

# SOCIAL NETWORKS: THEIR ROLE IN ACCESS TO FINANCIAL SERVICES IN BRITAIN

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Almost one in ten adults in Britain do not use mainstream financial services. Most of them are not in paid employment. However, most people without paid work have accounts. Two hypotheses have been put forward: (i) reluctance by financial institutions to serve low-income customers; and (ii) information failure on the part of non-consumers. Using two different data sources, we find that non-consumers of financial services are distinguishable from consumers only by belonging to social networks where financial services usage is relatively low. As social networks play a key role in transmitting information, this supports the information failure hypothesis.

## I. Introduction

There has been a debate in Britain over recent years around the issue of financial exclusion – the potential difficulty that some members of the population have in being able to use mainstream financial services such as bank accounts or home insurance. Consolidation of the banking industry over the years means that there are now a limited number of banks. Many (but not all) the mutually owned building societies which traditionally offered savings (and sometimes current) accounts mainly to individual (as opposed to business) customers, along with loans for house purchase, have converted to company status and operate more like mainstream banks. The combination of greater use of telephone and internet banking and bank mergers has led to branch closures which have been concentrated in inner city areas. One of the fears on the part of policymakers and groups representing consumer interests is that greater concentration has reduced competition and has made access to banking services more difficult (Cruickshank 2000; Office of Fair Trading 1999; Social Exclusion Unit/HM Treasury 1999).

A parallel development is that the British government has announced that all social security benefits (covering retirement pensions, unemployment and sickness insurance, disability benefits, child benefit and income support for people in need) will in future be paid into bank accounts. This change has already happened for

new claimants and will apply to existing recipients from April 2005. Up until the change most benefit recipients have received order books containing vouchers to be used each week, fortnight or month, or girocheques, both of which have enabled them to draw cash at Post Offices. Many of those who receive their benefits in this way, especially pensioners, do have bank accounts, but enjoy the social aspects of visiting the Post Office. Others find it easier to manage a limited budget in cash. In future all benefit recipients will be obliged either to have a bank account into which their benefits can be paid, or to open a special account with the Post Office. But the policy change does require that many of those who currently operate their daily lives on a cash basis should become consumers of financial services. Moreover, the move to pay all benefits into bank accounts will only be implemented successfully if the recipients have accounts into which their benefits can be paid.

In Britain, most adults already have a bank, building society or Post Office account. Estimates of the proportion without accounts of any sort vary according to the source of the data, but they point to fewer than 10 per cent of adults having no accounts at all. This amounts to some 2½ million people. (See Meadows (2000) for a fuller discussion of these results and their wider context.) It is not clear the extent to which these

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people are being refused access to banking services by providers, who perhaps perceive them to be a bad risk or unprofitable (which would support the oligopoly hypothesis), or whether they have chosen to use cash for all their financial transactions. In turn, this choice not to use financial services could be an informed one, or it could be based on an information failure.

Previous research (see, for example, Kempson and Whyley 1999) has identified a number of the characteristics of people who are non-users of financial services. Patterns of non-use are related to employment status, income, housing tenure, age and ethnicity. Although the application of statistical analysis finds that a number of explanatory variables have coefficients which are significantly different from zero, the explanatory power of such models is rather weak. In particular, the overall ability of the models to predict successfully which individuals do or do not have accounts is not particularly good.

A practical way in which this is reflected is in the fact that within the various sub-groups of the adult population defined by age, gender, ethnic origin, housing tenure, employment status, income or family circumstances, a clear majority are users of financial services. In other words, the identifiable differences between users and non-users of financial services are not striking.

The aim of this paper is to test the hypothesis that the use of financial services by a person's family and friends is an important influence on whether they will use financial services themselves. The idea that the particular social network of an individual may exercise a powerful influence on the use or otherwise of financial services has not previously been tested. Our theoretical model is described more fully in Ormerod and Smith (2000).

Section 2 of the paper describes the data, section 3 the key empirical results, and section 4 sets out the conclusion. An appendix provides a more comprehensive list of empirical findings.

## 2. The data

We used two separate sources of data for our analysis. The first was the Family Resources Survey from 1997/98. This is an annual survey undertaken on behalf of the Department of Social Security whose primary purpose is to inform government policy on benefits and pensions.

The sample size is large (41,800 adults living in 23,500 households) and nationally representative in order to provide detailed information about the assets and income from different sources of recipients of state benefits. It also contains information about usage of financial services both by the individual and by other members of the household, and extensive information about household circumstances. It is made available for research use via the ESRC Data Archive.

