

The Three Exit, Three Voice and Loyalty
Framework: A Test with Panel Survey Data on
Urban Services

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Abstract

The paper applies a modified Hirschman framework with three types of exit: moving location; moving from the public to a private sector provider; and moving between public sector providers; and three types of voice: private voice (complaining about private goods); voting; and collective action. The article then presents evidence from four waves of an online survey examining citizen satisfaction with public services and the relationship between exit and voice opportunities.

The relationship between democratic processes of demand – so-called voice – and choice-driven process – so-called exit – was first examined by Hirschman in a short classic monograph, *Exit, Voice and Loyalty* in 1970. Hirschman's concerns were that increasing the availability of exit through choice might lead to a decline of voice activities. This could occur through one or both of two processes. Choice may tend to 'atrophy the development of the art of voice' (Hirschman, 1970, p. 43), either because citizens do not learn how to use the political process to make demands, since they always utilize exit strategies; or because the alert consumers exit, leaving behind the inert ones who are unable either to exit or to voice. This second process assumes that some types of people are more capable both of using the political processes to make their demands and of choosing the right options and so they exit from poor providers. If the second option is not available they will voice demands for improving quality for all. Once exit possibilities are available they will not voice but choose to exit, leaving poor services for the inert who do not (or cannot) exit. It might be claimed that choice and voice processes reinforce each other as greater choice encourages people to voice their complaints to their current provider. No evidence has been offered on this idea, however.

Many of Hirschman's ideas have been much discussed theoretically but few have been empirically examined. Or rather when applied empirically the postulated effects of exit on voice are ignored. One reason for this lacuna is that teasing out how these relationships might pan out is extremely difficult to test (Dowding *et al.*, 2000). Nevertheless, this paper aims to take a further step in that direction, building on our earlier work (Dowding and John 2008) and testing out the implications of our ideas on a panel data set of survey responses to exit and voice.

The Three Exit, Three Voice Model

We argue in Dowding *et al.* (2000) that Hirschman's original framework is too simple in two ways. Both as Hirschman explains it and how it has been tested. It (a) ignores the complicating effects of public goods on the exit-voice relationship; and (b) neglects the dynamic aspect of the exit-voice relationship. The former means that voice might be used either to complain about or defend current levels and quality of provision, whereas exit in relationship to quality would always be a response to dissatisfaction. Thus exit and voice are not symmetrical. The latter requires us to examine the effects upon political participation of past voice and exit opportunities. If voice is relatively costless and produces the desired effect then we would not expect to see subsequent exit. However, if voice has proved to be unsuccessful then we might see higher levels of exit in the future. Similarly, if exit is the cheaper option but does not lead to greater satisfaction over time, then exit might be rejected on future occasions in favour of voice. In order to capture this dynamic relationship between exit and voice longitudinal studies are required. The longitudinal nature of our data allows us to examine this dynamic aspect.

We propose a 'three exit, three voice' framework that captures the public goods aspect of responses to dissatisfaction (Dowding and John 2008, see also Dowding *et al.* 2000). Empirically there are two ways that citizens might exit from a public service. First, they might physically move away from the catchment area of one provider to that of another. Thus parents move to the catchment area of a good school and away from that of one with a poor reputation. Citizens might move from the locality of one health authority to that of another. Or households might relocate themselves from one local government

jurisdiction to another. Physical relocation from one school catchment area to another is well known and has a large capitalization effect upon house prices (Bogart and Cromwell, 1997; Cheshire and Sheppard, 1998; Jud and Watts, 1981; Ogwa and Dutton, 1997; Teske et al., 1993). Relocation in order to take advantage of the 'postcode lottery' in health provision has not been empirically demonstrated though anecdote suggests that it happens occasionally. Household relocation across jurisdiction boundaries also takes place (Aronson, 1974; Davies, 1982; Dowding and John, 1996; Dowding and John, 1997; Dowding and Mergoupis, 2003; Dowding et al., 1994; John et al., 1995; Percy and Hawkins, 1992; Percy et al., 1995). The second exit behaviour might occur as consumers exit from public provision to private provision. Parents may take their children out of state schools for private education. Patients may remove themselves from National Health Service provision to private health care. The third exit behaviour occurs where choice is available through different public providers.

There are also three relevant ways in which people might use voice. They might voice complaints about a good or service they have received. For example, they might complain to a local housing bureaucrat about some problem with their house; they might complain to a council bureaucrat about a problem with street lighting, or a hole in the road, or about the quality of refuse collection; or they might make such a private complaint to an elected local councillor or their local MP. We call these activities individual voice. However, they might also engage in collective voice activity in two broad ways. Voting is a form of collective voice – collective because voting concerns supporting a representative or party that stands on a broad array of public goods provision in terms of both quantity and quality. The second is a more obviously collective or joint act such as joining and

campaigning through a pressure group, or signing a petition, going on a march and so on; the latter, though not necessarily the former, involves horizontal voice.

An important difference between individual and collective voice activity is that we would ordinarily only expect to see the individual voice if there were a problem that a consumer wished to see put right. In that sense individual voice is symmetrical with exit behaviour. However, collective voice activity might occur even when citizens are satisfied with current services and wish to defend the nature or level of services as well as to try to improve them. Citizens might be motivated to vote to maintain the level of services if one party or set of politicians were standing on a tax-cutting ticket promising to remove, scale down or reduce spending on some services. Campaigning is also often directed at keeping the status quo rather than changing the current arrangements.

