Determinants of advice seeking within defined contribution retirement savings schemes

Gordon L. Clark

Smith School of Enterprise and Environment, University of Oxford, South Parks Road, Oxford, OX1 3QY, United Kingdom. +44 (0)1865 285197, gordon.clark@smithschool.ox.ac.uk

Maurizio Fiaschetti

SOAS, University of London, Thornhaugh Street, London, WC1H 0XG, United Kingdom, Phone: +44 207 898 4754, Fax: +44 (0)20 7898 4009 . Email: mf51@soas.ac.uk

Smith School of Enterprise and Environment, University of Oxford, South Parks Road, Oxford, OX1 3QY, United Kingdom. +44 (0)1865 614934, maurizio.fiaschetti@ouce.ox.ac.uk

Paul Gerrans (corresponding author)

UWA Business School, The University of Western Australia, 35 Stirling Highway, Crawley WA 6009, Australia. Phone: +61 8 6488 2910, Fax: +61 8 6488 1047 Email: paul.gerrans@uwa.edu.au

Abstract. We report results from a study of superannuation member advice-seeking within their plan, explaining observed patterns by member age, gender, issue salience, and size-of-bet effect. Inquiry mode, frequency and volume of contact with the advice-provider, and sensitivity of members to legislative change and macroeconomic events are considered. Results show that gender (female more likely than male), age (older rather than younger), balance (larger rather than smaller) and experience (longer rather than shorter), are the strongest advice-seeking predictors, consistent over time. Findings suggest member engagement around retirement planning may be more effective when considering the factors affecting advice-seeking behaviour in general.

Determinants of advice seeking within defined contribution retirement savings schemes

1. Introduction

In Australia, as in many OECD countries, defined contribution (DC) retirement savings schemes have come to dominate the flow of supplementary retirement savings. Employers have retreated from offering defined benefit (DB) plans variously attributed to unwillingness to accept responsibility for making defined benefit promises, higher administrative costs, as well as regulatory (e.g. accounting) and economy based (e.g. workforce composition) factors (Turner and Hughes). However, the consistent narrative describing the average DC member is either they are disengaged (Butt et al. 2017; Commonwealth of Australia 2010, 2014; Productivity Commission 2016)[1] or ill-equipped (e.g. Committee for Sustainable Retirement Incomes 2017) to make financial decisions consistent with their long-term best interests possibly compounded by a lack of sophistication at the institution.[2] Policy makers also blame consumers (members) for the "absence of consumer competition" (Productivity Commission 2016, iv) that results from the asserted disengagement and manifests in higher fees. Given this, individuals have been encouraged to be better informed about issues relevant to their long-term welfare.[3] Some governments have simply bypassed the issue in favour of requiring the provision of retirement savings products, primarily defaults, to be consistent with the long-term interests of the average plan participant.

Policy makers have also encouraged retirement savings schemes to take a more active role in providing information and, at the limit, advice relevant to their members. However, little is known about the take-up of this information and advice; about what issues, when, and in what contexts; and to what effect *if* the advisor or advisors were genuinely disinterested in the outcome. Moreover in any event, the average DC plan member may have little interest in expending the time and effort necessary to seek advice from informed third parties, as the benefits from a change in behaviour by seeking advice may be hard to envisage a priori.

Lusardi and Mitchell (2011) have observed that DC members could benefit from financial advice given their limited financial literacy. There are, of course, legitimate concerns about the virtues or otherwise of financial advisors, especially in circumstances where interests are shrouded or concealed (Gabaix and Laibson 2006). In this context, study of participant-initiated advice-seeking[4] is intrinsically important because understanding its patterns and determinants can shed light on financial behaviour as well as design of savings institutions (Clark, Strauss, and Knox-Hayes 2012; Thaler and Sunstein 2008). Our study is also important because we are able to elicit patterns and determinants of advice-seeking

---

[1] Commonwealth of Australia (2010, 9) note they do not wish to overstate the issue of disengagement however.
[2] See de Dreu and Bikker (2012).
[3] For example, UK Governments have promoted public awareness programs to cope with the lack of information about how and how much to save in different stages of the life cycle.
[4] By 'advice' we use a common-sense understanding of the term, signifying a broad range of participants' concerns rather than the particular legal meaning of the term associated with fiduciary duty.

where the provider is motivated to honour participant's interests as opposed to product providers, such as banks, who distribute via incentivised advisers.

We also investigate time patterns of advice-seeking finding that its year-by-year increasing volume can be disaggregated into components including a daily effect (within a week), and a seasonal effect (including an end-of-tax-year effect and a summer vacation effect). We highlight a singular, noteworthy episode in the volume of advice-seeking across the entire time period: prior to the peak in the financial bubble, a major legislative change concerning superannuation benefits announced a year before coming into force on July 1, 2007. Notwithstanding the lead-time between announcement and legislation effect, we show that advice-seeking was concentrated to the weeks before and, to a limited extent, following its implementation.

We contribute to the existing literature regarding the behavioural drivers of financial decision making in general, highlighting gender. Then, by focusing on a singular event, we provide empirical evidence on the dynamic process of news salience and individual action. Finally, regarding industry practice, we provide evidence of patterns in participants initiated advice seeking beneficial to design of effective tailored facilities. Overall, it is demonstrated that age (being older rather than younger), gender (being female rather than male), and the size of a person's account balance (larger rather than smaller) are significant predictors of advice-seeking. These findings carry three implications: (i) those predisposed to plan for the future by virtue of age benefit most from advice-seeking, (ii) since the demand for advice is different by gender, the design and management of the provision of advice would seem to be significant issues, and (iii) advice-seeking was concentrated immediately before the implementation of the superannuation changes. The timing of release of information (public and private) thus merits greater attention.

2. Background

Decision-making can be characterised according to the nature and frequency of the decision(s) taken given the topic or issue. To set the issue in context we present a model of individual behaviour underlying the institutional context in which plan participants make decisions and seek advice. We make three assumptions. First, individuals are intendedly rational (Doherty 2003), i.e. given their goals and objectives, they choose what they perceive to be the most effective instruments (means) available to realise the ends.[5] Second, making plans depends upon searching for, and sorting amongst, the available information concerning options and changing circumstances (Sharpe 2007). Third, searching and sorting available information is costly. Given limited cognitive and material resources, individuals tend to economise on these tasks.

Research in the cognitive sciences suggests that the average person has a limited capacity to absorb, synthesise, and evaluate large volumes of information. With a never-ending flow of

---

[5] Intention is emphasized rather than results, matching the argument of Simon (1956) that the latter depend also on cognitive constraints and external circumstances (i.e. 'environment').

information, which adds to ambiguity over the proper course of action rather than resolving ambiguity, many people tend to delay taking a decision until they must (Ju and Miao 2012; O'Donoghue and Rabin 1999). In these circumstances, events that stand out can receive more attention than deserved (Barberis 2013). Loss aversion has been suggested as a key factor explaining low activity in retirement savings (Fry, Heaney, and McKeown 2007; Hwang and Satchell 2010). Together these suggest that the role of advice seeking as a means of reducing the anxiety about risky outcomes (Gennaoili, Shleifer, and Vishny 2012) in retirement, including losses, may be influential.

2.1. Logic of decision making

While retirement planning and saving for the future have long-term consequences, this does not necessarily mean that decisions once taken are maintained long-term. Retirement planning has been shown to be an issue fraught with uncertainty and depends upon individual and collective capabilities and resources (see Clark, Strauss, and Knox-Hayes 2012). Assuming a predisposition in favour of saving for the future, its effectiveness depends upon: (1) knowledge and understanding of the issues; (2) relevant skills and expertise; and (3) the resources (money, networks, and advisory services) required to make informed decisions. Lusardi and Mitchell (2007) suggest that financial decision-making in general, and retirement-planning in particular, are decisions demanding domain-specific skills and expertise. To the extent individuals recognise their shortcomings in this regard, this may dampen their confidence in retirement planning-or they may seek advice.

Hung and Yoong (2010) support the substitutability of financial literacy and advice seeking. However, Hackethal, Haliassos, and Jappelli (2011) find that it is wealthier and more knowledgeable individuals who seek advice consistent with a complementary advice-seeking and financial literacy relationship. Calcagno and Monticone (2015) similarly support complementarity claiming 'advisors are not useful to the investors who need them the most', depicting a picture of a conflicted advisor who sells products that compromise outcomes for the uninformed client. We are more optimistic about the substitutability argument here, given the absence of a direct financial incentive for the agent providing advice to members.

In terms of specific drivers of advice-seeking, Gamble et al. (2015) describe how a change in cognitive abilities, typically age-related, affect the decision making process, suggesting that a decline in cognition will generally increase the probability of seeking help. It is hypothesised that seeking advice is age-related, in that the consequences of making related decisions are more transparent and consequential for older members. Younger members tend to heavily discount the future, and may simply ignore the issue, in these circumstances. Holding age constant, it is further hypothesized that individuals in seeking advice may (in effect) aim to compensate for apparent shortcomings in terms of preparedness.

4

As a series of financial decisions, in a context of risk and uncertainty, retirement planning is also affected by risk (loss) tolerance. Possible responses to apparent risks involved in making financial decisions can include exercising caution, delaying making a decision, collecting more information, and seeking advice. Here, though, the evidence seems to suggest that men tend to back their judgment whereas women tend to prevaricate (Levin, Snyder, and Chapman 1988). Levav and Argo (2010) reveal that women feel more comfortable in engaging with risky decisions if a sense of security is evoked by physical contact or listening to a real person rather than using advisory services. By contrast, men tend to trust the web for finding relevant information and informing decision-making (Riedl, Hubert, and Kenning 2010). The effect of these gender differences must, of course, be combined with other observed (e.g. income, wealth) and unobserved variables.

2.2. Institutional setting

The Australian system requires all employers to make contributions on behalf of their employees to a complying superannuation fund with no guaranteed results by either the government or employer.

The compulsory setting necessitates a role of defaults, both in terms of contributions (most often the legislative requirement) and investment strategy for those contributions. Empirical evidence highlights the significance of defaults given the apparent reluctance of members to make changes (Beshears et al. 2009) even through periods of great uncertainty such as the global financial crisis (Gerrans 2012). A lack of change does not imply disengagement from retirement savings (Bateman et al. 2014) and instead may reflect a underlying trust in the plan's default choice or recognition of a lack of skill by members (Butt et al. 2018). No matter the motive, this behaviour underscores the need to "carefully assess what default settings public policy and plan architects should encourage" (Dobrescu et al. 2018, 1078).

The Australian environment is apparently rich in information. The print media, the visual and spoken media, and electronic networks are awash with financial information in general and retirement matters in particular. This information is uneven in terms of quality; but, it is both ubiquitous and effectively cost-free. [6] The flow of information is situated in the market for information and, as a consequence, is not always trusted because of the (often shrouded) interests of commercial providers. In these circumstances, members may seek advice from 'safe havens' unsullied by the market for information, and with no apparent commercial interest in priming and prompting action. We expect that there are peaks and troughs in advice-seeking, along with a growing volume of advice-seeking which reflect (in part) the surplus of information in the market on retirement savings and the superannuation industry, and the responses of similarly situated individuals to this environment.

---

[6] Furthermore there are numerous subscription based commercial providers of information tailored to topics such as investment strategy, investment options, and the like.

3. Data description and model set-up

A feature of our research lies in the nature of the database analysed which is comprised of unsolicited requests for information.

3.1. Data Overview—Overall Patterns of Advice Seeking

Data comes from Mercer (Australia) and their Super Trust, Corporate Division. The Super Trust (ST) is the agent for more than 180 private sector employers, large and small, covering 567,451 individuals across the period 2002–2013. The database has a wide range of individuals, including those that earn little over the course of the year through to those that earn very high salaries. It represents a significant sample of the Australian economy and society. For each individual, we have gender, postcode, date of birth, date joined (left) the company, salary, account balance, employer contributions, and voluntary additional savings as described in Feng and Gerrans (2014).