We also wanted to extend the concept of the social network beyond that of members of the immediate household to encompass both friends and relatives more generally. The second data set used in our analysis was derived from the monthly Omnibus Survey carried out by the Office of National Statistics. In ten months each year the survey interviews a nationally representative sample of around 1600 adults. In addition to standard questions, which are used for classificatory purposes, special questions are inserted mainly on behalf of government departments or research organisations. For the purposes of this research, the ONS included on our behalf four questions in the Survey in two successive months. The first asked all of the 3,450 adults interviewed whether they had a bank, building society or Post Office account, and which sort of account they had. The other three asked the 1,627 who were not in paid work:

“How many of the other people in your household do you think have bank, building society, post office or similar accounts?”

“How many members of your family do you think have bank, building society, post office or similar accounts?”

“How many of your friends do you think have bank, building society, post office or similar accounts?”

The two data sets each have their own advantages. For example, the ONS survey augmented with the above questions contains a richer description of the relevant social network of individuals than does the FRS data, and relates to a more recent time period than the FRS dataset which we used. The latter is not only a much larger sample, but contains information not just on account holdings but on the holding of financial assets such as National Savings or whether or not the individual has an employer's pension scheme.

Previous research (for example, Kempson and Whyley

**Table 1. Usage of financial services by household members (non-working sample)**

	<i>row percentages</i>
Accounts held by other household members	Proportion of individuals with some kind of account
Current account	94
Other bank or building society account	93
Any account	93
No account	21

Source: Family Resources Survey, 1997/98.

1998 and Office of Fair Trading 1999) has shown that the overwhelming majority of people who do not have accounts are not in paid work, a finding reflected very clearly in the data sets we used for our analysis. Only an extremely small percentage of people in work do not have accounts. It is very probable that these are effectively *choosing* not to have an account. The history of consumer goods and services shows that penetration rarely reaches 100 per cent. For example, around 3 per cent of British households do not have colour television, and 1 per cent do not have television at all.

The ONS Omnibus Survey found that 99 per cent of respondents with jobs (full-time or part-time) had an account of some sort. The Family Resources Survey with its larger sample size is likely to be better at picking up very small groups. This found that 97 per cent of those with full-time jobs and 95 per cent of those with part-time jobs had accounts. Moreover, around half the full-time workers and a third of the part-time workers without accounts live in households where someone else has one. This is particularly true for young people. Overall, nearly 99 per cent of people with full-time jobs have access to banking or savings facilities either in their own right or via another member of their household.

Our statistical analysis was therefore confined to people without paid jobs. In the FRS survey, around 19,500 sample members were not in paid work at the time they were interviewed. In the ONS survey, 1627 were not in paid work.

Simple cross-tabulation of the FRS data showed that an individual's usage of financial services is strongly correlated with usage by other household members.

Similarly, the more detailed social network questions we

**Table 2. Use of financial services by family and friends (non-working sample)**

	<i>column percentages</i>	
Use of accounts by friends and family	Proportion of sample who have some kind of account	Proportion of sample who have no accounts of any kind
All or most have accounts	87	38
Some have accounts	6	26
Few or none have accounts	2	14
Don't know	6	21
Total	100	100

Source: ONS Omnibus Survey March/April 2000.

asked in the ONS survey show a very clear distinction between the social networks of those with and without accounts.

### 3. The empirical results

More formal analysis of the data sets was carried out using logistic regression. This technique is appropriate where the outcome being measured (in this case not having an account of any kind) is a 0,1 variable (Hosmer and Lemeshow 1989). The purpose of the analysis is to see whether the observed distribution of 0,1 outcomes can be explained by factors whose incidence varies within the population at risk.

We took not having an account rather than having one as our dependent variable. Although this makes describing the results cumbersome at times, it was the minority rather than the majority behaviour which we were seeking to explain. Not using financial services can be conceptualised analytically as equivalent to suffering from a disease, and we wanted to identify the factors which were associated with a higher and lower likelihood of having the condition rather than not having it. Thus odds ratios greater than one represent an increased probability of not having an account, and odds ratios less than one represent a reduced probability of not having an account.

We used Stata 6 for much of the analysis. However, given that estimation of the logit model involves iterative techniques, researchers have sometimes reported different results using identical data sets but different statistical packages (Hosmer *et al.*, 1997). We therefore replicated our results using the package S-Plus, which was also used for the bootstrapping analysis reported below.

A final point to note before discussing the results in detail is that we report results for a subset of the total number of individuals in the two data sets, namely for those of working age. The reason for this is that in the ONS data there are relatively few individuals over 65 who do not have an account of any kind. Only 48 out of the total of 771 individuals over 65 fall into this category, and so the results may be distorted because of small sample bias.