Loyalty or Social Investment

Another aspect of Hirschman's original framework was to include the concept of loyalty. Hirschman argued that if customers were loyal to a given product they might be more motivated to voice complaints than to leave for another provider. In order to make sense of how loyalty might operate we altered the subject of loyalty from the product to an area. We suggest that households are less likely to exit from one local authority jurisdiction if they have social ties to that area. If they were born and brought up in the area or have family and friends there, they are less inclined to move. One form of exiting is thus made less likely by such loyalty. Similarly someone might be more motivated to try to defend their local school rather than exit if they or their older children had attended that school and thus felt tied to it for sentimental reasons. We hypothesize that this form of

loyalty can lead to social investment – of which voice activity would be an important component. Hence we argue that local networks or ties (a form of social capital) will lead to greater voice activity relative to exit. We also argue that past voice activity is a form of social investment and will also lead to greater future voice activity.

Our conception of loyalty here is thus behavioural (it affects the exit–voice trade-off) and institutional (its effects can be expected to vary across institutional settings) and not psychological. Loyalty in our framework is supposed to do the job of loyalty as in Hirschman’s original framework – to increase the probability of voice relative to exit. This is juxtaposed to psychological approaches (e.g. Rusbelt et al 1982; Lyons et al 1992).

Satisfaction

A key variable that affects any potential exit–voice trade-off is satisfaction. As we have argued, private voice activity is only likely to occur if citizens are dissatisfied with the services they receive. However, they may use collective voice even if they are perfectly satisfied with services but fear they may deteriorate if, say, another party gains control at an election. The relationship between satisfaction and the two exit strategies is also complex. All things being equal, dissatisfaction with public services should be correlated with higher intentions to exit, and with higher exiting itself. People are more likely to shift to the private sector if they are dissatisfied with the services provided in the public sector than if they are satisfied.

However, they might still exit even if they state they are satisfied with those services. For example they might feel that the local school provides a good

education and are satisfied with the service it provides, but, if they can afford it, still send their children to a private school if they believe that this would bring extra advantages to their child. One might be satisfied with a public service but still think the private sector is superior. Nevertheless, we should still expect to see dissatisfaction correlated with exit. Similarly, while households rarely geographically exit purely because they are dissatisfied with the services provided by their local authority, it has been shown that once a household has taken the decision to move they will compare the tax–service packages on offer from different local authorities within the same metropolitan area (Dowding and John, 1996; John et al., 1995). However, comparison between the relative packages on offer shows that, strictly speaking, exit does not depend upon dissatisfaction with public services. Dissatisfaction thus has a complex relationship with both voice and exit, though the general expectation is that dissatisfaction spurs both voice and exit. What must be borne in mind, however, is that satisfaction is a relative concept. One might exit from state provision even though one is satisfied with that provision, given the constraints on government expenditure, if one thinks that better provision might be found in the private sector. Thus exit from state provision can occur even when people say they are satisfied with that provision.

What matters to our analysis is the nature of that trade-off is, at any given level of satisfaction. It should also be noted that it is known that the level of satisfaction with services varies with social class, educational attainment and employment status. Those in employment, with higher education and higher social class tend to be less satisfied with services. This higher level of dissatisfaction is probably due to higher expectations. It is also the case that, independent of the level of satisfaction, the better educated and more wealthy are

also more likely to voice and exit, as both activities are lower cost for them.

Generally speaking, individual voice activity has a lower cost than relocation or exit to private providers with the private costs that the latter holds. However, collective voice might be more expensive (especially given its expected result) than moving to the private sector or even moving across jurisdictions for the relatively wealthy. Exit across providers within the public sector might be relatively costless.

In previous work we have looked at these relationships in static form (Dowding and John 2008), but there are dynamic aspects to how exit and voice work, which is strongly apparent in Hirschman's world. Individuals will try a strategy once, and when this does not work they may increase or decrease their satisfaction and then try another strategy in a different time period. Dissatisfaction may lead to voice activity, but if this does remedy the problem, it could then lead to exit. If dissatisfied, relatively low cost voice activity might occur, such as individual voice, then higher cost activity such as collective voice or exit might then follow. We assume that for the relationships we study voice is lower cost than exit; in other areas such as the market for simple goods, the opposite relationship holds as exit is cheaper than voice. Thus in a dynamic sense, the differences between the costs of the different kinds of voice may have implications for the order in which exit and voice is carried out.

We summarise the discussion so far in a series of hypothesis, which move from the static (H1-H4) to the dynamic (H5-H7).

H1: Intentions to exit will decrease collective voice activity.

H2: Intentions to exit will decrease individual voice, but less than collective voice

H3: Social investment increases collective and individual voice

H4: Lack of exit availability will increase collective voice more than individual voice

H5: Dissatisfaction will increase voice first, then exit

H6: Satisfaction will increase after exit

H7: Satisfaction will increase after voice has been successfully responded to

Data and methods

Our method is a survey of UK internet users randomly selected from a representative bank of internet users. Internet panels are increasingly used in survey research, such as the ESRC-funded 2005 British Election Study (BES). Survey companies have large banks of users, which are weighted to be representative of the population. Analysis from the 2005 BES show little or no difference – depending on the question – between the results gained from an internet poll and a conventional random probability door-to-door survey (Sanders *et al.*, 2007). In Wave 1 in 2005 we sampled 9,500 from the bank of over 100,000 YouGov users yielding 4,067 responses, a response rate of 42 per cent. In Wave 2 we got a response of 2,619, 64.5 per cent from respondents of Wave 1. In Wave 3 we surveyed those who responded in Wave 2 and supplemented the panel to yield 4952 responses, which includes 1744 of those from Wave 2. In Wave 4 we surveyed all the previous waves producing 3468 responses (1690 from Waves 1; 1486 from Wave 2; and 2941 from Wave 3). There were 1138 respondents who answered all four waves.