Mercer's ST provides a range of services from a common platform. With respect to advice-seeking, Mercer has two ways of providing advice: a telephone call centre (introduced mid-year 2004), and a web-based enquiry facility (introduced in early 2008) which is dealt with by call centre staff. The telephone helpline is common to all participating employers and their plan participants. It is a centralised facility, open weekdays 8am to 7pm. As each call is received, the Mercer adviser records the topic or topics raised during the call. Over the period 2004 –2013, approximately 70 categories were used to code the topics. Of the more than 1.5 million topics raised by callers over the entire period, 40 of the topic categories received fewer than 1000 statements of interest. In general, three groups of categories can be identified (in descending order of significance): administrative matters; investment matters; and retirement planning[7].

In Figure 1, call frequency is displayed over the period 2004–2013. From the introduction of the call facility in mid-2004, the growth in volume of calls lagged member growth, and it took approximately two years for activity to reach a 'steady-state', with a peak in the volume of calls mid-2007 followed by a slight upward shift in calls during 2012. In Section 5.4, we look more closely at the circumstances prompting the spike in calls, and identify certain regularities in calling frequency. With the closure of the call facility on Saturdays and Sundays, call volume tends to be low on Mondays, peaks on Tuesdays, declines on Wednesdays and Thursdays, and dies out on Fridays. In terms of monthly frequencies, call volume is highest in June (the Australian tax year concludes June 30), is lowest in December (including the Christmas and New Year holiday period), gathers momentum in March and May of each year, and then tails off once the tax year has passed.

[Insert Figure 1]

The upward trend in call volume on a monthly basis was slight, biased by the initial two years in which participants became aware of the facility, and the last two years where the call volume began

---

[7] When seeking advice, callers (and web-users) often reference a range of issues, some administrative and some in terms of investment decision-making. Hard-and-fast distinctions between categories as implied by legal definitions of advice do not do justice to the complex interaction between the various concerns that may prompt a call.

to increase. Variance in call volume was dominated by the day-of-the-week (81% of the total variance) and seasonal (18.50%) effects. The monthly effect contributed 0.40%, and the week-of-the-year effect contributed just 0.12%.

With the introduction of the web enquiry facility mid-2008, there was an immediate surge in web requests. Thereafter, volume declined, and in 2013 was at about 60% of the initial interest. While the web facility is accessible every day, peaking on Sundays, enquiries are dealt with during weekday office hours. Web enquiries peak mid-year and are the lowest over the December/January period.[8] By the end of the period, those that previously used the call facility tended to also use the web facility. Those that only used the web were, on average, younger than those that used the web and the call facility (36 versus 42 years), had lower salaries ($65,000 versus $80,000 per year), and had far lower account balances ($25,000 versus $60,000). On each of these measures, those that used only the web facility were more similar to one another than those that used the web and the call facility in tandem.

The period covered by our analysis includes one of the most significant episodes of economic and financial turmoil experienced by OECD countries over the past 100 years. It is reasonable to hypothesise that over the period 2004–2013, changes in macroeconomic circumstances and changes in consumer expectations would have prompted associated changes in the volume of calls. Upon investigation, no such statistical relationship was found.[9]

3.2. Data Analysis—Predictors of Call Enquiries

To answer the question regarding what drives the member to call for advice and assess the importance of various predictors of calling behaviour, four mutually exclusive calling groups were identified: those who made no calls (*Not Called*); those who called once (*Called Once*); those who called two to seven times (*Called Average*); and those who called more than seven times (*Called Frequently*).

3.3. Descriptive Statistics

In the complete dataset (n=567,451) 55.8% of members were in the *Not Called* group. Of the 44.2% that made a call, 39.1% were in the *Called Once* group, 52.0% made between two and seven calls (hence *Called Average*), and 8.9% were in the *Called Frequently* group. On average, there was no obvious gender difference between those who called and those who did not. Beyond gender, remaining predictor variables change in value over the period and hence a specification of the observation is required. The age of a member (*Age*) was taken as age at entry to the plan. The average of annual account balance over the period of membership (*Account Balance*) was used as

---

[8] Once the web facility was introduced, younger men rather than younger women took-up this option (as expected). We do not know whether the benefits of the call option are framed by the agent and/or the participating sub-plans in ways that 'induce' more women than men to use it.

[9] Quarterly percentage change in call volume was regressed against quarterly percentage change in: GDP; employment; the Australian stock exchange index; and consumer expectations of economic conditions over the next five years (all seasonally adjusted). The same estimation using monthly data was also investigated excluding GDP. No variables were found significant and the overall F-test was not significant. Full details are provided in the online supplementary file, Table S.1 and Table S.2.

was the average annual salary (*Salary*). Finally, the number of years in the plan (*Membership*) was included to ensure we control for opportunity to make a call.[10]

A preliminary analysis (see Table 1) showed that on average those in the *Called Average* group relative to the *Called Once* group were slightly older, had more years of sub-plan membership, and had significantly larger account balances and incomes. Those in the *Called Frequently* group relative to those in the *Called Once* group were significantly older, had much higher incomes and had account balances three times those in the *Called Once* group.

[Insert Table 1]

Calling behaviour is associated with consequential retirement savings behaviours. Overall, 19.2 percent of members made a change to their investment strategy over their membership. However, if a member has made a call, the proportion is 24.6 percent whereas for non-callers it is 12.8 percent. The same pattern is evident for additional savings behaviour. Overall, 28.1 percent of members choose to make additional contributions beyond employer contributions received. Again, if a member made a call the proportion is 37.0 percent whereas for non-callers it is 18.8 percent. Whereas the timing and frequency of calling behaviour is known, timing of other behaviours is not, hence causality is not able to be drawn from these relationships.

3.4. Model specification

For our empirical analysis we estimate a multinomial logit using the four groups of calling behaviour as specified in equation 1. We obtain J-1 equations providing the predicted probabilities for an individual to belong to the correspondent J-1 groups which we estimate simultaneously to obtain the marginal effects presented in the next section.

$$Pr(\blacklozenge = m | \blacklozenge) = \frac{exp(x\beta_{m|b})}{\sum_{j=1}^{J} exp(x\beta_{j|b})} \tag{2}$$

where b is the benchmark category and x is a vector of predictors previously defined. To capture the opportunity to access the web portal, two indicator variables were included. The first reflects whether the member had web access available through their membership period (*No Web Access*) and the second reflects whether they had web access and used it (*Access, Web User*). The omitted category consists of those who had access but had not used the web. Additionally, fixed effects were included for member location. To explore moderation of effects, *Age, Gender*, and *Account Balance* were interacted with one another in the estimation. Finally, residuals were allowed to cluster by sub-plan membership. Given correlations between the explanatory variables, variance inflation factors (VIF) were estimated. The highest VIF of 2.11 for *Account Balance* suggests multicollinearity is within acceptable limits (Chatterjee, Hadi, and Price 2000).

To ensure a robust set of results, given the amount of heterogeneous information provided by the database, we estimate the multinomial logit model twice. The first time participants are grouped

---

[10] The unconditional correlation between age and membership length is 0.125.

according to their calling behaviour, thus addressing the probability of not-calling (group 1), calling once (group 2), etc. In our second estimation we focus on the means used to seek advice: we comment the model and its results in Section 4.2.

We choose to conduct our empirical analysis on the salience of the singular event by estimating a logit model, specified in equation 2, addressing the probability of each participant to be a caller during the event horizon:

$$Pr(\diamond = 1|\diamond) = G(\beta_0 + \diamond\beta_1) \tag{2}$$

where x is the vector of predictors as defined above. Results for the singular event analysis are presented in Section 5.

4. Multivariate Analysis

4.1. Calling Behaviour: marginal effects—direction of influence

Table 2 presents a summary of marginal effects calculated at mean values of remaining variables. It is helpful when considering the relative size of these marginal effects to compare the baseline predicted probabilities of being in each group reported in the first row for each outcome.

[Insert Table 2]

Gender was significant in three of the four groups. Males were more likely (4.7 percentage points) to be in the *Not Calling* group and less likely to be in the *Called Once* (1.5 percentage points) and *Called Average* (3.0 percentage points) groups. No gender difference was observed for being in the *Called Frequently* group. The marginal effect of *Membership* had expected signs consistent with an 'exposure' control. That is, those in the fund longest were more likely to be in the *Called Average* and *Called Frequently* groups and less likely be in the *Not Called* group. *Age* was positively associated with being in the *Called Average* or *Called Frequently* groups and negatively associated with being in the *Not Called* or *Called Once* groups. However the effect magnitude is small.

Salary and *Account Balance* both had a positive association with being in all three calling groups and a negative association for the *Not Called* group. This is consistent with other evidence of non-default activity by members in a single-sector fund (Dobrescu et al. 2018; Gerrans and Clark 2013). However, the magnitudes are small. For example, a one unit change in the *Salary* increases[11] the probability of being in the a one-time caller by 1.0 percentage point, an average caller by 3.0 percentage points, and a frequent caller by 0.5 percentage points. The increase in *Salary* reduces the probability of not calling by 4.4 percentage points. A similar change in *Account Balance* reduces the probability of not calling by 6.6 percentage points, and increases the probability of calling an average number of times by 5.4 percentage points. The probability of

---

[11] We note that the analysis allows comment on correlation not causation.

being in the *Called Once* group increases with *Account Balance* but the effect is small in magnitude. Considering the overall prediction of being a frequent caller (2.0 percent), the marginal effect of 0.7 percentage points was relatively large.

Those without web portal access were more likely to call as were those who made use of their web portal access, relative to those who had access to the portal but did not utilise it. The probability of being in the *Not Called* group was 30 percentage points lower for those who accessed the fund web portal, 4.5 percentage points higher for being in the *Called Once* group, 22.4 percentage points higher for *Called Average,* and 3.8 percentage points higher for *Called Frequently*.

To explore robustness of marginal effects we reclassified calls so that to be classified as a separate advice event the call would need to be more than 30 days following a previous call. The supplementary file provides estimation results (Table S.3) using the same call categories reported in Table 2 but based on the new count. Results are substantively unchanged.

To investigate the hypothesis that those seeking advice compensate for apparent shortcomings such as financial literacy we utilise a proxy, as suggested by Lachance (forthcoming), namely the proportion of those in the member's postcode with university education (*University Education*) and re-estimate the model. We find that remaining marginal effects are largely unchanged (refer supplementary file Table S.4) though results are contrary to those hypothesised. *University Education* is negatively related to the likelihood of not seeking advice and positively associated with seeking advice (calling or web) suggesting rather than a compensatory role of advice-seeking, education complements advice seeking.

The estimation allows investigation of how the marginal effects on the probability of a member being in a calling group interact by gender, age and average account balance. Figure 2 highlights that the increased likelihood of males not calling was constant by age for those with a lower account balance ($50,000; the smallest account balance), declined with age for the smallest account balance, and marginally increased for larger account balance. The gender effect was less evident for younger members with larger account balances and the gender difference is more homogenous across account balances for older members. A significant negative marginal effect for males being in the *Calling Once* category was isolated to those with the lowest account balance, consistent for all but the oldest members. In contrast, the negative male marginal effect for the *Called Average* group was more homogenous across the other account balance levels and age levels. The marginal effect of males on being in the *Called Frequently* group was not evident for any age for the lowest account balance level. A negative marginal effect emerges for older members and in turn larger for larger account balances.

[Insert Figure 2]

Figure 3 shows that the marginal effect of age on the probability of being in either calling group was not moderated by gender, with the exception of the *Called Frequently*. Here, the age effect

was lower for males with the largest account balance, and overall, the impact of age was significantly moderated by member account balance. The marginal effect of age on the probability of not calling was significantly lower for those with the lowest account balance. It is only those with lower account balances that the negative marginal effect of age was significant for the *Not Called* group. The marginal effect of age on being in the *Called Once* group was negative for all account balance levels, but largest (i.e., most negative) for those with higher account balances. The positive marginal effect for age for being in the *Called Average* group was positive for the two lowest account balance levels only.

[Insert Figure 3]

The *Called Frequently* group is notably different in the role of age and size of account balance. The marginal effect of age, shown in increases with member account balance and along with evidence of variation by gender, was only significant for the larger account balances. Figure 4 confirms this by presenting the marginal effect of account balance as larger for older members, moderated by gender for those with the largest account balance. A final comment on the *Called Frequently* group was the marginal effect of being a user of the fund web portal. The marginal effect was positive but not as strong as for those in the *Called Average* group which suggests differing roles or motivations. It may be that those in the *Called Frequently* group were seeking, not just information, but a personal link through the call.

