be more likely to use volunteers and to use higher average numbers of them.

Speculatively, those that receive no state funding may be more likely to constitute a particular 'type' of charity, more involved in personal services and more likely to make use of human resources of all kinds. This is supported by the finding that except for the very largest charities, state funded charities did not have a higher than average *proportion* of volunteers out of both volunteers and paid staff, suggesting they also have higher average levels of staff. Controlling for ICNPO category also absorbed at least some of the variation between the groups.

It is also worth keeping the results that were negative in proportion. A correlation of .23 is moderate within the context of social science, but it still means that state funding can only account for a maximum 5% of the variation in volunteer levels. And this is without controlling for any other observed or unobserved variables which could account for the same variation, or considering the direction of causality. Even if a causal relationship does exist, therefore, it is likely to be quite small. The idea that state funding alone is fundamentally determining the numbers of volunteers across the sector as a whole is therefore not really plausible given the results.

This should not be unduly surprising, given that organisations are complex social entities, subject to many internal and external influences. The potential benefits of state funding should also not be disregarded, as well as the limitations of other funding sources (Foster and Bradach, 2005; Leat, 1995). Well managed and effective state funding can provide capacity, security and stability (Alcock et al. 2004; Chater, 2008). The results of this study, therefore, do not seem conclusive enough to justify the more stringent demands for separate spheres of operation, though there may be other empirical and normal reasons for making such a case: not least the lack of any proven effectiveness for contracting (PASC, 2008).

The results of this study help to address the oft cited lack of evidence in the debate on state funding (PASC, 2008; Kramer, 1994; Blackmore, 2008). There are, however, some clear avenues via which this work can be extended further in future. The exploratory approach used in this study paid dividends, as the flexibility needed in the face of a largely untapped dataset helped to reveal a number of interesting interactions and non-linearities. As an exploratory data analysis, and part of a wider study which tested a substantial number of different relationships and claims, it is important that the results uncovered in this study are subjected to confirmatory data analysis when new data becomes available. As discussed in the methodology, it may also be possible in subsequent years to extend the analysis to the smaller charities which do not fill in Part B of the annual returns. There is a realistic chance that the results may differ for this wider group of charities, given that at least some of the relationships uncovered exhibited interaction effects with total income.

As more data becomes available, it is also possible that there will be enough linked cases over a sufficient period of time to conduct this confirmatory analysis using panel analysis techniques. This means changes to volunteer levels within charities can be compared to changes in their state income over multiple years. Doing so will help to rule out the role of unobserved differences between cases, helping to isolate any causal relationship between state funding and volunteer levels over time. It remains largely unknown; however, what time period any causal relationship that might exist would occur over, meaning it is difficult to specify how many waves would be necessary.

Conclusion

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