Knowledge and perceptions of superannuation in Australia

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ABSTRACT. Least squares and binary logit models are used to predict knowledge and perceptions of superannuation (private pensions) in Australia on the basis of demographic, socioeconomic and financial characteristics. The data is drawn from the *ANZ Survey of Adult Financial Literacy in Australia* and relates to 2,516 superannuation fund members. Knowledge of superannuation is defined, amongst other things, in terms of understanding superannuation fees, charges and statements, recognising the voluntary and compulsory nature of additional employee and employer contributions and being aware of the lower taxation of superannuation compared to other investments. Factors examined include gender, age, ethnicity, occupation, educational level and family structure, along with household income, savings and debt.

In terms of specific superannuation knowledge, substantially more than half of respondents knew that employers are obliged to make contributions on behalf of employees and that employees can make additional voluntary payments above these payments. Slightly more than half knew that superannuation is taxed at a lower rate than other investments. However, only one-third of fund members knew how to read and understand their statements or the approximate rate of contribution employers were required to make on their behalf, or had worked out how much they needed to save for retirement. Overall, about sixty percent of respondents could correctly answer only fifty percent or less of the questions posed.

The evidence also suggests that knowledge of superannuation is unevenly spread across respondents. Such knowledge is generally lowest for females, those from a non-English speaking background, those with low levels of education and persons aged less than thirty. Knowledge is generally better for professionals, those aged over forty or nearing retirement and the university educated. The models best predict the compulsory nature of employer contributions, the voluntary nature of employee contributions and knowledge that the government will not make up any gap arising from a failure to undertake retirement planning.

It is now nearly twenty years since Australia started down the path towards a compulsory privately-funded superannuation (retirement income) system supplemented by an intentionally narrowly-focused (age, means and income tested) public pension. Starting in the 1980s, superannuation was gradually extended throughout the workforce until its extension to all employees through compulsory employer contributions was enshrined in the 1992 *Superannuation Guarantee Charge*. With this steadily increasing contribution rate now stabilised at nine percent, the superannuation system has further evolved with the self-employed encouraged to save through tax concessions, the possibility of self-managed superannuation funds for those with significant assets, the opportunity for some employed to package tax-effective funding through salary sacrifice, and the option for all employees to contribute additional voluntary contributions. Even now, superannuation has continued to evolve. Most recently, from July 2005 millions more employees are now able to choose their superannuation fund, and this is likely to be further extended from July 2006 [Guest and

McDonald (2002), Bateman (2003), Heavey (2004), Gallery et al. (2004) and Stanford (2004) highlight additional developments and issues in Australian superannuation].

Clearly, these developments have led to consumers being faced with a bewildering array of choices regarding superannuation. While these will surely lead to greater benefits for the majority, it is also clear that the responsibility for superannuation increasingly lies with consumers. Importantly, while several Australian government agencies combine to regulate and enforce legal standards to protect consumer benefits [the Australian Securities and Investments Commission controls the dissemination of information and conduct under company law; the Australian Prudential Regulation Authority regulates how funds operate; the Australian Taxation Office supervises self-managed funds, employer contributions, co-contributions and superannuation tax rules], neither government nor government agencies guarantee superannuation capital or earnings. Such conditions invariably place an emphasis on the ability of superannuates to make sound, well-informed, decisions. The Australian Securities and Investment's Commission (2005) *Super Choices – Think about Your Future* is the latest in a long line of well-publicised documents and media releases exhorting Australians to think about their own superannuation strategies.

Consider the choice of superannuation fund. In choosing a fund, potential members need to evaluate the nature of each fund's investment strategy, investment portfolio and investment risk and returns to determine the best match for their own subjective preferences. Additional complexities arise in the fees and charges (entry, exit, management fees) and the interrelationships with allied products like income protection and death and disability cover (Brown et al. 2004). It is argued that many superannuation fund members simply do not have the financial knowledge or skills to deal with such tasks (Beale and Delpachitra 2004). For example, the *ANZ Survey of Adult Financial Literacy in Australia* showed that while most Australians have basic financial literacy, young consumers and those from low socioeconomic backgrounds were at a disadvantage in making informed decisions about money management (Roy Morgan Research 2003a, 2003b, 2003c). Worthington (2006) has also examined the problems with financial literacy that exist in Australia.

Similarly, submissions to the Senate Select Committee on Superannuation and Financial Services (2000) concluded that 46 percent of Australians have "…unsatisfactorily low levels of literacy" and 15 percent are "…functionally illiterate" and AMP Financial Services suggested that the implication for superannuation products is "…that there is going to be a percentage of the population who will never understand the concepts involved". Lastly, the Consumer and Financial Literacy Taskforce's (2004) *Australian Consumers and Money* stock

take of initiatives by public, private and community sector bodies found that while there was no shortage of consumer information, a good proportion of that material was either not known, not properly targeted or not used by Australian consumers.