[Insert Figure 4]

4.1.1. Economic magnitude of marginal effects for calling behaviour

Predicted probabilities were estimated for various combinations of *Gender, Age*, and *Account Balance* with all else held at mean values. In terms of being in the *Not Called* group, a 51 percent probability is estimated for a 33-year old female member, with a account balance of approximately

$13,000. By contrast, consider a 50-year old female member with a $100,000 account balance: For her, the probability is 31 percent of not calling. The equivalent male has an increased likelihood of one to three percentage points in both cases. The same 33 -year old, female member with a $13,000 account balance is estimated to have equal probability for *Called Once* or *Called Average* at 24 percent. The older and larger account balance colleague is distinctly different, with a 19 percent chance they would call once against a 42 percent chance they would have called an average number of times. In both classifications, the equivalent male is generally three percentage poi nts less likely. Finally, the young, low account balance female member has only a one percent probability of being a frequent caller against her older and larger account balance colleague, who has a much larger probability of seven percent. The male counterpart is similar in each.

Finally, we also estimated a panel logit estimation of the likelihood of making a call (yes =1) in each year of membership (refer supplementary file Table S.5 for details) to complement the multinomial logit analysis which relies on behaviour aggregated over membership. Once again marginal effects are the same in direction and maintain relative magnitudes among variables.

4.2. Calling and Web Access Combined

A multinomial logit regression was also estimated to examine the combination of using the call centre and using the fund web portal to answer the question whether the drivers of advice-seeking are robust to the means by which the advice is sought or not. Registration is required for those who wish to use the website to make a web-based contact with the agent. The timing or frequency of web access is not known and hence four categories combining calling behaviour and web-access are identified: those that make no use of either (*Not Called, No Web*); those who used the call centre but not the web (*Call, No Web*); those who used the web but did not call (*Web, Not Called*); and those who used both the call centre and the web (*Call and Web*). This allows new insights into behavioural interaction with different advice-seeking facilities, potentially enabling the industry to design better facilities with better content.

As noted, the web facility was introduced in 2008 and therefore the empirical analysis was set 2008 through to 2013. The same set of explanatory variables was included with the exception of membership length. Those whose membership totally precedes the web-portal are not included. Of remaining members some have a membership period both before and after the web-portal was introduced. Others only became members after the web-portal was introduced. We retain this information by breaking down membership into the length preceding the introduction of the web-portal (Pre-Membership), the length of membership after the introduction (Post-Membership), and a indicator variable to capture those who were only members since the web portal was introduced.[12] Variance inflation factors (VIF) were estimated with the highest (2.36) for Pre-Web Membership suggesting multicollinearilty is within acceptable limits (Chatterjee, Hadi, and Price 2000).

4.2.1. Marginal effects—direction of influence

Estimated marginal effects are presented in Table 3. Consistent with the previous analysis of caller behaviour, males were more likely to be in the *Not Called, No Web* and less likely to be in the *Called, No Web* groups. However, the marginal effect of males was positive for *Web Only*, or *Web and Called* groups. Though these effects were small, the overall predicted probability of being in the *Web Only* group (3.3%) and *Called and Web* group (11.9%) is small. Taken together, the results suggest greater preference for the call centre by females and web portal by males.

The marginal effect of *Account Balance* and *Salary* are larger for the likelihood of not using either (*Not Called and No Web*) when compared with the *Not Called* category of the previous estimation. Those with larger account balances and higher salaries are less likely not to make use of both the call centre and the web portal. The reverse is true for the likelihood of using the call centre and the web portal together (*Called, Web*). Member account balance and salary significantly increases the likelihood of using both. *Account Balance* is also positively associated with being in

---

[12] We expect membership length to be important, however, those comfortable with the avenues of seeking advice before the web-portal was available may be different to those who always had the portal available.

the *Called, No Web* group and the *Web, Not Called* group. The more resources, the more likely the member to use the advice facility. Member account balance, however, has a relatively larger impact for using the call centre than using the web portal.

[Insert Table 3]

4.2.2. Economic magnitude of effects on calling behaviour and web portal use

To provide a better sense of the economic magnitude, combinations of *Gender, Account Balance,* and *Age* were considered. A younger (33-year old), female with a small ($13,000) account balance has a 44% probability of not using either the call centre or web portal. If the account balance was instead $100,000 the probability drops to 23 percent. For males, the same inputs yields 47 percent and 24 percent respectively. Looking to predict those who use both the call centre and the web, the younger female with a small account balance has a 10 percent probability compared with 20 percent for the equivalent member with a large account balance. For males, this relative difference is the same at 12 and 26 percent respectively. In short, size and account balance, affect whether a member uses the call centre and web portal.

Finally, age appears to have a differential role. For example, a young (33 -year old), low account balance, female member has a 43 percent probability of being in the *Called, No Web* group. The equivalent 50-year old member has a 48 percent probability. The same comparison for the *Web, Not Called* group yields 2.9% for the younger member and 2.6% for the 50-year old. Older members have a greater likelihood of using the resource but more so for the call centre.

5. A singular event: Announcement of policy reform

A further robustness check for drivers of advice-seeking is investigated focusing on a singular event during the time span of our database. Government policy reforms on retirement incomes offer singular events which have a shared impact among members, in contrast to the previous discussion which focused primarily on member characteristics. The data period includes one such event. In May 2006, the federal government announced its intention to 'simplify and streamline superannuation'. By December 2006, the government had introduced legislation which came into effect on July 1st, 2007.[13] Significantly, provisions regarding tax treatment of savings and benefit payments were modified. Prior age-based contributions were streamlined and limits on account balances accumulated abolished. Benefit payments were to be treated as tax-free for people 60 years and over, and benefits paid to those under 60 years separated into tax-free and taxable components.

These were significant policy changes and the government gave notice more than a year before their implementation. Public commentary on implications was widespread and punctuated by events that brought the issues before the public. Funds, their agents, and financial advisers discussed the changes. By this account, information on the reform of the policy framework was more likely 'ubiquitous' rather than 'discrete', with implications for those interested in making provision for their imminent retirement and those planning for retirement sometime in the future. It is arguable these provisions were most

---

[13] Commonwealth of Australia, Tax Laws Amendment (Simplified Superannuation) Act 2007.

relevant to those aged 60 years or over (contemplating imminent retirement) and those 50 years or over (planning for retirement). For the first group, these changes could have affected retirement decisions (discrete decisions) whereas for the second group these changes may have prompted making a series of changes over the longer term.

5.1.1. Calling frequency and moments

With respect to the pattern of advice-seeking by members in the Mercer ST, it has been noted that the single most important spike in call volume occurred in the three weeks prior to July 1st, 2007[14] and the day immediately following. Notwithstanding the onset of the global financial crisis in 2008 and 2009, this event stands out as exceptional in relation to the entire 2004–2013 period.[15] Here, then, is a test of the robustness of previous findings as regards the status and relative significance of various predictors of advice-seeking behaviour. Notice, web enquiries were not relevant in this case because this facility had not yet been introduced. Having established the call 'window' as June 12th through July 2nd, 2007, those calling before the July 1st moment were deemed *leaders* and those calling after deemed *followers*. Excluded were frequent callers who might have called anyway (2,387), and those that called both before and after the July 1st moment within the call window (51). This left 7,710 leaders and 437 followers.[16]

Within the window, the period leading up to the July 1st moment was obviously far longer than the period immediately following. Also, there were many more callers before the moment than after the implementation of the legislation. Consideration was given to the *Gender, Age, Membership, Account Balance, Salary*, and *Salary Sacrifice* commitments of leaders and followers. Panel A of Table 4 presents descriptive results which suggests that there were no differences between average *Gender, Age,* and *Membership* commitment of leaders and followers. However, tests for differences amongst leaders and followers in terms of the distribution of participants around the mean of each variable suggests statistically significant differences between leaders and followers on *Age* (nonparametric and parametric) and *Salary* (nonparametric only). It would seem that leaders and followers came from the same sample on *Gender, Account Balance*, and *Membership*.

[Insert Table 4]

5.1.2. Estimated model—call behaviour (window and non-window)

A logit model was estimated for the entire period leading-up to June 12th, 2007 and (separately) through the period of the 'window' June 12th–July 2nd, 2007. At issue, as in the previous analysis, was the probability of calling. For consistency, frequent callers were excluded from both samples and overlapping callers were excluded leaving 89,584 pre-window callers and 10,516[17] in the window callers' sample. The results are summarised in Panel B of Table 4. *Gender, Age, Account Balance, Salary*, and *Membership* were significant for both samples, a finding broadly consistent with the findings on the type of caller against the base case. Notice,

---

[14] To choose the starting date of the window we controlled for heteroskedasticity and tested its significance via an ARCH(1) model. We ranked the weighted rate of change (WRoc), the rate of absolute change in the daily frequency of calls, with the single most relevant daily Roc in the whole of 2007 being June 12th.

[15] See Figure 1.

[16] Web access is an indicator variable (accessed the web or not) in our database. We estimated a multinomial logistic model regarding the advice seeking tool within and prior to the peak window, but no significant differences were found and we therefore focus on calling behaviour.

[17] Analysis was based on individuals calling in the peak sample (10,516 as in section 5.4.1) with complete observations.

however, the *Gender, Account Balance, Salary*, and *Membership* effects were stronger for callers during the window than for callers over the prior period. While *Age* was significant for both samples, its effect was stronger over the prior period than through the window.

The analysis is important as it sheds light on the salience of news in driving macroeconomic actions. As Ramey (2011) did with respect to the identification of government expenditure shocks, we too find a dynamic process for the announced reform to affect the individual decision making. Differently from that study, the dynamics we detect are concentrated in a small neighbourhood of the change itself thus signalling a minimisation of the announcement effect.

5.5 Exploring what advice is sought and by whom

Section 4 explained how call topic(s) are recorded which enables their categorisation as *Administrative, Investment*, or *Retirement Planning* related. This permits an analysis of *what* advice is sought and by *whom*. However, a significant limitation is that the relative importance attached to topics isn't recorded. Hence, while the focus is unambiguous when only one topic group is raised, when two or more are raised there is possible ambiguity. To permit an analysis we explore the dominant topic, defined as the topic category logged most in a call. In multiple topic calls where *Investment* and *Retirement Planning* topics collectively dominate *Administration* topics, we classify the call according to whether *Investment* or *Retirement* topics are logged more. Thus we identify *Administration* dominant, *Investment* dominant, *Retirement Planning* dominant calls, and a fourth group for those with no dominant topic. To these groups we add a fifth, those that don't call at all.

With calls classified we estimated predicted group membership using the same predictor variables. We utilise a member's complete membership and estimate a multilevel mixed effects multinomial logistic regression accounting for repeat callers with individual random effects and allow correlation of residuals at sub-plan level. We note that in the overall sample, the majority of calls involve four topics or less (96 percent). The largest proportion of calls is *Administrative* dominant (37 percent) with *Investment* accounting for 26 percent, 20 percent *Retirement Planning*, and 17 percent with no clear dominant topic. Figure 5 demonstrates there is remarkably little variation in the dominant advice topic sought overtime.

[Insert Figure 5]

Our previous analysis identified that males were less likely to call and Table 5 suggests this is the case for *Administrative, Retirement Planning* and *Other* topic calls but not *Investment* dominant. *Account Balance* and *Salary* were identified as positive advice predictors and Table 5 suggests this is true across all topics for *Account Balance* but for *Salary* this is only true for *Investment* and *Other* whereas it is not significant for *Administration* and is negative for *Retirement Planning*. Younger members and those with a shorter tenure are more likely to call for *Administrative* topics whereas older members, and those who have been with the fund longer, are more likely to call for *Investment* or *Other*. As expected, older members are more likely to call for *Retirement Planning*.

[Insert Table 5]

Finally, we explored variation in predictors over time by estimating within separate years, rather than overall. As suggested by Figure 5, just as the spread of topics varies little over time the predictors also display a consistent pattern.

15

We present an example of this in Table S.6 in the supplementary file. An additional insight from this analysis is that it allows a control for prior advice seeking history. Prior advice seeking is a positive predictor of future advice, and more so in the same advice area. For example, while all types of advice seeking were positively related to seeking advice for an investment purpose, the largest effect was for where the prior advice sought was also investment.