To test our hypotheses about the general relations between exit, voice and satisfaction we stack the data and use random effects regression, using a time variable to control for effects across the waves.

Analysis

We first test whether there is a relationship between the intention to exit and collective voice. Table 1 presents a model for voting in local elections, a fairly universal collective act, subject to much empirical investigation. The model uses some familiar covariates of sex, age, race, years of education and income to represent social-economic status (SES) and demographic variables. We include satisfaction with local public services on the grounds that dissatisfaction is likely to stimulate voice. We also include the social investment variables of group membership, which aggregates an individual's score for a series of specified groups, the extent to which they know their neighbours and social trust. The Appendix gives details about these variables and a table of descriptive statistics. The findings show the expected coefficients on the SES and demographic variables, with the exception of race. Service satisfaction does not have an impact, but the exit variable of intention to move pulls down collective voice as predicted.

The next two models look at private exit, another leg of our triadic conception of exit. Here we have the problem that people who exit almost by definition voice less because they are out of the system, so in a similar fashion to the case of exit from the jurisdiction, we need a measure that captures the extent to which people receiving public sector service would like to exit to the private sector. If they cannot afford to take up private provision we consider them to be 'locked in' to the public sector. We measure people who are locked in to services by a series of questions about how much extra income it would take for them to take up private sector provision. For education, we asked parents who did not

have children at a private school whether they would send them to one if their income increased sufficiently. We suggested the cost of private schooling was £10,000 per annum and asked if they would send a child to a private school if their annual income increased by £20,000. If they said they would under those circumstances send their child to a private school we assume they are locked in to state schools, in contrast to the people who still opt for the state schooling choosing to spend the extra income on other things. We asked similar questions for health. Here we suggested private health insurance would cost £500 per annum and asked respondents to indicate their private and public sector choices if they had an extra £1,000 added to their salary. Hirschman suggests that people who are locked in are more likely to voice than those who could exit.

However, both models show these terms do not impact on collective voice. The social investment terms behave as expected. Table 2 performs a similar analysis on other forms of collective voice. There are four items where respondents are invited to say whether they have carried them out: attended a public meeting or rally; taken part in a public demonstration or protest or met with neighbours to complain or lobby; and signed a petition. These are added together to create a variable, which is analysed with the same basket of variables as Table 1. Here we find a rather different relationship – the intention to move positively predicts participation. At first this seems puzzling. In other work (Dowding, John and Rubenson 2008) we show from our data and data from the US that the intention to move house reduces the probability of a citizen voting though this effect washes out where the citizen belongs to a large number of group organizations or has participated in group activities. This makes a great deal of sense. If you are moving home then one has less of a stake in a local

issues and so less likely to vote in local elections. However, those who have socially invested in a community are still likely to care about what happens there even if they are moving away.

Here we find that those intending to exit are more likely to belong to group organizations. We might be picking up Hirschman's alert consumers who are both more likely to voice, and more likely to exit than his inert consumers. In regressions of individual items, we find most items are not significant for intention to move bar petitioning, and it is which is where there is a positive coefficient. Signing a petition is a low cost collective activity, though is also likely to be one that those who have most socially invested and are more socially connected are likely to do. It seems that this might well be an effect of alert citizens and also of social investment so consistent with our earlier work.

In Table 3 we analyse individual voice in the form of complaints about specific problems respondents have had with public services. To capture the picture across services, we analyse the aggregated variable of complaints across all services. This is in response to a question asked about nine separate public services, where the respondent can say yes or no as to whether they have ever complained about the quality of the service. In Table 4 we present ordinary least squares (OLS). It might be defensible here to use an ordered probit as the variable is skewed here, however, OLS produces essentially the same results. Here the covariates have been differently conceptualised, partly because there is less of an automatic connection between complaining and socio-economic status than in the voting or general participation cases (Thomas and Melkers, 1999). While higher socio-economic status groups might be more able to complain, they use fewer public services, and those they tend to use are less likely to generate

problems. Women and older people are thought to be more likely to complain because they are in the front line of service provision to a greater extent. We compare intentions to move, which as with some forms of collective voice increases the amount of complaining rather than reverse, which is consistent with the voice conceptualization. Consistent with Hirschman we find being locked into education and health increases individual voice, and note this is in contrast with the effect of lock in with collective voice as in Table 1 and Table 2.

Next we compare responses to dissatisfaction in Table 4. Here we see whether dissatisfaction is more likely to lead to voice than exit. We compare satisfaction lagged by one year with different kinds of exit, in a simple model first without the social capital terms, but including SES and the demographic variables. As we have suggested it is difficult to interpret what to expect from vote activity and we find that there is not impact of dissatisfaction on vote. However, as expected collective voice in terms of pressure activity does have an effect. We also find that moving has an effect with the same order of magnitude. It seems people react to dissatisfaction with both collective voice and exit. Of course private voice has the greater effect, which is to be expected. We cannot test for exit to the private sector in this model because there is no simple set of private services as alternatives for the public goods that local authorities provide.