The results obtained from the much bigger FRS data set suggest that whilst age does have some effect on whether an individual does or does not use financial services, it is a distinctly marginal one. We did estimate models using the whole of the data set and including relevant variables for the over 65s and their family status. We also estimated separate models for those of working age and those above working age. These detailed results can be obtained from the corresponding author. In this paper, we present results only for those of working age, and simply note some of the differences in the results for the over 65s.

We began our modelling by including the characteristics which previous research had identified as having important associations with not having an account, together with other indicators of asset ownership or of poverty which were available in our data sources. Most of the variables used in the analysis were 0, 1 dummy variables. Where these represented an underlying question with multiple coding, one category was omitted to form the base for the estimates. The odds ratios for the other categories are the odds compared with the base case. In general, but not invariably, the category where the probability of not having an account was the smallest was the one which was omitted in order to aid clarity.<sup>1</sup>

To allow for interaction between age, gender and marital status, the population was divided into two age groups: those under 25 and those aged 25–64. These groups were then classified by gender and marital status (married, single, widowed, divorced or separated, cohabiting). The smallest groups presented collinearity problems, and so some of them were combined. For example there were few widows under 25 and so they were combined with the separated and divorced for both analyses. Moreover, some of the groups had coefficients which testing showed were identical to the coefficients of closely related groups. For example in the 25–64 age group the coefficients for men who were single, widowed, divorced and separated were statistically

indistinguishable, as were those for women in the same marital status groups. The groups were therefore combined.

Although the numbers of some of our initial categories for the dummy variables for the FRS analysis (for example region) were large to take advantage of the large number of observations, the outcome was a very large number of insignificant variables. They were therefore combined into larger groups, while maintaining the metropolitan/non-metropolitan distinction, which seemed to be useful.

We found that some variables were consistently statistically insignificant. These included, for example, whether or not someone was registered disabled. These variables were omitted from the analysis reported here. Otherwise, if one variable within a category (for example an ethnic origin variable) was statistically significant, all the other variables in the category were left in the analysis. Omitting statistically insignificant categories has the same effect as combining those categories with the base category.

### *Family Resources Survey*

As explained above, our analysis proceeded from the assumption that those who have jobs could have bank or building society accounts if they wished. They are non-consumers of financial services rather than suffering from financial exclusion. Our analysis was therefore confined to the 19,516 members of the sample who were not working at the time of the survey, and the results reported in detail here relate to the 11,172 of working age. Of this group, 2604 (24 per cent) did not have an account of any kind.

The analysis of this sample, both including and excluding the social network variables, gave results which are qualitatively similar to those previously reported, although previous research has not focused on non-workers alone. The detailed results reported are those which include the social network information.

For example, relative to similar people living in the South-East of England, individuals in a number of regions, most notably Strathclyde in Scotland, were more likely not to use financial services. People of Indian, Pakistani or Bangladeshi origin were more likely not to have accounts than otherwise similar white people. Those who live in social housing were more likely than owner-occupiers not to have an account.

Those who have an illness or disability that limits their daily activities were roughly a third more likely not to have an account than those who have no such illness.

People living in households with three or more adults (either with or without children) were markedly more likely than couple households not to have accounts. Distance from the labour market was also important. The probability of not having an account increases for each year since someone was last working. Being divorced or separated increased the risk of not having an account in all age groups compared with married men aged 25–64.

Income does have a small but statistically significant effect on the probability of having an account. An additional £10 a week in income reduces the probability of not having an account by some 3 per cent. The source of income also matters. A pension from a former employer halves the probability of not having an account; maintenance from a former partner reduces it by a factor of some 2½. Receiving means-tested benefits on the other hand increases the probability by around a half.

Other features associated with being less likely not to use financial services were: living alone, leaving full-time education at the age of 21 or older; having a telephone; and living in a household with a car. With these latter three categories, of course, the probability of not using financial services is reduced ie: individuals with these characteristics are more likely to use them. In the earlier stages of our modelling, we also tested for an association with ownership of other consumer durables including computers and satellite television, but no others were significant. Car ownership is frequently used in social research as an indicator of wealth, since there is a strong correlation between the two except in some of the more affluent parts of London. However, in the Family Resources Survey the effect of car ownership remains even though we have also included direct indicators of wealth.

Two particularly well-determined variables relate to the information available on financial assets held by individuals. For example, having National Savings reduces the chance of not having an account by a factor of around 3; whilst for other investments the factor is a reduction of around 10.