6. Conclusions

Two key points should be made before considering the implications of findings. First, our study is set in an institutional context which we expect participants to view as at least benign[18] (unsullied by a commercial interest in giving advice) and/or supportive of participants' decision-making (being a 'service' provided by the employers' agent). We note that our analysis does not have access to participant traits or attitudes including their trust in the fund which may also explain behaviour such as advice seeking or monitoring (Deetlefs, et al. in press).[19] Second, in large part, it is reasonable to suppose that advice-seeking is not a case of 'primed' behaviour—that is, in some way differentially encouraged or induced by the agent.[20] As such, observed patterns of advice-seeking should be seen as voluntary.

The paper's premise is that individuals seek advice when confronting an issue that is salient or claims their attention over and above other issues that tax an individual's cognitive and decision-making resources. Overall, it was found that the predictors of advice-seeking were gender (female rather than male), age (older than younger), account balance (larger than smaller), and experience (longer rather than shorter). Note the gender effect was less evident once the web-portal was introduced (the portal drew in younger male advice-seekers than the call facility). Most people in our sample, most of the time, do not make a retirement savings 'decision' and do not seek advice. A minority sought advice over the period 2004–2013 and, among the advice-seekers, a majority sought advice just once. Furthermore, advice-seekers were a special segment of the Super Trust members - those that had an immediate and substantial stake in the performance and structure of the superannuation system.

This brings us to the singular event; that is, the spike in call activity which occurred in June 2007 prior to the web-portal. We found no difference between those that called before and those that called after. Looking at the window period, the gender effect swamped all the others.[21] The account balance effect was less important than experience in the fund compared to previous findings over the entire period (with or without the web-user factor). Likewise, being older rather than younger was less important. There is a measure of continuity joining the entire period with the spike in call activity; nevertheless it is arguable that the latter was actually 'different' than the patterns observed elsewhere. It is notable, in fact, that during the singular event window the volume of

---

[18] On the effect of 'self-interest' on the effectiveness of financial advice see Kuang, Weber, and Dana (2007).

[19] We also note that the attitudinal information can only be collected for a subset of members, which Deetlefs, et al. (in press) note present with a more engaged profile, whereas here we can utilise the full membership in our analysis.

[20] To the extent this is not the case, for example where targeted member engagement campaigns were used over the period by the fund, a secondary analysis controlling for fixed year effects provides consistent results.

[21] This holds even if the incentive effects of a large account balance are held in abeyance. Being female increased the probability of seeking advice over the entire period and, especially, during the 'window' containing the singular event.

calls virtually doubled (June 2007), the gender effect was more pronounced and salary effect dominated, rather than the account balance effect.

Our results are surprising in that those seeking advice during the singular event window did so as the window closed, not when these changes were first mooted, or when legislation passed. Why procrastinate and wait until the last moment to seek advice? Three possible explanations are relevant. First, whereas we conceptualised retirement planning as a 'continuous' decision situated in a world of ubiquitous information, it could be the case that most participants treat these types of decisions as 'discrete', only paying attention when an issue arises that is so significant that it 'activates' them.[22] Second, given the flow of information, most people realised they could, in fact, wait until the last moment before acting on their intentions and when they responded, a significant portion sought advice before acting (if at all). Third, having announced its intention government prompted participants to delay making a commitment until they had to (thereby freeing attention for other issues).

Three factors could explain the evidence on patterns of advice-seeking across the entire period with respect to calling versus not calling, calling versus not calling with or without the web facility, not calling, and being an average caller (or a frequent caller), against calling just once. Specifically, these results can be explained by reference to the issue of gender, stage of life-cycle, and material well-being. The spike in calling, though, would seem to warrant deeper analysis than that shown above.

A preliminary investigation of the predictors of the dominant type of advice sought suggested relatively little variation over time. Predictors of who called were also influential predictors for what advice was sought. Additionally the positive role of salary was isolated to seeking investment advice whereas account balance was influential across all topics. Age positively predicted, as expected, seeking retirement planning advice.

Having identified the significant correlates of seeking advice our results allow speculation as to the underlying driver at work in each which might serve to mobilise the interest of retirement savings plan participants. For instance, the finding that web-users are younger, have lower account balances, and have less experience in retirement savings plans implies that this is a 'pathway' that could be utilised by sub-plans and agents to encourage participants to take advantage of the advice facility. Similarly, the significance of gender suggests that female participants could also be brought into affinity groups (stratified by account balance, experience, etc.) with issue-specific foci. Likewise, bringing in men into the equation would seem to need a distinctive strategy, rather than a generic strategy. While our results are only a first step in better understanding the patterns

---

[22] This explanation can be buttressed by recent research in cognitive science to the effect that many people compress complex issues, spread over time, into distinct issues amenable to routine treatment, until these heuristics can't be applied or the magnitude of an issue becomes concerning. The logic of the issue is deliberately violated, then, so as to economise on effort (over time). Where an issue is presented that demands effort outside of the parameters of the decision-rule, those that put in the effort appear to be those for whom the issue is most salient. This provides a rationale for the patterns of those that did and did not seek advice.

of participant-initiated advice-seeking, they suggest that mobilising participants may be more successful when framed around specific topics rather than assuming retirement planning and saving for the future is salient to all, whatever the circumstances.

7. References

Barberis, N., 2013, The Psychology of Tail Events: Progress and Challenges, *American Economic Review* 103, 611-616.

Bateman, H., J. Deetlefs, I. Dobrescu, B. Newell, A. Ortmann, and S. Thorp, 2014, Just Interested or Getting Involved? An Analysis of Superannuation Attitudes and Actions, *The Economic Record* 90, 160-178.

Beshears, J., J. J. Choi, D. Laibson, and B. C. Madrian, 2009, The importance of default options for retirement savings outcomes: Evidence from the United States, in J. R. Brown, J. R. Liebman and D. A. Wise eds, *Social Security Policy in a Changing Environment* (University of Chicago Press, Chicago, IL) 167–195.

Butt, A., M. S. Donald, F. D. Foster, T. Susan, and G. Warren, 2018, One size fits all? Tailoring retirement plan defaults, *Journal of Economic Behavior and Organization* 145, 546-566.

Butt, A., M. S. Donald, F. D. Foster, S. Thorp, and G. J. Warren, 2017, Design of MySuper default funds: influences and outcomes, *Accounting & Finance* 57, 47-85.

Calcagno, R., and C. Monticone, 2015, Financial literacy and the demand for financial advice, *Journal of Banking & Finance* 50, 363-380.

Chatterjee, S., A. Hadi, and B. Price, 2000, *Regression analysis by example* (Wiley, New York).

Clark, G. L., K. Strauss, and J. Knox-Hayes, 2012, *Saving for retirement: Intention, context, and behaviour* (Oxford University Press, Oxford).

Committee for Sustainable Retirement Incomes, Retirement Income: Focussing on the endgame cited 20/01/2018, available from https://csri.org.au/2017/08/01/retirement-income-focussing-on-the-endgame/

Commonwealth of Australia, 2010, Super system review final report (The Treasury, Canberra, Canberra).

———, 2014, Financial System Inquiry (Treasury, Canberra).

de Dreu, J., and J. Bikker, 2012, Investor sophistication and risk taking, *Journal of Banking & Finance* 36, 2145-2156.

Dobrescu, L. I., X. Fan, H. Bateman, B. R. Newell, A. Ortmann, and S. Thorp, 2018, Retirement Savings: A Tale of Decisions and Defaults, *The Economic Journal* 128, 1047-1094.

Doherty, M. E., 2003, Optimists, pessimists, and realists, in S. L. Schneider and J. Shanteau eds, *Emerging Perspectives on Judgement and Decision Research* (Cambridge University Press, Cambridge) 643–679.

Feng, J., and P. Gerrans, 2014, Patterns of voluntary worker retirement savings: A longitudinal analysis.

Fry, T., R. Heaney, and W. McKeown, 2007, Will investors change their superannuation fund given the choice?, *Accounting and Finance* 47, 267-283.

Gabaix, X., and D. Laibson, 2006, Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets*, *The Quarterly Journal of Economics* 121, 505-540.

Gamble, K., P. Boyle, L. Yu, and D. Bennett, 2015, Aging and Financial Decision Making, *Management Science* 61, 2603-2610.

Gennaoili, N., A. Shleifer, and R. Vishny, 2012, Money Doctors Cambridge, MA).

Gerrans, P., 2012, Retirement savings investment choices in response to the global financial crisis: Australian evidence, *Australian Journal of Management* 37, 415-439.

Gerrans, P., and G. Clark, 2013, Pension plan participant choice: Evidence on defined benefit and defined contribution preference, *Journal of Pension Economics and Finance* 12, 351-378.

Hackethal, A., M. Haliassos, and T. Jappelli, 2011, Financial advisors: A case of babysitters?, *Journal of Banking and Finance* 36, 509-524.

Hung, A. A., and J. Yoong, K., 2010, Asking for help: Survey and experimental evidence on financial advice and behavior change., *Working Paper Series*

Hwang, S., and S. E. Satchell, 2010, How loss averse are investors in financial markets?, *Journal of Banking & Finance* 34, 2425-2438.

Ju, N., and J. Miao, 2012, Ambiguity, Learning, and Asset Returns, *Econometrica* 80, 559-591.

Kuang, X., R. Weber, and J. Dana, 2007, How effective is advice from interested parties?: An experimental test using a pure coordination game, *Journal of Economic Behavior & Organization* 62, 591-604.

Lachance, M.-E., forthcoming, Financial literacy and neighbourhood effects, *The Journal of Consumer Affairs* DOI: 10.1111/joca.12024.

Levav, J., and J. J. Argo, 2010, Physical Contact and Financial Risk Taking, *Psychological Science* 21, 804-810.

Levin, I. P., M. A. Snyder, and D. P. Chapman, 1988, The Interaction of Experiential and Situational Factors and Gender in a Simulated Risky Decision-Making Task, *The Journal of Psychology* 122, 173-181.

Lusardi, A., and O. Mitchell, 2007, Baby Boomer retirement security: The roles of planning, financial literacy, and housing wealth, *Journal of Monetary Economics* 54, 205-224.

Lusardi, A., and O. S. Mitchell, 2011, Financial literacy around the world: an overview, *Journal of Pension Economics and Finance* 10, 497-508.

O'Donoghue, T., and M. Rabin, 1999, Doing It Now or Later, *American Economic Review* 89, 103-124.

Productivity Commission, 2016, How to assess the competitiveness and efficiency of the superannuation system Canberra).

Ramey, V. A., 2011, Identifying Government Spending Shocks: It's all in the Timing*, *The Quarterly Journal of Economics* 126, 1-50.

Riedl, R., M. Hubert, and P. Kenning, 2010, Are there neural gender differences in online trust? an fMRI study on the perceived trustworthiness of ebay offers, *MIS Quarterly* 34, 397-428.

Sharpe, W. F., 2007, *Investors and Markets: Portfolio Choices, Asset Prices and Investment Markets* (Princeton University Press, Princeton, NJ.).

Simon, H. A., 1956, Rational choice and the structure of the environment, *Psychology Review* 63, 129–138.

Thaler, R. H., and C. R. Sunstein, 2008, *Nudge* (Yale University Press, New Haven).

Turner, J. A., and G. Hughes, Large declines in defined benefit plans are not inevitable: The experience of Canada, Ireland, the United Kingdom, and the United States (Pensions Institute.