In Table 5 we examine exit and voice in health care where private alternatives are possible. We compare different kinds of response to dissatisfaction with the National Health Service, in this case the expectation of the timeliness of treatment, which is probably the most critical of the variations in perceptions of performance. Here, unsurprisingly we find dissatisfaction leads to complaint, but less to the use of private health.

To seek to understand the causal mechanisms leading to exit and voice, we need to observe behaviour after exit. Once people have made an exit decision they should feel better. In Table 6 we find that having moved in the year of the survey leads to an increase in satisfaction for both council services, primary and secondary schools, but not for the timeliness of health treatment. The latter might take longer to observe since people only use health services intermittently or may simply be the effects of national standards. In future analysis we may look at the views about the General Practitioners which are used more frequently and where we might expect to find greater variance. With respect to council services a separate regression not reported here shows that length of residence increases dissatisfaction. The longer you live somewhere, independent of your age, the worse you think services are. It is not obvious why this is so. It might be that failure resonates more with citizens than good service. That is, they remember bad experiences with local services more than they calculate the average level of service. The more experience you have of the services in a given area the greater the chance they might have failed one in some regard.

The final aspect of voice is whether having a satisfactory response actually reduces the likelihood of exit. We test whether someone thinks their complaint has been sorted out to their satisfaction. Effective response should in theory lead to less willingness to exit. Table 7 presents the results for intentions to move and to intending to exit to private health. The first is an ordered probit as intentions to move is a scale, the second (for health complainants only) is a probit because there was a binary choice in the survey. We find no evidence of impact here. One reason, that we have discussed in work elsewhere is that whilst poor services do seem to increase the desire to exit, and services do impact on location decisions to

some extent, these effects are marginal in relationship to other reasons for geographical relocation (John *et al.* 1995; Dowding and John 1996; Dowding and Mergoupis 2003).

Discussion and Conclusions

Our re-specification of Hirschman allows for various tests of the implications that can be drawn from his model in dynamic perspective, making use of the different kinds of voice and exit that we have identified for citizens' response to dissatisfaction with public services. One of our criticisms of the existing discussions of Hirschman is that they fail to test for the implications that can be drawn from Hirschman, or depart too far from his original model (see Dowding *et al.* 2000). However, our reformulation is necessary in order to draw out the implications that Hirschman derived in empirical contexts which can then be tested by our survey instrument. There are different possible tradeoffs depending on the type of voice and exit available and these can only be examined with dedicated instruments. We have already made some progress testing out the implications of these models in earlier work (Dowding and John 2008; Dowding *et al.* 2008), but these failed to capture the dynamic elements implied in Hirschman's model. Our panel data allows us to examine these more dynamic elements.

We find support from some of our hypotheses but not others. We confirm our earlier finding that intentions to exit decreases collective voice (H1) in the form of vote, but not in other forms of collective voice. Indeed collective voice seems positively correlated with intentions to exit. This relationship might be picking up a type of individual – Hirschman's 'alert' citizens. We do not find that

intentions to exit decrease individual voice. Though we do not find a negative trade-off between voice and exit as expected, it is positive in this case, with a positive relationship between intentions to exit and complaints. This may be the noisy exit noted by some commentators (Barry 1974).

We show that social investment stimulates collective and individual voice as expected (hypothesis 3). We also show that the lack of exit opportunity stimulates voice, but only individual voice, not collective voice as expected, so we reject hypothesis 4 at least in its simple form. It seems that as Hirschman suggests being locked in does drive individual voice, but not voting, petitioning or other forms of collective action. This may be due to the fact that exiters to the private sector in health and education still have incentive to vote and engage in political activity, both in other areas and in education and health itself. For example private health care only covers certain health issues, people still need public emergency services for example. And even if parents send their children to a private school they might still have an interest in seeing the state system working effectively. Obviously however, they have no incentive to private voice; and those who could exit might be less inclined to private voice; they do have another option. Those locked-in however, have only the recourse to private voice beyond normal political activity.

Looking more at the dynamic impacts, we do that dissatisfaction has an immediate effect on voice, but largely in the form of individual voice. There is lesser impact on intentions to exit and on collective voice, which appear equally important as each other, though less than individual voice. This gives partial confirmation to Hypothesis 5. We find that satisfaction is increased by exit, which supports Hypothesis 7. But we do not find that exit decreases after voice

has been responded to.

These results are just the beginning of our further examination of our panel, awaiting the final wave in July 2009. So far they suggest that the many of the key relationship between the different kinds of voice and exit are sustained. But there are puzzles too when the relationships are looked at dynamically. Collective voice works with vote, but the trade-off does not appear with other forms of collective voice. It seems our tri-partite division of two types of collective voice and individual voice is sustained here. Why people carry their voice after existing needs further investigation. For once they have exited, they are more satisfied so would be less likely to voice. Perhaps it takes time for individuals to re-establish their equilibrium after voicing. With five waves we will be in a position to report more of these dynamic effects.

References

- Aronson, J. R. (1974) 'Financing Public Goods and the Distribution of Population in Metropolitan Areas: An Analysis of Fiscal Migration in the US and England', in A. Culyer (ed.), *Economic Policy and Social Goals*. Oxford: Martin Robertson, pp. 313–42.
- Barry, B. (1974) "'Exit, Voice and Loyalty"; a Review' *British Journal of Political Science* 4: 79-104.
- Bogart, W. T. and Cromwell, B. A. (1997) 'How Much More is a Good School District Worth?', *National Tax Journal* L, 215–32.