However, the greatest impact on the odds of having an account when all other factors are taken into

**Table 3a. Prediction performance of the model for individuals of working age excluding social network information (Family Resources Survey)**

Actual	Predicted		Total	
	Has account	Does not have account		
Has account	7907 (92.3%)	661 (7.7%)	8568	
Does not have account	1302 (50.0%)	1302 (50.0%)	2604	
Total	9209 (82.4%)	1963 (17.6%)	11172	

**Table 3b. Prediction performance of the model for individuals of working age including social network information (Family Resources Survey)**

Actual	Predicted		Total	
	Has account	Does not have account		
Has account	8124 (94.9%)	444 (5.1%)	8568	
Does not have account	703 (27.4%)	1901 (73.0%)	2604	
Total	8827 (79.0%)	2345 (21.0%)	11172	

consideration is whether or not anyone else in the household has one. If another member of the household has a current account, this reduces the likelihood that an individual will not have an account by a factor of almost twenty-five. In other words, the social network variables exercise a powerful influence.

This can be seen in the very marked improvement of the fit of the model to the data once this factor is included in the model. Excluding the information on other household members' account holding, we found that the likelihood ratio with 44 degrees of freedom was 3939 and the pseudo  $R^2$  is 0.325. Including this information increases the likelihood ratio to 6235 and the pseudo  $R^2$  to 0.541. The log likelihood of the former model is -4096 and of the latter -2948.

The most decisive evidence of the impact of social network information is in the classification power of the models. Table 3a shows the results for the model without this information, and table 3b for the model which includes it.

Without the information on other members of the household, the model predicts that 50 per cent of those without an account should have accounts. It therefore correctly classifies as not having an account only 50 per

cent of those who actually do not have them. Including the information on other members of the household changes these results markedly, with only 27 per cent of those without accounts being classified as having them, and 73 per cent of those without being classified correctly. In each case, the incorrect classification of those with accounts is very low.

Very similar results in terms of classification were obtained with the sample of individuals over 65. Indeed, these results overall were close to those obtained with the working age sample. The biggest difference between the two relates to the possession of financial assets other than an account, where the impact of having such assets on reducing the probability of not having an account is higher for the older sample.

### *ONS Omnibus Survey*

The Office of National Statistics Omnibus Survey is a monthly face-to-face interview survey conducted in the respondent's home. It is based on a stratified sample of postal sectors and a random sample of addresses within the sector. Once an address has been selected, the person interviewed is selected at random. In the two months when our fieldwork took place, a total of 3,450 adults were interviewed. Of these 1,627 were not working, and of those 180 did not have any sort of bank, building society or Post Office account. (A further 18 people in paid employment also did not have accounts). Again, we report results for the subset of these of working age. Our data set includes 856 individuals in this category, of whom 132 (15 per cent) did not have accounts.

Because of the nature of the survey, we had less information about individual and household circumstances in this survey than we did in the Family Resources Survey. We had information on tenure, type of household, broad income group, ethnicity, region, and level of education. We included car ownership as a proxy for wealth. A dummy variable was included for those who had never worked who would not have had a chance to have a higher income in the past. Nor would they have encountered an employer wishing to pay them by cheque or credit transfer.

As with the analysis of the Family Resources Survey, we allowed for the possibility that there might be some interaction between age, gender and marital status variables by dividing the population into fifteen groups: under 25, 25–64 and over 65, male or female, and single, married and widowed, divorced or separated.<sup>2</sup>

The most important feature of the models (apart from the social network variables discussed below), again estimating them with and without the social network variables, in distinguishing those with accounts from those without, was living in rented rather than owner-occupied housing. Renting from a local authority or housing association increased the chances of not having an account by a factor of six compared with owner occupiers, as did 'other' tenure, which in this survey included private renting. One explanation in this context is that owner-occupiers who did not already have accounts may have opened one when they took out their mortgages. Our FRS analysis also found that social tenure was an important indicator, although the effect was considerably smaller. Moreover, no other tenure group had a significant effect. It is therefore probable that in this analysis, tenure is also capturing the effects of some of the indicators not captured by the Omnibus Survey, but which are closely correlated with it, such as receipt of income-related benefits.

From an overall qualitative perspective, the results were very much in line with those obtained using the FRS data.

The variables on use of financial services by members of a person's social network once again had large and significant effects. The model without these variables could account for only a small proportion of the differences between users and non-users of financial services. The pseudo  $R^2$  at 0.28 was low. The predictive power was exceptionally poor. Although more than 98 per cent of those with accounts were identified correctly, 81 per cent of those without accounts were also predicted to have them. In other words, according to the model the overwhelming majority of those without accounts were indistinguishable from those who have them.