Determinants of advice seeking within defined contribution retirement savings schemes

FIGURES
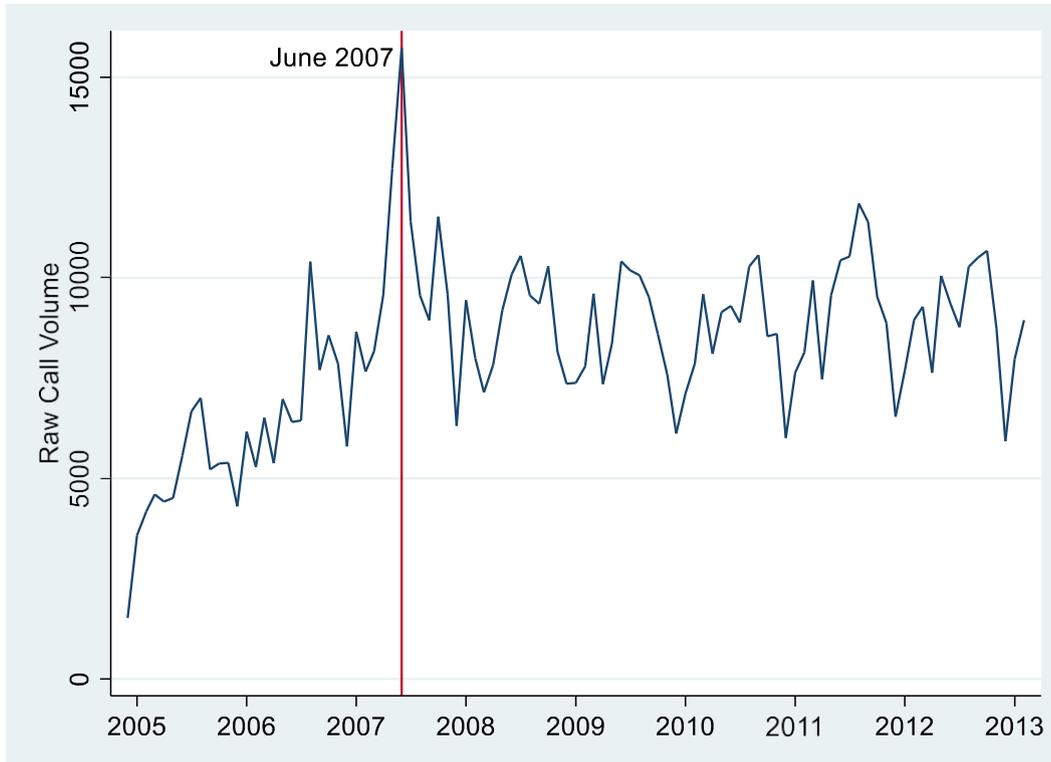
Figure 1 Monthly frequency of calls

Figure 2 Gender Marginal Effects (Male) by Age, Account Balance on Call Behaviour
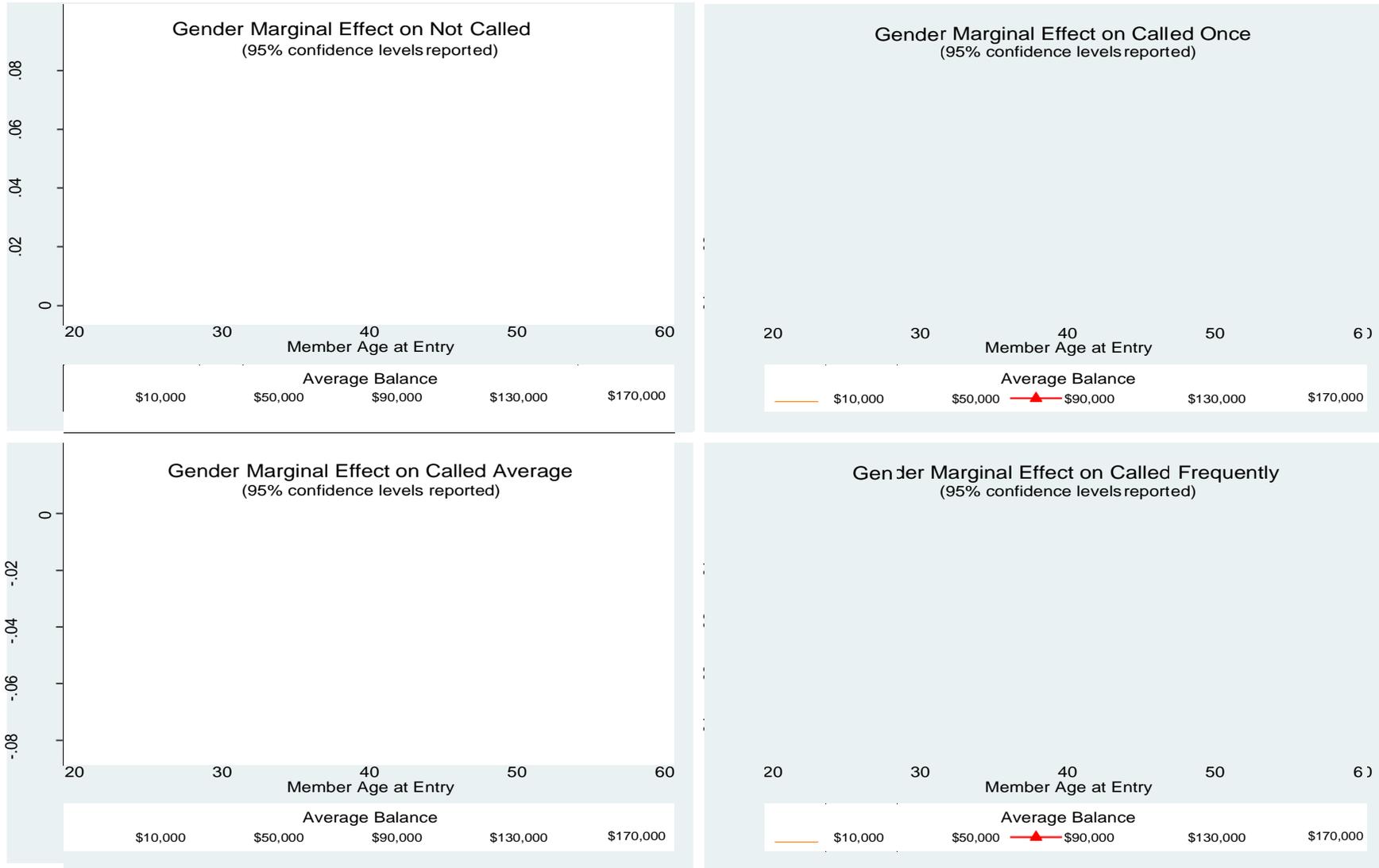
Figure 3 Marginal Effects of Age by Gender and Account Balance on Call Behaviour
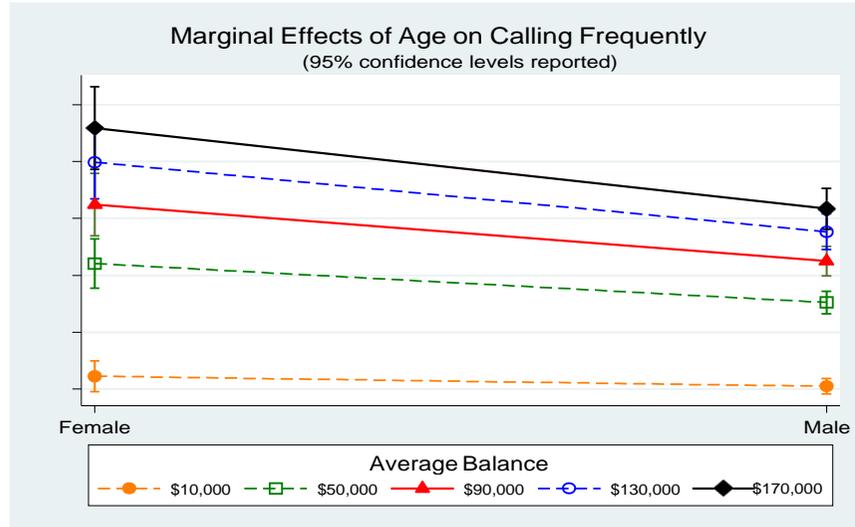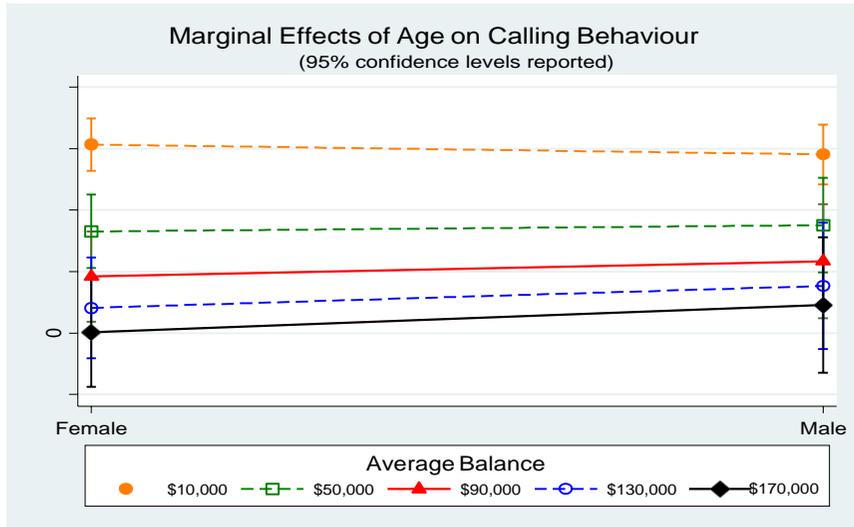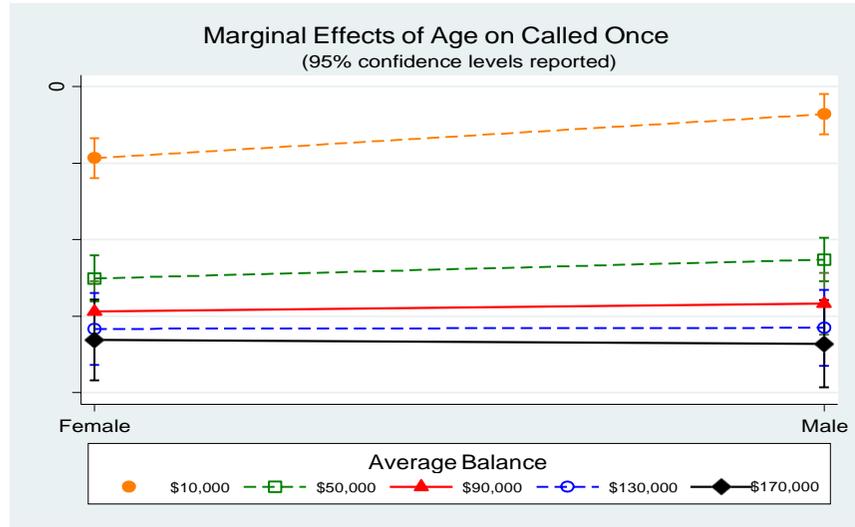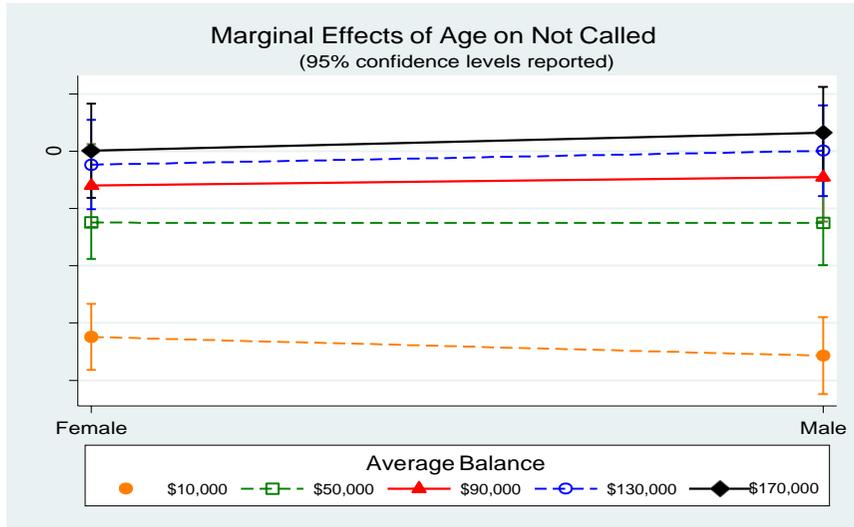
Figure 4 Marginal Effects of Account Balance by Gender and Age on Call Behaviour
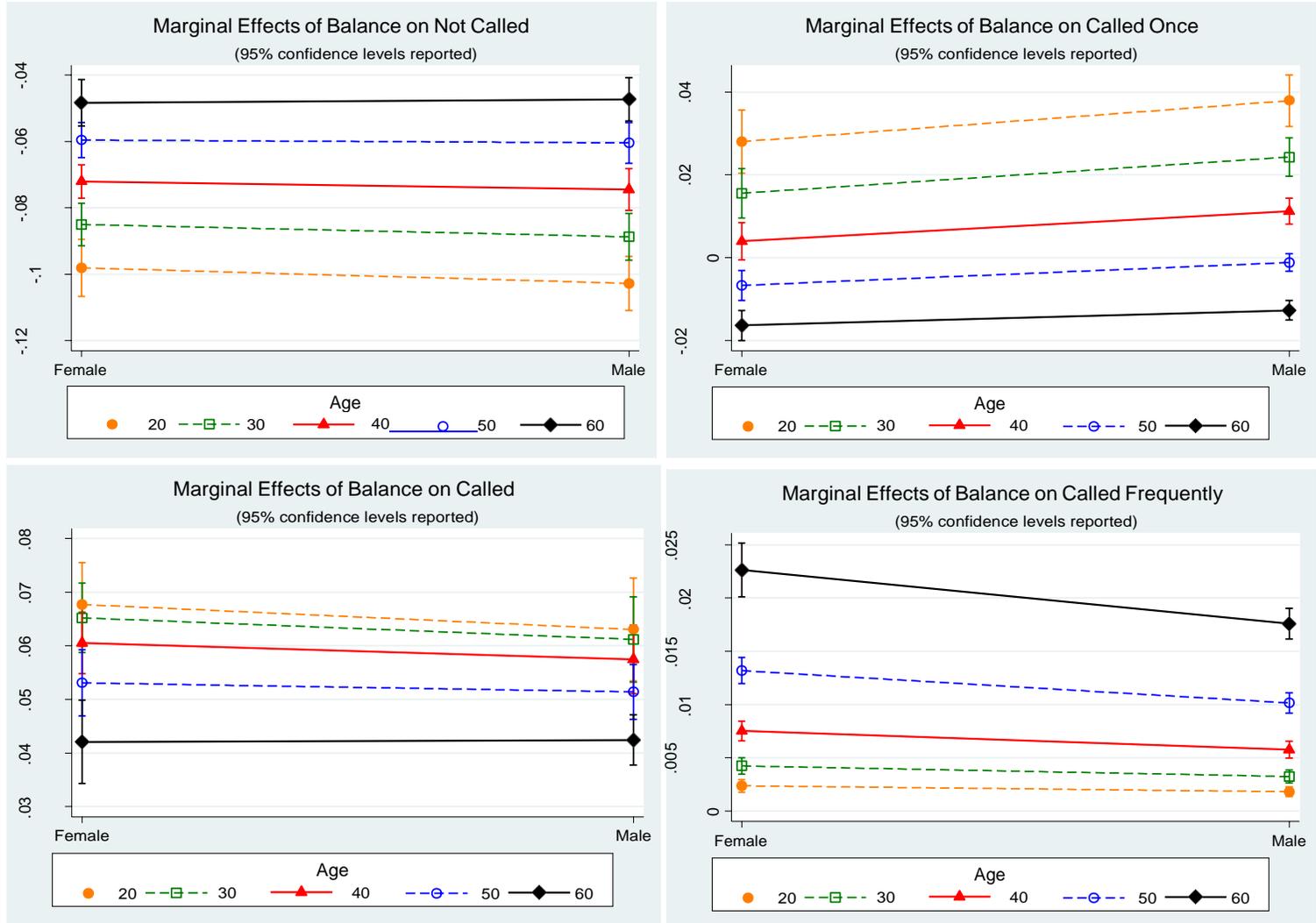
Figure 5 Dominant Advice Topic
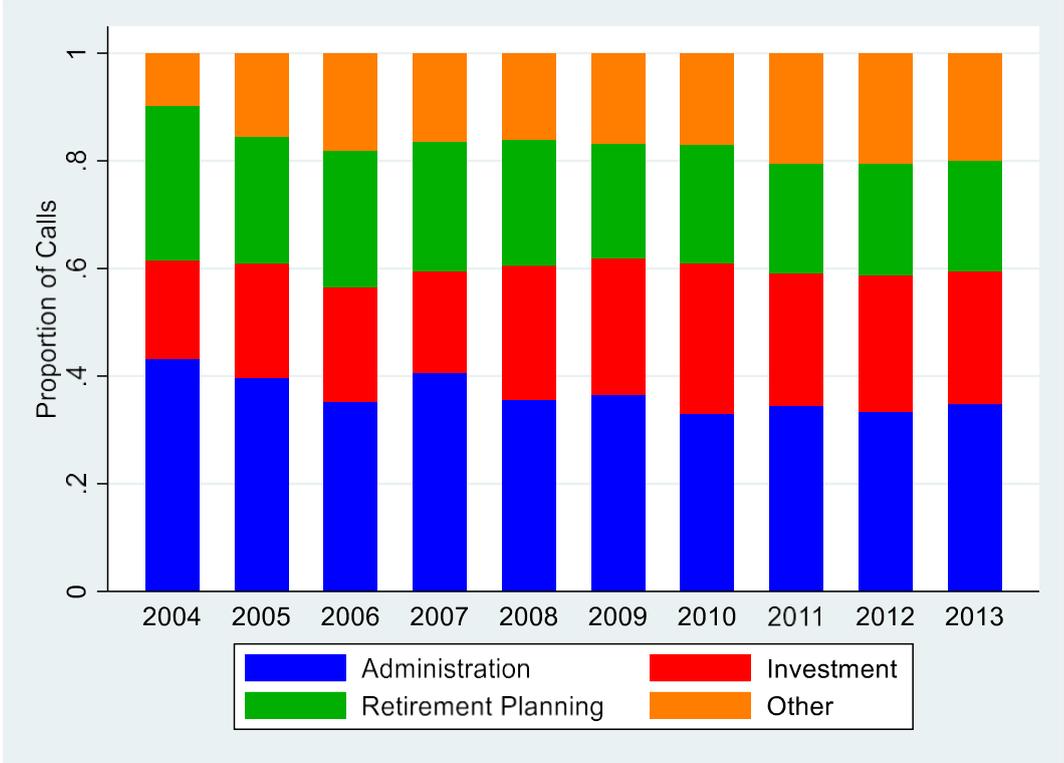
Determinants of advice seeking within defined contribution retirement savings schemes