- Cheshire, P. and Sheppard, S. (1998) 'Estimating Demand for Housing, Land and Neighbourhood Characteristics', *Oxford Bulletin of Economics and Statistics*, 60 (3), 357–82.
- Davies, H. (1982) 'Fiscal Migration and the London Boroughs', *Urban Studies*, 19 (2), 143–54.
- Dowding, K. and John, P. (1996) 'Exiting Behavior under Tiebout Conditions: Towards a Predictive Model', *Public Choice*, 88 (3–4), 393–406.
- Dowding, K. and John, P. (2008), 'The Three Exit, Three Voice and Loyalty Framework: A Test with Survey Data on Local Services', *Political Studies*, 56 (3), 742-742.
- Dowding, K, P. John and D. Rubenson (2008) 'Geographic Mobility, Social Connections and Turnout in the US and UK' (Panel 36-10 Back to Basics :Demographics and Electoral Behavior, American Political Science Association Conference, August 29th 2008.
- Dowding, K. and Mergoupis, T. (2003) 'Fragmentation, Fiscal Mobility and Efficiency', *Journal of Politics*, 65 (4), 1190–207.
- Hirschman, A. O. (1970) *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States*. Cambridge MA: Harvard University Press.
- John, P., Dowding, K. and Biggs, S. (1995) 'Residential Mobility in London: A Micro-level Test of the Behavioural Assumptions of the Tiebout Model', *British Journal of Political Science*, 25 (3), 379–97.
- Jud, G. D. and Watts, J. (1981) 'Schools and Housing Values', *Land Economics*, 57 (3), 459–70.

- Lyons, W. E., Lowery, D. and DeHoog, R. H. (1992) *The Politics of Dissatisfaction: Citizens, Services, and Urban Institutions*. Armonk NY: M. E. Sharpe.
- Ogwa, R. T. and Dutton, S. J. (1997) 'Parent Involvement and School Choice: Exit and Voice in Public Schools', *Urban Education*, 32 (3), 333–53.
- Percy, S. L. and Hawkins, B. W. (1992) 'Further Tests of Individual-level Propositions from the Tiebout Model', *Journal of Politics*, 54 (4), 1149–57.
- Percy, S. L., Hawkins, B. W. and Maier, P. E. (1995) 'Revisiting Tiebout: Moving Rationales and Interjurisdictional Relocation', *Publius*, 25 (1), 1–17.
- Rusbelt, C. E., Zembrodt, I. M. and Gunn, I. M. (1982) 'Exit, Voice, Loyalty and Neglect: Responses to Dissatisfaction in Romantic Relationships', *Journal of Personality and Social Psychology*, 43 (6), 1230–42.
- Sanders, D., Clarke, H., Stewart, M. C. and Whiteley, P. (2007) 'Does Mode Matter for Modelling Choice? Evidence from the 2005 British Election Study', *Political Analysis*, 15 (3), 257–85.
- Teske, P., Schneider, M., Mintrom, M. and Best, S. (1993) 'Establishing Micro Foundations of a Macro Theory: Information, Movers, and the Competitive Local Market for Public Goods', *American Political Science Review*, 87 (3), 702–13.
- Thomas, J. and Melkers, J. (1999) 'Explaining Citizen-Initiated Contacts with Municipal Bureaucrats', *Urban Affairs Review*, 34 (5), 667–90.

TABLES

**Table 1: the determinants of the local voting decision, 2005-8
(random effects probit regression)**

| | | | |
|-------------------|---------------------------|---------------------------|---------------------------|
| Sex | -0.297**** (0.0787) | -0.235** (0.101) | -0.298*** (0.0800) |
| Age | 0.0406*** (0.00322) | 0.0484*** (0.00425) | 0.0418*** (0.00320) |
| Race | -0.209 (0.171) | -0.293 (0.237) | -0.305* (0.175) |
| Education | 0.00398*** (0.00802) | 0.0363*** (0.00957) | 0.0371*** (0.00812) |
| Income | 8.86e-06*** (1.98e-06) | 8.39e-06*** (2.75e-06) | 9.06e-06*** (2.03e-06) |
| Like services | -0.0449 (0.0299) | -0.0136 (0.0377) | -0.0322 (0.0302) |
| Group membership | 0.181*** (0.02) | 0.190*** (0.0305) | 0.179*** (0.0241) |
| Know neighbours | 0.306*** (0.0585) | 0.297*** (0.0770) | 0.307*** (0.0594) |
| Trust | 0.225*** (0.0620) | 0.251*** (0.0793) | 0.245*** (0.0629) |
| Year | -0.199*** (0.0221) | -0.234*** (0.0284) | -0.193*** (0.0224) |
| Intend to move | -0.0444** (0.0204) | | |
| Education lock in | | 0.122 (0.0875) | |
| Health lock in | | | -0.00614 (0.0230) |
| Constant | -1.843*** (0.2588) | -2.426*** (.32153) | -2.011*** (0.250) |
| Rho | .6704 | .6741 | .6678 |
| Log-likelihood | -3207.03 | -1991.30 | -3160.74 |
| Number of obs | 6670 | 4378 | 6690 |