The social network variables have large effects once included, both individually and in terms of contributing to the overall power of the model. Those with very few or none of their friends and family having accounts are nearly twelve times more likely not to have one themselves than people who have all or most of their friends and family using financial services. People who have some friends and family members with accounts, and those who do not know about financial services usage, are around six times more likely not to have an account than those who have all or most of their friends and family as financial services users.

In terms of the fit of the model, the pseudo  $R^2$  increases

**Table 4. Model predictions including social network variables (ONS Omnibus Survey)**

Actual	row percentages			
	Predicted		Total	
	Has account	Does not		
Has account	691 (95.4%)	33 (4.6%)	724	
Does not have account	66 (50.0%)	66 (50.0%)	132	
Total	757 (88.4%)	99 (11.6%)	856	

to 0.37. The predictive power of the model also improves. The proportion of false positives rises a little (from 1.5 to 2.5 per cent), but the proportion of false negatives falls from 84 per cent to 50 per cent.

The improvement is marked, suggesting once again that social networks play an important role in providing information and influencing choices. Overall, however, the models estimated with the ONS data are less powerful than those obtained with FRS data, reflecting both the smaller sample size and the smaller number of potential explanatory variables available with the former data set, except of course for the social network variables.

The predictive power of the model including the social network variables is summarised in table 4.

#### 4. Robustness of parameter and standard error estimates

The results above set out the odds ratios (derived from the parameters) and their standard errors from a conventionally estimated generalised linear model. The robustness of these results can be checked using the modern method of bootstrapping, which is a way of testing the reliability of the dataset, and in particular of providing an indication of the extent to which results may have been influenced by sampling error (Venables and Ripley 1997).

This procedure in general makes use of extensive repeated resampling with replacement from the original sample population to explore the sampling distribution of the parameter of interest,  $\theta$ . Since the original sample population is drawn from an underlying population, resampling from this sample with replacement is equivalent to drawing a fresh sample from the underlying population. The bootstrap distribution of  $\theta$  therefore represents the sampling distribution of  $\theta$  based on drawing many samples from

**Table 5a. Coefficients obtained by single and bootstrap estimation (ONS Omnibus Survey)**

	odds ratio = exp (parameter estimate)		
	Don't know if friends or family have accounts	Few friends or family have accounts	Some friends or family have accounts
Single logistic glm	2.241	2.295	1.985
Bootstrap estimate	2.458	2.581	2.135