TABLES

Table 1 Descriptive statistics about caller types
This table provides summary statistics of calling and web user characteristics.

	n	Mean	SD	n	Mean	SD
		Not Called			Not Called and No Web	
Gender	316629	0.61	0.489	68708	0.6290	0.48
Age	316629	41.77	11.84	68708	41.8948	10.86
Account Balance	236328	29850.37	66490.45	53317	8.7769	1.76
Salary	145593	67083.76	45928.91	19843	10.78	0.50
Membership	316629	2.72	2.64			
Membership - Pre-Web				68708	1.13	1.78
Membership - Post-Web				68708	3.42	1.92
		Called Once			Called but No Web	
Gender	97975	0.603	0.49	30693	0.59	0.49
Age	97975	43.10	10.99	30693	44.93	11.15
Account Balance	89206	48833.60	90725.38	28814	9.60	1.64
Salary	54973	77777.68	52937.09	12216	10.94	0.55
Membership	97975	3.98	3.13			
Membership - Pre-Web				30693	2.23	2.15
Membership - Post-Web				30693	2.54	2.05
		Called Average (2-7)			Web but No Called	
Gender	130549	0.62	0.48	146685	0.60	0.49
Age	130549	46.40	11.42	146685	38.14	11.02
Account Balance	119819	78341.66	129389.20	120127	8.78	1.84
Salary	74623	89710.37	65024.78	83886	11.02	0.56
Membership	130549	4.96	3.29			
Membership - Pre-Web				146685	0.60	1.50
Membership - Post-Web				146685	4.47	1.20
		Called Frequently (>7)			Called and Web	
Gender	22338	0.68	0.46	176979	0.63	0.48
Age	22338	53.73	11.34	176979	45.26	11.48
Account Balance	19250	132721.40	192507.70	161138	10.14	1.51
Salary	12718	104060.10	79753.30	105069	11.18	0.57
Membership	22338	6.41	3.25			
Membership - Pre-Web				176979	1.82	2.28
Membership - Post-Web				176979	4.15	1.44

			Correlations			
	Gender	Age	Account Balance	Salary	Membership	Pre-Web
Gender						
Age	0.1135***					
Balance	0.1496***	0.4649***				
Salary	0.2336***	0.1705***	0.4093***			
Membership	0.0552***	0.2360***	0.5535***	0.1018***		
Pre-Web	0.0091***	0.3479***	0.3544***	-0.1290***	0.5528***	

Table 2 Marginal Effects for Caller Behaviour

This table presents the marginal effects from a multinomial logit estimation of the likelihood of being in one of four calling behaviour groups: Not Called; Called Once; Average Caller; and Frequent Caller. Marginal effects are for a unit change in each variable at mean values of remaining variables. Group membership is estimated as a function of gender, age, account balance (natural log), salary (natural log), membership length in sub-plan, and member location (state). Two dummy variables are included to capture if a member had no web access available (No Web Access) and if they had web access and used it (Access, Web User), with the omitted category those who had access but had not used the web. Additionally, gender, account balance and age are allowed to interact. Dummy variables for member location (state) are included but not tabulated. Residuals are clustered at sub-plan level.

	Marginal Effect	Standard Error	Z	p-value	[95% Conf. Interval]	
Predicted outcome: Not Called (50.1% probability at mean values, 50.5% sample)						
Male	0.0473	0.0036	13.09	<0.01	0.0402	0.0543
Age	-0.0026	0.0002	-11.95	<0.01	-0.0031	-0.0022
Account Balance	-0.0663	0.0025	-26.87	<0.01	-0.0711	-0.0615
Salary	-0.0445	0.0066	-6.74	<0.01	-0.0574	-0.0315
Membership	-0.0180	0.0017	-10.73	<0.01	-0.0213	-0.0147
No Web Access	-0.0860	0.0151	-5.70	<0.01	-0.1156	-0.0564
Access, Web User	-0.3072	0.0101	-30.33	<0.01	-0.3270	-0.2873
Predicted outcome: Called Once (22.3% probability at mean values, 19.1% sample)						
Male	-0.0147	0.0020	-7.43	<0.01	-0.0186	-0.0108
Age	-0.0010	0.0001	-11.56	<0.01	-0.0011	-0.0008
Account Balance	0.0047	0.0013	3.58	<0.01	0.0021	0.0073
Salary	0.0100	0.0020	4.96	<0.01	0.0061	0.0140
Membership	0.0051	0.0009	5.74	<0.01	0.0034	0.0068
No Web Access	0.0195	0.0052	3.76	<0.01	0.0093	0.0296
Access, Web User	0.0451	0.0061	7.45	<0.01	0.0332	0.0570
Predicted outcome: Called Average (25.6% probability at mean values, 26.0% sample)						
Male	-0.0309	0.0031	-9.85	<0.01	-0.0371	-0.0248
Age	0.0025	0.0002	14.16	<0.01	0.0021	0.0028
Account Balance	0.0544	0.0024	22.77	<0.01	0.0498	0.0591
Salary	0.0302	0.0056	5.38	<0.01	0.0192	0.0411
Membership	0.0109	0.0010	11.40	<0.01	0.0090	0.0128
No Web Access	0.0609	0.0095	6.42	<0.01	0.0423	0.0794
Access, Web User	0.2239	0.0057	39.56	<0.01	0.2128	0.2350
Predicted outcome: Called Frequently (2.0% probability at mean values, 4.4% sample)						
Male	-0.0016	0.0010	-1.69	0.0910	-0.0035	0.0003
Age	0.0011	0.0000	28.98	<0.01	0.0010	0.0012
Account Balance	0.0072	0.0003	20.48	<0.01	0.0065	0.0078
Salary	0.0043	0.0010	4.47	<0.01	0.0024	0.0062
Membership	0.0020	0.0002	12.48	<0.01	0.0017	0.0023
No Web Access	0.0057	0.0011	5.00	<0.01	0.0035	0.0079
Access, Web User	0.0382	0.0011	33.98	<0.01	0.0360	0.0404
N			285,268			
Nagelkerke-R^2			0.253			

Table 3 Marginal Effects for Web and Call Access Combination
This table presents the marginal effects from a multinomial logit estimation of the likelihood of being in one of four calling and web-use behaviour groups: Not Called and No Web; Called Only; Web Only; Called and Web. Marginal effects are for a unit change in each variable at mean values of remaining variables. Group membership is estimated as a function of gender, age, account balance (natural log), salary (natural log), Pre-membership experience (membership length in years prior to introduction of web), Post-membership experience (membership length in years after introduction of web), and Post-Only (Dummy with value one is only became member after introduction of Web). Additionally, gender, account balance and age are allowed to interact. Dummy variables for member location (state) are included but not reported. Residuals clustered at sub-plan.