*** p<0.01, ** p<0.05, * p<0.1

**Table 2: the determinants of collective voice, 2005-07
(Random-effects GLS regression)**

| | | | |
|--------------------------|-------------------------|-------------------------|-------------------------|
| Sex | -0.0448* (0.0243) | -0.0117 (0.0292) | -0.0391 (0.0243) |
| Age | 0.00114 (0.000910) | 0.00363*** (0.00112) | 0.000876 (0.000886) |
| Race | 0.0982* (0.0549) | 0.0205 (0.0719) | 0.114** (0.0551) |
| Education | 0.00994*** (0.00243) | 0.0102*** (0.00273) | 0.0106*** (0.00242) |
| Income | -3.01e-07 (6.17e-07) | -3.92e-07 (7.88e-07) | -2.58e-07 (6.24e-07) |
| Like services | -0.0458*** (0.00933) | -0.0561*** (0.0112) | -0.0487*** (0.00935) |
| Group membership | 0.158*** (0.00634) | 0.151*** (0.00763) | 0.160*** (0.00635) |
| Know neighbours | 0.0795*** (0.0182) | 0.0839*** (0.0225) | 0.0837*** (0.0183) |
| Trust | 0.0427** (0.0193) | 0.0151 (0.0236) | 0.0378* (0.0194) |
| Year | 0.0316*** (0.00666) | 0.0402*** (0.00813) | 0.0308*** (0.00672) |
| Intend to move | 0.0129** (0.00654) | | |
| Locked in (education) | | 0.00481 (0.0256) | |
| Locked in (health) | | | -0.00753 (0.00700) |
| Constant | -0.0387 (0.0780) | -0.157* (0.0905) | 0.00965 (0.0741) |
| Rho | .4156 | .3891 | .4129 |
| R-sq | 0.1682 | .1624 | .1717 |
| Number of obs | 6887 | 4450 | 6799 |

*** p<0.01, ** p<0.05, * p<0.1

**Table 3: individual voice and exit
(Random-effects GLS regression)**

| | | | |
|---------------------|----------------------------|----------------------------|----------------------------|
| Sex | 0.00804 (0.0270) | 0.00269 (0.0359) | 0.0118 (0.0277) |
| Age | 0.00316*** (0.00102) | 9.59e-07 (0.00138) | 0.00278*** (0.00102) |
| Race | -0.00240 (0.0615) | -0.0196 (0.0886) | -0.0150 (0.0632) |
| Education | -0.00315 (0.00271) | -0.00405 (0.00336) | -0.00194 (0.00277) |
| Income | -2.31e-06*** (7.09e-07) | -3.36e-06*** (9.83e-07) | -2.44e-06*** (7.28e-07) |
| Like services | -0.131*** (0.0111) | -0.126*** (0.0143) | -0.130*** (0.0112) |
| Group membership | 0.113*** (0.00749) | 0.133*** (0.00971) | 0.113*** (0.00757) |
| Know neighbours | 0.0223 (0.0215) | 0.000827 (0.0286) | 0.00950 (0.0218) |
| Trust | -0.117*** (0.0231) | -0.124*** (0.0303) | -0.120*** (0.0233) |
| Year | -0.0642*** (0.00831) | -0.0669*** (0.0107) | -0.0611*** (0.00841) |
| Intend to move | 0.0136* (0.00780) | | |
| Locked in education | | 0.107*** (0.0327) | |
| Locked in health | | | 0.0248*** (0.00832) |
| Constant | 0.698*** (0.0899) | 0.931*** (0.113) | 0.696*** (0.0863) |
| Observations | 6887 | 4450 | 6799 |
| R-Sq | 0.0958 | .1037 | .0979 |
| Rho | .3163 | .3309 | .3423 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

**Table 4: the impact of past dissatisfaction on voice and exit
(random effects probit regression)**

| | <i>Vote</i> | <i>Petition</i> | <i>Complain</i> | <i>Move</i> |
|---------------------------------|---------------------------|-------------------------|-------------------------|-------------------------|
| Sex | -0.291*** (0.0986) | .103 (0.0693) | .133* (0.0689) | 0.0168 (0.0899) |
| Age | 0.0471*** (0.00410) | 0.002 (0.00249) | 0.00953 (0.00250) | -0.0460*** (0.00368) |
| Race | -0.265 (0.221) | 0.0991 (0.158) | 0.0397 (0.157) | 0.260 (0.205) |
| Education | 0.0526*** (0.0101) | 0.0374*** (0.00702) | 0.00933 (0.00686) | 0.0194** (0.00907) |
| Income | 1.03e-05*** (2.60e-06) | -7.69e-07 (1.84e-06) | -3.00e-06 (1.87e-06) | -2.17e-06 (2.31e-06) |
| Like Services (one year lag) | 0.0517 (0.0396) | -0.0888*** (0.0301) | -0.285*** (0.0311) | -0.0706* (0.0363) |
| Year | -0.102*** (0.0395) | 0.121*** (0.0314) | -0.318*** (0.0354) | -0.116*** (0.0361) |
| Constant | -1.925*** (0.293) | -1.128*** (0.206) | 0.271 (0.205) | 1.983*** (0.262) |
| Observations | 4078 | 4155 | 4155 | 4413 |
| Log-likelihood | -2128.38 | -2565.83 | -2130.03 | -2492.13 |
| Rho | .7146 | .5209 | .4650 | .7025 |