Note: Omitted category: all or almost all friends and family have accounts

**Table 5b. Confidence intervals of coefficients from single and bootstrap estimates (Omnibus Survey)**

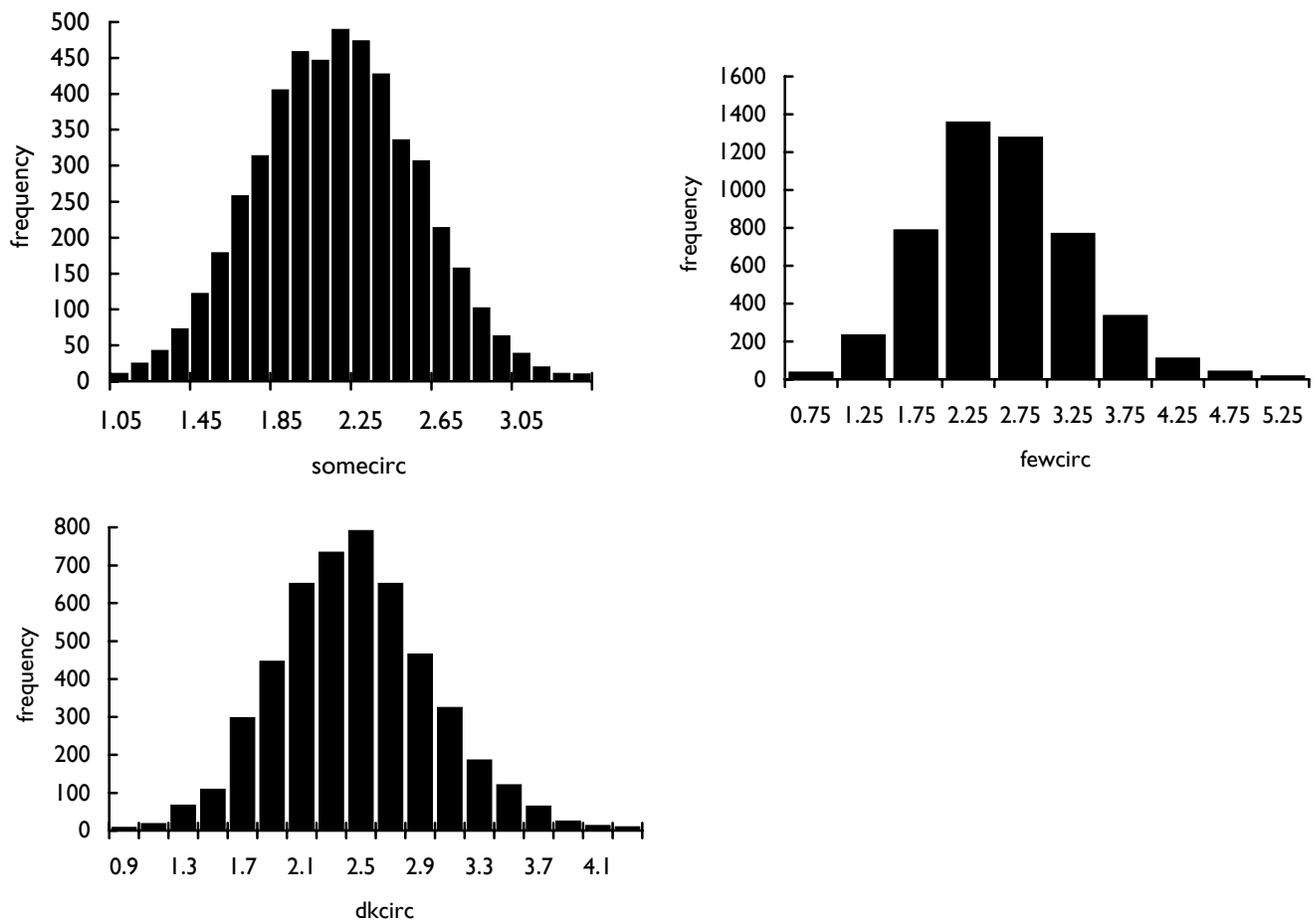
	Don't know if friends or family have accounts	Few friends or family have accounts	Some friends or family have accounts
Single fitted glm			
95% C.I.s			
lower	1.362	1.265	1.350
upper	3.119	3.324	2.619
Bootstrap estimate			
95% C.I.s			
lower	1.415	1.103	1.344
upper	3.502	4.060	2.925

the underlying population. In this case, of course,  $\theta$  is the set of parameters from the logistic regression.

For each of the equation specifications reported below in tables 6 and 7, we re-estimated them 5,000 times using sampling with replacement. For example, the FRS model is estimated using information on 11,172 individuals. We drew a sample of length 11,172 from this data, sampling with replacement. The model reported in table A1 was then estimated with this new data set. The procedure was repeated a total of 5,000 times.

The confidence intervals for the results reported in tables A1 and A2 make the assumption that the parameters are normally distributed. Bootstrapping is a powerful way of checking the validity of this assumption, producing as it does an empirical distribution for each of the parameters in the model.

Apart from one or two minor variables, bootstrapping essentially verifies both the point estimates and the confidence intervals of the coefficients which underlie tables A1 and A2. The empirical distributions from the

**Chart I. Histograms of bootstrap parameter estimates (ONS data)**

bootstrapping of most of the parameters have a slightly larger spread than is implied by the initial model, but the difference is small.

As an illustration of these results, tables 5a, 5b and chart 1 set out results from the bootstrapping exercise for the three social network variables used in the ONS data set. Table 5a shows the single logistic parameter estimates from table A2, along with their average values in the bootstrapping exercise. Chart 1 shows the distribution of these parameters across all 5,000 repetitions. Table 5b shows the 95 percent confidence intervals of these estimates along with that from the logistic regression in table A2.

Graphical representations of the results of bootstrapping for all the parameters in these models is available from the authors.

## 5. Conclusions

Data from two sources independently suggest that although people who do not use financial services are drawn largely from the non-working population, they are similar in many ways to the four out of five non-employed adults who do use mainstream financial services. There are some differences between the two groups, but these differences are not sufficient to enable users and non-users to be distinguished. Moreover, in each survey, there were some members of the sample who did not have accounts even though their predicted probability of not having them was very low. In each of our models these false positive observations had a strong influence on overall goodness of fit.

These findings are important in the context of Government proposals to eliminate financial exclusion, since it suggests that most non-users of financial services

are likely to have a risk profile which is similar to that of existing customers drawn from the same population groups. It also suggests that the current range of financial services products may be able to meet the needs of many non-users, and that new institutional arrangements may not be necessary to tackle financial exclusion (although they would extend consumer choice).