	Marginal Effect	Standard Error	Z	p-value	[95% Conf. Interval]	
Predicted outcome: Not Called and No Web (43.24% probability at mean values)						
Male	0.0361	0.0042	8.51	<0.01	0.0278	0.0444
Age	-0.0036	0.0002	-16.51	<0.01	-0.0041	-0.0032
Account Balance	-0.1068	0.0045	-24.00	<0.01	-0.1156	-0.0981
Salary	-0.0582	0.0107	-5.42	<0.01	-0.0792	-0.0371
Pre-Membership	-0.0007	0.0021	-0.33	0.7430	-0.0048	0.0034
Post-Membership	0.0092	0.0056	1.63	0.1020	-0.0018	0.0202
Post-Only	0.1140	0.0162	7.02	<0.01	0.0822	0.1458
Predicted outcome: Called, No Web (41.50% probability at mean values)						
Male	-0.0617	0.0039	-15.88	<0.01	-0.0693	-0.0541
Age	0.0032	0.0002	17.61	<0.01	0.0029	0.0036
Account Balance	0.0561	0.0025	22.06	<0.01	0.0511	0.0611
Salary	-0.0157	0.0064	-2.47	0.0130	-0.0281	-0.0032
Pre-Membership	0.0042	0.0019	2.19	0.0280	0.0004	0.0080
Post-Membership	-0.0418	0.0024	-17.51	<0.01	-0.0465	-0.0371
Post-Only	-0.0977	0.0082	-11.90	<0.01	-0.1138	-0.0816
Predicted outcome: Web, Not Called (3.28% probability at mean values)						
Male	0.0085	0.0015	5.67	<0.01	0.0056	0.0115
Age	-0.0003	0.0001	-4.95	<0.01	-0.0004	-0.0002
Account Balance	0.0026	0.0010	2.52	0.0120	0.0006	0.0047
Salary	0.0158	0.0020	7.97	<0.01	0.0119	0.0197
Pre-Membership	-0.0016	0.0005	-2.91	<0.01	-0.0027	-0.0005
Post-Membership	0.0091	0.0011	8.10	<0.01	0.0069	0.0113
Post-Only	0.0121	0.0025	4.83	<0.01	0.0072	0.0170
Predicted outcome: Called and Web (11.96% probability at mean values)						
Male	0.0171	0.0033	5.22	<0.01	0.0107	0.0235
Age	0.0007	0.0001	4.71	<0.01	0.0004	0.0010
Account Balance	0.0481	0.0042	11.53	<0.01	0.0399	0.0563
Salary	0.0580	0.0056	10.40	<0.01	0.0471	0.0690
Pre-Membership	-0.0020	0.0009	-2.07	0.0380	-0.0038	-0.0001
Post-Membership	0.0235	0.0027	8.88	<0.01	0.0183	0.0287
Post-Only	-0.0284	0.0085	-3.32	<0.01	-0.0451	-0.0116
n			216,998			
Nagelkerke R^2			0.273			

Table 4 Singular Event Analysis

This table reports descriptive statistics and estimation results for a logistic regression of calling behaviour during the singular event period. Panel A provides the descriptive statistics and Panel B has the two sample estimations. In Panel A the call 'window' is June 12th through to July 2nd, 2007. 'Leaders' are those who called before the July 1st and those that called after that moment were deemed 'Followers'. In Panel B the logistic regression estimations are for a 'Non-Window' sample for the period leading-up to June 12th, 2007 and a 'Window' sample being for June 12th–July 2nd, 2007

Panel A: Descriptive Statistics					
	Observations		Mean		Standard Deviation
	Leaders	Followers	Leaders	Followers	Leaders	Followers
Male	7710	437	0.57	0.57	0.50	0.50
Age	7710	437	46.00	44.72	11.19	10.72
Membership	7710	437	5.65	5.60	3	3
Account Balance	7138	390	53,405	48,251	98,163	65,751
Salary	5001	294	72,905	78,522	66,450	55,643

Panel B: Logistic Regression					
	Coefficient	Std. Err	Z	P>z	[95% conf. int.]
Non-Window Sample Caller						
Male	-0.180	0.012	-14.550	<0.01	-0.204	-0.156
Age	0.033	0.001	59.660	<0.01	0.032	0.034
Account Balance	0.122	0.003	40.820	<0.01	0.116	0.128
Membership	0.158	0.002	79.840	<0.01	0.154	0.162
Salary	0.009	0.002	5.400	<0.01	0.006	0.012
Constant	-3.520	0.055	-64.130	<0.01	-3.628	-3.413
Window Sample Caller						
Male	-0.280	0.037	-7.560	<0.01	-0.352	-0.207
Age	0.015	0.002	8.240	<0.01	0.011	0.018
Account Balance	0.038	0.008	4.510	<0.01	0.021	0.054
Membership	0.195	0.005	40.460	<0.01	0.186	0.204
Salary	0.014	0.005	2.860	0.0040	0.004	0.023
Constant	-5.349	0.181	-29.510	<0.01	-5.705	-4.994

Table 5 Advice Seeking Topics

This table presents results from an estimation of the likelihood a member seeks advice classified by the dominant topic of a call. Five calling groups are included: Administration dominant; Investment dominant; Retirement Planning dominant; Other topics; and Not called (results not tabulated). A multilevel mixed effects multinomial logit model is estimated with, in addition to the fixed effects reported, individual random effects included with residuals allowed to correlate at sub-plan level. Average marginal effects are presented with the sample including all members with at least one full year of membership.

	Marginal Effect	Standard Error	Z	p-value	[95% Conf. Interval]	
Administration Dominant (27% of dominant classification)						
Male	-0.0082	0.0033	-2.44	0.0150	-0.0147	-0.0159
Account Balance	0.0705	0.0077	9.18	0.0000	0.0554	0.0855
Salary	-0.0045	0.0077	-0.58	0.5590	-0.0195	0.0106
Membership	-0.0185	0.0014	-13.52	0.0000	-0.0212	-0.0158
Age	-0.0086	0.0001	-60.73	0.0000	-0.0089	-0.0083
Investment Dominant (19% of dominant classification)						
Male	0.0003	0.0019	0.15	0.8770	-0.0034	0.0039
Account Balance	0.0172	0.0011	15.44	0.0000	0.0151	0.0194
Salary	0.0436	0.0038	11.46	0.0000	0.0361	0.0511
Membership	0.0017	0.0005	3.13	0.0020	0.0006	0.0028
Age	0.0007	0.0002	4.19	0.0000	0.0004	0.0010
Retirement Planning Dominant (15% of dominant classification)						
Male	-0.0088	0.0041	-2.15	0.0310	-0.0168	-0.0008
Account Balance	0.0160	0.0017	9.55	0.0000	0.0127	0.0193
Salary	-0.0300	0.0042	-7.16	0.0000	-0.0382	-0.0218
Membership	-0.0014	0.0014	-0.98	0.3280	-0.0042	0.0014
Age	0.0058	0.0001	46.29	0.0000	0.0056	0.0060
Other Topics (12% of dominant classification)						
Male	-0.0115	0.0021	-5.36	0.0000	-0.0157	-0.0073
Account Balance	0.0108	0.0009	11.82	0.0000	0.0090	0.0126
Salary	0.0121	0.0022	5.5	0.0000	0.0078	0.0165
Membership	0.0021	0.0007	2.97	0.0030	0.0007	0.0035
Age	0.0008	0.0001	6.22	0.0000	0.0005	0.0010
n	379,495					
Log pseudo-likelihood	Initial (-539755.35), Final (-535036.11)					

Determinants of advice seeking within defined contribution retirement savings schemes

Table S.1 Correlation Estimations of the Percentage Changes in Seasonally Adjusted Macroeconomic Indicators and Consumer Sentiment

This table presents the pairwise correlation between the percentage change in quarterly (monthly in brackets) macroeconomic indicators and measures of consumer sentiment (seasonally adjusted). The macroeconomic variables are changes in the: All Ordinaries Index (Australian Stock Market); GDP (GDP); and Employed Total Persons (Full Time Employed). A measure of consumer expectations is based on expectations about economic conditions in the next 12-months and five-years as well as unemployment expectations sourced from the Westpac-Melbourne Institute Survey of Consumer Sentiment. Significance at 95% confidence level indicated by *.

	Stock Market	Quarterly GDP	Full time Employed	Economic conditions (12 months)	Economic conditions (5 years)	Full Time Employed
Stock Market	1					
GDP	0.1462	1				
Full time Employed	-0.0221 (0.0358)	0.0256	1			
Economic Conditions (12 months)	0.6862* (0.2843*)	-0.0463	-0.1372 (0.0371)	1		
Economic Conditions (5 years)	0.4748* (0.2715*)	-0.1152	-0.1861 (-0.0722)	0.8406* (0.5579*)	1	
Unemployment Expectations	-0.7410* (-0.2415*)	-0.0301	-0.2612 (-0.0760)	-0.7026* (-04133*)	-0.5334* (-0.2909*)	1

Table S.2 Change in Calling and Macroeconomic Conditions and Consumer Sentiment

This table provides coefficients and robust standard errors from a regression of the percentage change in the volume of calls against the percentage change in macroeconomic indicators and consumer sentiment. The macroeconomic variables are quarterly changes in the: All Ordinaries Index (Australian Stock Market); GDP (GDP); and Employed Total Persons (Employed). A measure of consumer sentiment is based on expectations about economic conditions in the next five-years sourced from the Westpac-Melbourne Institute Survey of Consumer Sentiment. Augmented Dickey Fuller test reject a unit root for all variables.

	Coefficient	Robust SE	t-test	p-value	[95% Conf. Int.]	
Australian Stock Market	0.1793	0.4199	0.43	0.673	-0.6823	1.0409
GDP	2.9674	4.9224	0.60	0.552	-7.13253	13.0674
Employed	9.1144	7.0901	1.29	0.210	-5.43333	23.6620
Economic Conditions (5 years)	0.1034	0.5023	0.21	0.838	-0.9272	1.1339
Constant	-0.0395	0.0505	-0.78	0.441	-0.1432	0.0642
N=32, Adjusted R-squared = 0.0606, F-test (3,28) 0.55, p-value 0.6988						

Data Source: Datastream, Westpac-Melbourne Institute Survey of Consumer Sentiment, Australian Bureau of Statistics, Labour Force Australia, Catalogue No. 6202.0.

Table S.3 Marginal Effects for Caller Behaviour – Re-estimation, Monthly Call   Threshold

This table presents the re-estimation of marginal effects reported in Table 2 of the main article with an alternative treatment of call events. Here a call is only considered a unique event if it is at least one month after an earlier call. The marginal effects are estimated from a multinomial logit estimation of the likelihood of being in one of four calling behaviour groups: Not Called; Called Once; Average Caller; and Frequent Caller. Marginal effects are for a unit change in each variable at mean values of remaining variables. Group membership is estimated as a function of gender, age, balance (natural log), salary (natural log), membership length in sub-plan, and member location (state). Two dummy variables are included to capture if a member had no web access available (No Web Access) and if they had web access and used it (Access, Web User), with the omitted category those who had access but had not used the web. Additionally, gender, balance and age are allowed to interact. Dummy variables for member location (state) are included but not tabulated. Residuals are clustered at sub-plan level.