Table 5: exit and voice in health
Random-effects probit regression

| | <i>Complain</i> | <i>Private</i> |
|-------------------------|-------------------------|---------------------------|
| Sex | 0.173* (0.104) | -0.0885 (0.101) |
| Age | -0.00751** (0.00377) | 0.00959*** (0.00362) |
| Race | 0.180 (0.220) | 0.102 (0.221) |
| Education | -0.0228** (0.0106) | 0.0473*** (0.0105) |
| Income | -3.09e-06 (2.91e-06) | 3.01e-05*** (2.75e-06) |
| Lag health satisfaction | -0.145*** (0.0412) | -0.110*** (0.0352) |
| Constant | -3.400 (.3122) | -3.400*** (0.312) |
| Observations | 4168 | 4546 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6: satisfaction after moving

| | <i>Council services</i> | <i>Primary Schools</i> | <i>Secondary Schools</i> | <i>Health Services</i> |
|-----------|---------------------------|---------------------------|---------------------------|------------------------|
| Sex | 0.00321 (0.0516) | 0.329*** (0.0697) | 0.138* (0.138*) | -0.186*** (0.0552) |
| Age | 0.0128*** (0.00184) | 0.0199*** (0.00250) | 0.0221*** (0.00269) | 0.0115*** (0.00197) |
| Race | -0.210* (0.115) | -0.595*** (0.159) | -0.227 (0.157) | -0.187 (0.120) |
| Education | -0.000768 (0.00505) | -0.00635 (0.00676) | -0.0272*** (0.00726) | -0.00909* (0.00540) |
| Income | 3.97e-06*** (1.25e-06) | 7.82e-06*** (1.69e-06) | 5.61e-06*** (1.75e-06) | 7.88e-07 (1.31e-06) |
| Moved in | 0.00697*** (0.00225) | 0.00992*** (0.00302) | 0.00723*** (0.00280) | -0.000878 (0.00234) |
| Year | -0.0482*** (0.0129) | 0.151*** (0.0177) | 0.109*** (0.0168) | 0.123*** (0.0134) |
| Cut 1 | -1.551 (.1300) | -1.629 (.1779) | -1.385 (.1899) | -1.467 (.1380) |
| Cut 2 | -.2891 (.1279) | -.6744 (.1727) | -.4066 (.1873) | -.3884 (.1364) |
| Cut 3 | 1.2777 (.1286) | .5576 (.1718) | .8991 (.1873) | .3255 (.1364) |
| Cut 4 | 2.8785 (.1331) | 2.0547 (.1746) | 2.345 (.1899) | 2.541 (.1407) |
| Rho | .5601 | .1746 | .6947 | .5993 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7: responses to complaint sorted out satisfactorily

| | <i>Intentions to move</i> | <i>Intention to use Private health</i> |
|----------------|---------------------------|--|
| Sex | 0.0311 (0.104) | -0.207 (0.431) |
| Age | -0.0398*** (0.00390) | -0.0257 (0.0162) |
| race | -0.105 (0.227) | 1.051 (1.012) |
| Education | 0.0205** (0.0101) | -0.0636 (0.0500) |
| Income | -4.71e-07 (2.80e-06) | 3.04e-05** (1.42e-05) |
| Sorted out | -0.0240 (0.0370) | 0.333 (0.427) |
| Year | -0.0179 (0.0329) | 0.119 (0.172) |
| Cut 1/constant | -1.989*** (0.268) | -1.7672 (1.159) |
| Cut 2 | -1.318*** (0.264) | |
| Cut 3 | -0.711*** (0.261) | |
| Cut 4 | .09053 (0.260) | |
| Rho | .6446 (.02980) | .7437 (.1585) |
| Loglikelihood | -2594.771 | -98.513773 |
| Observations | 1917 | 264 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix 1: table of descriptive statistics (panel variables)

| Variable | N | Mean | SD | Min | Max |
|----------------------------|-------|------|------|------|-------|
| Vote | 14324 | 0.69 | 0.46 | 0.00 | 1.00 |
| Group | 14738 | 1.92 | 1.50 | 1.00 | 17.00 |
| Know neigh | 15057 | 2.18 | 0.57 | 1.00 | 3.00 |
| Trust | 14530 | 0.51 | 0.50 | 0.00 | 1.00 |
| Satisfaction | 14463 | 3.01 | 1.02 | 1.00 | 5.00 |
| Complain | 14738 | 0.40 | 0.88 | 0.00 | 9.00 |
| Complain(NHS) | 14738 | 0.04 | 0.19 | 0.00 | 1.00 |
| Education lock in | 9064 | 0.28 | 0.45 | 0.00 | 1.00 |
| Health lock in | 14150 | 2.48 | 1.35 | 1.00 | 5.00 |
| Private health | 15054 | 0.16 | 0.37 | 0.00 | 1.00 |
| Moved in | 14920 | 3.94 | 7.71 | 0.00 | 29.00 |
| Like primary school | 10157 | 4.02 | 1.09 | 1.00 | 5.00 |
| Like second school | 10334 | 3.57 | 1.26 | 1.00 | 5.00 |
| Health satisfaction | 14617 | 3.31 | 1.16 | 1.00 | 5.00 |
| Health complaint | | | | | |
| Sorted | 731 | 0.30 | 0.46 | 0.00 | 1.00 |
| Complaint sorted | 28216 | 0.11 | 0.47 | 0.00 | 14.00 |
| Wish to use private Health | 13429 | 0.07 | 0.26 | 0.00 | 1.00 |

Appendix 2: Exit and Voice as a Means of Enhancing Service Delivery (EVMESD) Survey – Questions used in the analysis

What year did you move into your current home?

How likely are you to move from your current home to a new home in the next two years?