Use of financial services by the members of an individual's social network has a strong influence on their behaviour. Non-users are disproportionately drawn from social networks where few or no members have bank or building society accounts. This suggests that conventional marketing methods are not very successful in delivering information about financial services to non-users, and that there is an important information failure in these groups in the population.

## NOTES

- 1 The two exceptions to this were both in the FRS analysis. In that survey income was measured in pounds per week, and the number of years since last worked was derived by subtracting year last worked from 1998. All those who had never worked were originally coded as zero, but this created a variable whose 0 values were collinear with the 1 values of the never worked dummy variable. We therefore omitted the never worked variable and all those who had never worked were coded as 78 (1920 being the earliest date observed in the data set).
- 2 Of course, when using the whole sample rather than just individuals of working age, the third category of "over 65" was also used.
- 3 For statistical reasons it was necessary to amalgamate men and women under twenty-five who were widowed or divorced with those who were single, reducing fourteen categories to ten.

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**Appendix table A1. Logistic regression estimates (Family Resources Survey: working age sample including account holding by other household members). Dependent variable: not having an account**

	Odds ratio	Std. Error	z	P> z	95% confidence interval	
social tenant	1.514***	0.132	4.749	0.000	1.276	1.797
'other' tenure	1.145	0.134	1.154	0.249	0.910	1.441
lives alone	0.290***	0.043	-8.381	0.000	0.217	0.388
three adult household	1.723***	0.212	4.421	0.000	1.354	2.193
two adults plus child(ren)	1.222	0.130	1.887	0.059	0.992	1.506
lone parent household	0.533***	0.085	-3.949	0.000	0.390	0.728
three adults plus child(ren)	3.026***	0.409	8.184	0.000	2.321	3.945
income £ per week	0.996***	0.001	-6.844	0.000	0.995	0.997
Caribbean origin	1.064	0.273	0.241	0.809	0.643	1.759
African origin	0.678	0.205	-1.287	0.198	0.376	1.225
Indian origin	1.810**	0.369	2.910	0.004	1.214	2.699
Pakistani or Bangladeshi origin	1.582*	0.285	2.545	0.011	1.111	2.253
'other' ethnic group	1.232	0.276	0.932	0.351	0.794	1.911
London	1.435**	0.185	2.803	0.005	1.115	1.848
Strathclyde	1.834***	0.291	3.819	0.000	1.344	2.504
English metropolitan	1.411***	0.152	3.195	0.001	1.142	1.743
North and Mid Wales	1.570*	0.362	1.957	0.050	0.999	2.467
South Wales	1.950***	0.347	3.760	0.000	1.377	2.763
South West	1.241	0.202	1.329	0.184	0.902	1.708
East Anglia	1.300	0.286	1.193	0.233	0.845	2.002
Rest of Scotland	1.108	0.193	0.586	0.558	0.787	1.559
Rest of England	1.238	0.145	1.829	0.067	0.985	1.558
left education age 20	0.726**	0.074	-3.162	0.002	0.595	0.885
left education age 21 or over	0.300***	0.046	-7.868	0.000	0.222	0.405
female aged 25-64, married	0.558***	0.072	-4.543	0.000	0.434	0.718
male aged 25-64, cohabiting	1.181	0.285	0.691	0.490	0.737	1.894
female aged 25-64, cohabiting	1.072	0.234	0.320	0.749	0.699	1.646
male aged 25-64, single, widowed, separated or divorced	1.861***	0.266	4.351	0.000	1.407	2.461
female aged 25-64, single, widowed, separated or divorced	1.485**	0.194	3.025	0.002	1.149	1.919
male aged 16-24, married	0.226	0.225	-1.497	0.134	0.032	1.583
female aged 16-24, married	0.603	0.204	-1.496	0.135	0.311	1.170
male aged 16-24, single	0.360*	0.179	-2.051	0.040	0.136	0.956
female aged 16-24, single	1.366	0.423	1.007	0.314	0.745	2.505
male aged 16-24, separated, widowed or divorced	1.333	0.226	1.700	0.089	0.957	1.857
female aged 16-24, separated, widowed or divorced	1.019	0.170	0.112	0.910	0.734	1.414
gets maintenance from a former partner	0.513**	0.121	-2.828	0.005	0.323	0.815
household has car	0.748***	0.062	-3.501	0.000	0.636	0.880
ill health limits daily activities	1.272**	0.099	3.080	0.002	1.091	1.483
has National Savings	0.371***	0.065	-5.666	0.000	0.263	0.523
has other investments	0.097***	0.027	-8.516	0.000	0.056	0.166
receives an employer pension	0.425***	0.073	-4.980	0.000	0.304	0.596
household has telephone	0.643***	0.071	-4.014	0.000	0.518	0.797
receives means-tested benefits	1.431***	0.140	3.667	0.000	1.182	1.734
years since last worked	1.016***	0.001	11.368	0.000	1.013	1.018
household member has a current account	0.040***	0.003	-39.052	0.000	0.035	0.048
household member has another bank or building society account	0.301***	0.029	-12.607	0.000	0.250	0.363
household member has Post Office account	0.322***	0.055	-6.638	0.000	0.231	0.451