	Change in Probability	Standard Error	Z	p-value	[95% Conf. Interval]	
Predicted outcome: Not Called (50.12 % probability at mean values, 55.8% sample)						
Male	0.0470	0.0036	13.10	0.0000	0.0400	0.0541
Age	-0.0027	0.0002	-12.45	0.0000	-0.0032	-0.0023
Account Balance	-0.0667	0.0025	-27.11	0.0000	-0.0715	-0.0619
Salary	-0.0433	0.0066	-6.60	0.0000	-0.0562	-0.0305
Membership	-0.0175	0.0017	-10.42	0.0000	-0.0208	-0.0142
No Web Access	-0.0853	0.0150	-5.67	0.0000	-0.1148	-0.0558
Access, Web User	0.0470	0.0036	13.10	0.0000	0.0400	0.0541
Predicted outcome: Called Once (22.3 % probability at mean values, 17.3% sample)						
Male	-0.0151	0.0020	-7.63	0.0000	-0.0190	-0.0112
Age	-0.0010	0.0001	-11.72	0.0000	-0.0011	-0.0008
Account Balance	0.0045	0.0013	3.45	0.0010	0.0019	0.0071
Salary	0.0109	0.0021	5.32	0.0000	0.0069	0.0149
Membership	0.0055	0.0009	6.18	0.0000	0.0037	0.0072
No Web Access	0.0203	0.0052	3.89	0.0000	0.0101	0.0305
Access, Web User	-0.0151	0.0020	-7.63	0.0000	-0.0190	-0.0112
Predicted outcome: Called Average (25.7 % probability at mean values, 23.0% sample)						
Male	-0.0283	0.0032	-8.85	0.0000	-0.0345	-0.0220
Age	0.0029	0.0002	17.07	0.0000	0.0026	0.0032
Account Balance	0.0548	0.0024	23.1	0.0000	0.0502	0.0595
Salary	0.0275	0.0057	4.8	0.0000	0.0162	0.0387
Membership	0.0097	0.0010	9.98	0.0000	0.0078	0.0116
No Web Access	0.0545	0.0093	5.84	0.0000	0.0362	0.0727
Access, Web User	-0.0283	0.0032	-8.85	0.0000	-0.0345	-0.0220
Predicted outcome: Called Frequently (1.8 % probability at mean values, 3.9% sample)						
Male	-0.0036	0.0008	-4.42	0.0000	-0.0052	-0.0020
Age	0.0008	0.0000	25.27	0.0000	0.0008	0.0009
Account Balance	0.0074	0.0004	20.61	0.0000	0.0067	0.0081
Salary	0.0050	0.0008	5.86	0.0000	0.0033	0.0066
Membership	0.0023	0.0002	14	0.0000	0.0020	0.0026
No Web Access	0.0106	0.0012	8.56	0.0000	0.0081	0.0130
Access, Web User	-0.0036	0.0008	-4.42	0.0000	-0.0052	-0.0020
N			285,268			
Nagelkerke-R^2			0.254			

Table S.4 Caller Behaviour: Re-estimation, Including Education

This table presents the re-estimation of marginal effects reported in Table 2 of the main article with the additional variable included being University Education, measured as the proportion of individuals in the member's postcode with at least an undergraduate college degree. The marginal effects are estimated from a multinomial logit estimation of the likelihood of being in one of four calling behaviour groups: Not Called; Called Once; Average Caller; and Frequent Caller. Marginal effects are for a unit change in each variable at mean values of remaining variables. Group membership is estimated as a function of gender, age, balance (natural log), salary (natural log), membership length in sub-plan, and member location (state). Two dummy variables are included to capture if a member had no web access available (No Web Access) and if they had web access and used it (Access, Web User), with the omitted category those who had access but had not used the web. Additionally, gender, balance and age are allowed to interact. Dummy variables for member location (state) are included but not tabulated. Residuals are clustered at sub-plan level.

	Change in Probability	Standard Error	Z	p-value	[95% Conf. Interval]	
Predicted outcome: Not Called (44.9 % probability at mean values, 50.5% sample)						
Male	0.0510	0.0038	13.35	0.0000	0.0435	0.0585
Age	-0.0020	0.0002	-7.97	0.0000	-0.0025	-0.0015
Account Balance	-0.0769	0.0028	-27.34	0.0000	-0.0824	-0.0714
Salary	-0.0361	0.0066	-5.44	0.0000	-0.0491	-0.0231
Membership	-0.0146	0.0019	-7.77	0.0000	-0.0182	-0.0109
No Web Access	-0.0960	0.0157	-6.12	0.0000	-0.1268	-0.0653
Access, Web User	-0.2935	0.0094	-31.27	0.0000	-0.3119	-0.2751
University Education	-0.0003	0.0001	-2.20	0.0280	-0.0006	0.0000
Predicted outcome: Called Once (23.0 % probability at mean values, 19.1% sample)						
Male	-0.0149	0.0026	-5.75	0.0000	-0.0199	-0.0098
Age	-0.0017	0.0001	-18.63	0.0000	-0.0018	-0.0015
Account Balance	0.0064	0.0019	3.31	0.0010	0.0026	0.0102
Salary	0.0044	0.0029	1.53	0.1250	-0.0012	0.0101
Membership	0.0034	0.0010	3.55	0.0000	0.0015	0.0052
No Web Access	0.0148	0.0049	3.02	0.0020	0.0052	0.0243
Access, Web User	0.0265	0.0052	5.09	0.0000	0.0163	0.0367
University Education	-0.0001	0.0001	-1.47	0.1420	-0.0002	0.0000
Predicted outcome: Called Average (29.4 % probability at mean values, 26.0% sample)						
Male	-0.0336	0.0035	-9.6	0.0000	-0.0404	-0.0267
Age	0.0021	0.0002	10.11	0.0000	0.0017	0.0025
Account Balance	0.0623	0.0031	20.38	0.0000	0.0563	0.0683
Salary	0.0261	0.0059	4.39	0.0000	0.0144	0.0377
Membership	0.0090	0.0011	8.14	0.0000	0.0068	0.0111
No Web Access	0.0727	0.0104	6.99	0.0000	0.0523	0.0931
Access, Web User	0.2219	0.0057	39.21	0.0000	0.2109	0.2330
University Education	0.0003	0.0001	2.73	0.0060	0.0001	0.0005
Predicted outcome: Called Frequently (2.6 % probability at mean values, 4.4% sample)						
Male	-0.0026	0.0013	-2.05	0.0400	-0.0051	-0.0001
Age	0.0015	0.0000	30.74	0.0000	0.0014	0.0016
Account Balance	0.0082	0.0005	16.12	0.0000	0.0072	0.0092
Salary	0.0056	0.0012	4.86	0.0000	0.0033	0.0079
Membership	0.0022	0.0002	10.22	0.0000	0.0018	0.0026
No Web Access	0.0085	0.0014	6.14	0.0000	0.0058	0.0113
Access, Web User	0.0451	0.0013	33.84	0.0000	0.0425	0.0477
University Education	0.0001	0.0000	3.1000	0.0020	0.0000	0.0002
N			224,422			
Nagelkerke-R^2			0.234			

Table S.5 Marginal Effects for Caller Behaviour – Panel Logit Estimation

This table presents the marginal effects from a panel logit estimation of the likelihood of making a call in any year. This is the complement to the estimation presented in Table 2 of the main document. Whereas in Table 2 the estimation examines the whole membership and categorises each member into one of four groups (Not Called; Called Once; Average Caller; and Frequent Caller) here we have an indicator variable for each year for whether a member made a call (yes = 1). The estimation allows for random effects at sub-plan and individual member level. Robust standard errors are clustered at the sub-plan level. Marginal effects are for a unit change in each variable at mean values of remaining variables. In addition to gender, age and membership length are measured at end of year, annual balance and salary enter as natural logs. Those who are a web-user in any year are denoted by a dummy variable (yes =1). Additionally, gender, balance and age are allowed to interact. Dummy variables for member location (state) and year are included but not tabulated. Robust residuals are clustered at sub-plan level. Marginal effects are estimated at mean values of remaining variables.

	Marginal Effect	Standard Error	Z	p-value	[95% Conf. Interval]	
Male	-0.1128	0.0062	-18.28	0.0000	-0.1249	-0.1007
Age	0.0140	0.0003	-50.51	0.0000	0.0134	0.0145
Account Balance	0.0931	0.0025	36.77	0.0000	0.0882	0.0981
Salary	0.1001	0.0055	18.09	0.0000	0.0892	0.1109
Membership	0.0009	0.0013	0.73	0.4640	-0.0016	0.0035
Web User	0.3886	0.0065	59.91	0.0000	0.3759	0.4014
N	975,655					
Wald χ^2(24), p-value	36945.08 (0.000)					

Table S.6 Advice Seeking Topics in Individual Years

This table presents estimations of the likelihood a member sought advice in 2011 classified by the dominant advice topic: Administration dominant; Investment dominant; Retirement Planning dominant; Other topics; and Not called (not tabulated). The sample is restricted to those who joined a sub-plan before 2011 and remained a member for the full 2011 calendar year. Prior Administration, Prior Investment, and Prior Retirement Planning are additional indicators (yes=1), to those variables included in Table 5, of whether the member had sought advice on that topic prior to 2011. A multilevel mixed effects multinomial logit model is estimated with, in addition to the fixed effects reported, individual random effects included with residuals allowed to correlate at sub-plan level. Average marginal effects are presented.

	Marginal Effect	Standard Error	Z	p-value	95% Conf. Interval	
Administration Dominant (11% of dominant classification)						
Male	-0.0105	0.0020	-5.20	0.0000	-0.0145	-0.0066
Balance	0.0138	0.0012	11.37	0.0000	0.0114	0.0161
Salary	0.0023	0.0022	1.04	0.3000	-0.0021	0.0067
Membership	-0.0061	0.0005	12.68	0.0000	-0.0071	-0.0052
Age	-0.0008	0.0001	-6.54	0.0000	-0.0010	-0.0005
Prior Administration	0.0264	0.0034	7.78	0.0000	0.0198	0.0331
Prior Investment	0.0018	0.0025	0.70	0.4840	-0.0032	0.0067
Prior Retirement Planning	0.0108	0.0020	5.28	0.0000	0.0068	0.0148
Investment Dominant (9% of dominant classification)						
Male	0.0039	0.0014	2.72	0.0070	0.0011	0.0067
Balance	0.0001	0.0012	0.05	0.9580	-0.0022	0.0024
Salary	0.0216	0.0020	10.58	0.0000	0.0176	0.0256
Membership	-0.0007	0.0004	-1.74	0.0810	-0.0015	0.0001
Age	0.0006	0.0001	8.91	0.0000	0.0004	0.0007
Prior Administration	0.0077	0.0015	5.23	0.0000	0.0048	0.0106
Prior Investment	0.0264	0.0017	15.87	0.0000	0.0231	0.0296
Prior Retirement Planning	0.0059	0.0016	3.61	0.0000	0.0027	0.0091
Retirement Planning Dominant (5% of dominant classification)						
Male	-0.0003	0.0022	-0.15	0.8820	-0.0046	0.0040
Balance	0.0021	0.0007	2.99	0.0030	0.0007	0.0035
Salary	-0.0017	0.0024	-0.68	0.4970	-0.0064	0.0031
Membership	-0.0010	0.0003	-3.37	0.0010	-0.0016	0.0004
Age	0.0018	0.0001	25.17	0.0000	0.0017	0.0020
Prior Administration	0.0068	0.0019	3.51	0.0000	0.0030	0.0105
Prior Investment	0.0039	0.0021	1.89	0.0580	-0.0001	0.0079
Prior Retirement Planning	0.0143	0.0017	8.63	0.0000	0.0111	0.0176
Other (6% of dominant classification)						
Male	-0.0036	0.0014	-2.62	0.0090	-0.0063	-0.0009
Balance	-0.0027	0.0010	-2.84	0.0050	-0.0046	-0.0008
Salary	0.0055	0.0017	3.18	0.0010	0.0021	0.0089
Membership	-0.0007	0.0003	-2.22	0.0260	-0.0013	0.0001
Age	0.0006	0.0001	10.19	0.0000	0.0005	0.0007
Prior Administration	0.0080	0.0022	3.60	0.0000	0.0036	0.0123
Prior Investment	0.0165	0.0019	8.62	0.0000	0.0127	0.0202
Prior Retirement Planning	0.0103	0.0014	7.14	0.0000	0.0075	0.0132
Log pseudo-likelihood	Initial (-96418.85), Final (-95795.66)					
n	124, 069					