Very likely

Fairly likely

Fairly unlikely

Very unlikely

Don't know

Would you say that you know the names of many, a few, or none of your neighbours

Many

A Few

None

Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?

Most people can be trusted

Need to be very careful in dealing with people

Don't know

“Please tell how much you like each of the following about your neighbourhood – using a scale of 1 to 5 where 1 means “do not like at all” and 5 means “like very much”.

1- Do not like at all 2 3 4 5-Like very much Don't Know

Local crime rate

Council services

Local schools

Council tax

Commuting to work
Public transport
Neighbours
Private leisure facilities
Public leisure facilities
Access to schools
Local pollution and noise levels
Access to countryside

Gross household income is the combined money income of all those earners in a household including wages, salaries, or rents and BEFORE tax and contributions to national insurance are deducted. Into which of the following bands does your gross household income fall?

- 1- £1 to £9,999 per year (£1 to £199 per week approximately)
- 2- £10,000 to £19,999 per year (£200 to £399 per week approximately)
- 3- £20,000 to £29,999 per year (£400 to £599 per week approximately)
- 4- £30,000 to £39,999 per year (£600 to £799 per week approximately)
- 5- £40,000 to £49,999 per year (£800 to £999 per week approximately)
- 6- £50,000 to £59,999 per year (£1,000 to £1,199 per week approximately)
- 7- £60,000 to £69,999 per year (£1,200 to £1,399 per week approximately)
- 8- £70,000 a year or more (£1,400 or more per week)
- 9- Don't know
- 10- Prefer not to answer

To which of these groups do you consider yourself to belong?

- 1- White British
- 2- Any other white background
- 3- White and Black Caribbean
- 4- White and Black African
- 5- White and Asian

- 6- Any other mixed background
- 7- Indian
- 8- Pakistani
- 9- Bangladeshi
- 10- Any other Asian background
- 11- Black Caribbean
- 12- Black African
- 13- Any other black background
- 14- Chinese
- 15- Other ethnic group
- 16- Prefer not to answer

BASE: To parents

Are you or have you ever sent any of your children to a fee paying day school?
[Please do not include universities where fees are paid][CLEARLAST]

Yes - I am currently sending one or more of my children to a fee paying school

Yes - I used to send one or more of my children to a fee paying school

No - as yet I have not sent my child / any of my children to a fee paying school

BASE: To parents who are not currently and have not sent a child to a fee paying school

Good private day schools (i.e. not boarding), sometimes called independent schools, typically charge fees of £10,000 per child per year.

Imagine you have one child aged eleven years old who is soon to start secondary school and that you are living where you are now with the same choice of State schools as now. Imagine also that your household income increases by £20,000.

Under these circumstances would you send your child to a private school at a cost of £10,000 per year or would you send them to one of the state schools local to you?

Private school

State school

Don't know

How confident are you that if you were ill or injured and you went to your local NHS hospital for treatment you would be...

Treated within an appropriate timeframe for that injury?

Very confident

Fairly confident

Neither confident nor unconfident

A little unconfident

Very unconfident

Imagine private health insurance, which would cover 90% of health care costs for private GPs and hospitals, would cost you £600 per year. Major operations, if you chose to have them done privately, would cost several thousand pounds.

Imagine also that your income increased by £1000. Under these circumstances how likely are you to take out private health insurance?

Very likely

Fairly likely

Fairly unlikely

Very unlikely

Have you complained about any of the following public services in the last 12 months? [Please tick all that apply][CLEARLAST]

Local Hospital

Including anything to do with the way in which you or your family received medical treatment

Local GP

Including anything to do with the way in which your GP treated you or your family

Educational Service

Including anything to do with school services

Council housing services

This includes management and maintenance of council owned homes

Local education services

This includes provision of schools for children and community education

Household refuse collection

This concerns the collection of domestic waste

Housing services

This includes helping the homeless, dealing with properties in disrepair (including providing grants) but does not include council housing services

Local environmental services

This includes street lighting, cleaning of streets, environmental health, council run tips and recycling centres

Local cultural and leisure services

This includes parks, sports and leisure facilities, council libraries, museums, galleries and cultural facilities.

Local planning services (including land use, development)

This includes planning land use, approving planning applications and implementing building regulations

Local transport services

This includes maintaining roads, bus subsidy schemes, car parking schemes

Social services: adult

This includes council day care, home support (including meals on wheels) and residential care

Social services: children

This includes family support, child protection, fostering and adoption services

Payment of Housing Benefit and Council Tax Benefit

This includes administration and payment of these benefits to claimants

None of the above

Has the problem you addressed now been sorted out to your satisfaction?

Yes

No

Did you manage to vote in the last local election in your area?

Yes

No

Can't remember/ Don't know

In the last 12 months, that is since the end of June last year, have you done any of the following? [Please tick all that apply][CLEARLAST]

Attended a public meeting or rally

Taken part in a public demonstration or protest

Met with neighbours to complain or lobby

Signed a petition None of the above

Please tick the box alongside any sort of groups, clubs or organisations you've taken part in, supported or helped, over the last 12 months.

Children's education/ schools

Youth/children's activities (outside school) Education for adults Sports/exercise (taking part, coaching or going to watch) Religious (e.g. church) Political (e.g. a group fighting for a particular cause or issue, political party) Trade union

The environment, animals

Justice and Human Rights

Citizens' Groups

Local community or neighbourhood groups The elderly Health, Disability and Social welfare Safety, First Aid Hobbies / Recreation / Arts/ Social clubs

Internet group or chatroom

Other