Notes: \*\*\* significant at 0.1% level \*\* significant at 1% level \* significant at 5% level. Reference categories: owner occupiers; couple no children household; white ethnic group; living in South East; left full-time education aged less than 20; married men aged 25-64; nobody else in household has account.

**Appendix table A2. Logistic regression estimates (ONS Omnibus Survey: working age sample including social network variables). Dependent variable: not having an account**

	Odds ratio	Std. Error	z	P> z	95% confidence interval	
social tenant	6.485***	2.313	5.242	0.000	3.223	13.045
'other' tenure	5.884***	2.580	4.041	0.000	2.491	13.899
lives alone	0.727	0.332	-0.698	0.485	0.297	1.781
two adult plus child(ren)	1.444	0.604	0.878	0.380	0.636	3.278
lone parent hhld	1.544	0.751	0.893	0.372	0.595	4.007
'other' household	0.515	0.295	-1.159	0.246	0.167	1.582
annual income <£5200	1.872	0.706	1.662	0.096	0.894	3.922
annual income >£5,200 but <£10,400	1.596	0.668	1.117	0.264	0.703	3.625
Caribbean or African origin	1.981	1.228	1.102	0.270	0.588	6.677
Indian origin	0.322	0.429	-0.851	0.395	0.024	4.374
Pakistani or Bangladeshi origin	0.733	0.648	-0.352	0.725	0.130	4.142
'other' ethnic origin	3.495	3.151	1.388	0.165	0.597	20.455
North region	0.890	0.464	-0.223	0.824	0.320	2.475
Midlands	1.080	0.577	0.145	0.885	0.379	3.077
London	1.657	0.998	0.838	0.402	0.509	5.394
South West	1.179	0.790	0.246	0.806	0.317	4.382
Wales	2.479	1.772	1.270	0.204	0.611	10.064
Scotland	1.526	0.868	0.743	0.458	0.500	4.653
high qualification	0.149*	0.127	-2.242	0.025	0.028	0.787
low educational qualifications	0.382	0.220	-1.671	0.095	0.124	1.181
other educational qualifications	0.681	0.433	-0.606	0.545	0.196	2.365
no educational qualifications	0.769	0.271	-0.748	0.455	0.386	1.532
female aged 16-24, married	0.943	0.638	-0.086	0.931	0.251	3.552
female aged 16-24, single, widowed or divorced	2.761	2.282	1.229	0.219	0.547	13.951
male aged 16-24, married	0.652	0.502	-0.556	0.578	0.144	2.948
male aged 16-24, single, widowed or divorced	3.961	3.087	1.766	0.077	0.860	18.246
female aged 25-64, married	0.767	0.293	-0.694	0.488	0.363	1.623
female aged 25-64, widowed or divorced	0.601	0.313	-0.978	0.328	0.217	1.666
male aged 25-64, widowed or divorced	1.129	0.779	0.176	0.860	0.292	4.369
female aged 25-64, single	1.691	1.126	0.789	0.430	0.458	6.237
male aged 25-64, single	1.649	1.102	0.748	0.455	0.445	6.112
never had paid work	1.405	0.524	0.912	0.362	0.676	2.920
household has car	0.565	0.171	-1.889	0.059	0.312	1.022
don't know if friends or family have accounts	9.398***	4.213	4.998	0.000	3.903	22.627
few friends or family have accounts	9.920***	5.209	4.370	0.000	3.544	27.765
some friends or family have accounts	7.279***	2.357	6.131	0.000	3.859	13.729

Notes: \*\*\* significant at 0.1% level \*\*significant at 1% level \* significant at 5% level. Reference categories: owner occupiers; couple no children household; income above £10,400; white ethnic group; living in South East; GCSE or A level qualifications; married men aged 25-64; all or most friends or family have accounts.