Problematically, the profile of consumers requiring knowledge to deal with complex superannuation decisions has changed with its spread across the workforce. Changes in demography with ageing and ethnically-diverse populations has seen language, educational and cultural barriers arise that may hinder the access of some populations to these improved opportunities, and lead others less knowledgeable to questionable decision-making. Brown et al. (2004), for example, concluded that when faced with the complex investment decisions inherent in a superannuation choice system, individual attitudes towards participation are likely to vary considerably. Since those who choose to avoid participation will remain effectively disengaged from the process, it is erroneous to assume that all superannuation fund members are able and/or willing to develop their skills to a level sufficient to exercise informed choice. Beal and Delpachitra (2003a) also draw attention to concerns with the general lack of retirement knowledge and planning by many Australians. At the same time, labour trends towards a part-time workforce are associated with the fragmentation of knowledge and superannuation accounts, and it is well known that women suffer a disadvantage in superannuation markets, and this may be partially related to a lack of knowledge associated with historical disengagement (Preston and Austin 2001; Olsberg 2004).

The purpose of this paper is to assay the current state of knowledge concerning superannuation in Australia and examine some of the perceptions surrounding retirement planning in Australia. This should allow an assessment to be made of the success of programs by the government and others to improve knowledge of superannuation generally, and highlight any potential problems with the knowledge base of superannuation participants that may prevent or hinder their successful participation in these new opportunities, or much worse, adversely affect the viability of their own and the government's superannuation outcomes. The paper itself is divided into four main areas. The first section provides a brief discussion of the Australian superannuation system. The second section explains the empirical methodology and data employed in the analysis. The third section discusses variable specification, and the fourth section presents the results. The paper ends with some concluding remarks.

SUPERANNUATION IN AUSTRALIA

For much of its history, superannuation (or private pensions) in Australia were restricted to banks, large companies and governments paying private pensions to their senior, long-serving (mostly male) employees. Other employees had to rely on either personal savings to fund their retirement or strictly qualified age pensions provided by States and the Commonwealth government. By the 1950s, superannuation had spread to more of the workforce through industrial awards, but it continued to be provided mainly to permanent staff, and was seen as a reward for long and faithful service. However, private sector employers increasingly began to set up their own company-administered funds or paid contributions into a life office administered fund. Superannuation became even more popular during the 1960s when the tax treatment of contributions to funds became more generous for the self-employed.

However, despite these tax incentives, large sectors of the Australian workforce still did not receive any superannuation. For example, by the late 1980s only 58 percent of full time employers, 19 percent of part-time workers and just 2 per cent of unemployed persons were covered by superannuation. At the time, most superannuation funds were defined benefit funds with retirement benefits calculated in terms of years of service (or years of membership) with the employer (or fund), and the average salary level over the last few years prior to retirement. Most new funds today, however, are accumulation funds where employees have their own account where contributions and investment earnings are added and taxes, fees and insurance premiums are deducted. For instance, in June 2005 18.3 million of the 27.9 million member accounts in Australia and $446.2 billion of the $718.7 billion in assets were accumulation funds, with another 8.7 million member accounts and $253.2 billion in assets defined as a ‘hybrid’ of accumulation and defined benefit funds (APRA 2006).

In 1992 the then Labor government introduced a Superannuation Guarantee Charge to meet the arguably urgent need for much greater self-provision for retirement income through compulsory superannuation contributions for all employees (with a safety net provided by a means-tested government age pension scheme). The mainstay of the new system was that employers were required to make payments of a specified proportion of employee wages and salaries to a complying superannuation fund of the employers’ choice. The rate of contribution was scheduled for all employees, starting at 3 percent in 1992 and ultimately reaching 9 percent in 2002.

The new system also included provision for a number of other features. These included: (i) occupational superannuation schemes (which may be compulsory for employees), under

which employers paid an amount greater than the Superannuation Guarantee Charge and which may be matched by a required contribution from employees; (ii) Self-Managed Superannuation Funds, which are small do-it-yourself schemes usually selected by individuals with high value funds; (iii) voluntary contributions by members to any of the above; and (iv) personal superannuation schemes, unrelated to occupational superannuation schemes in a retail fund. Three Commonwealth government agencies were also assigned to help regulate and enforce legal standards in this system to protect employees and their benefits. These are the Australian Securities and Investments Commission (ASIC) to regulate what funds tell their members and how they abide by company law, the Australian Prudential Regulation Authority (APRA) to regulate how funds operate (except self-managed funds), and the Australian Taxation Office (ATO) to regulate self-managed funds, employer contributions, co-contributions and superannuation tax rules.

The main change to this system in recent years is that since July 2005, and subject to some specific exceptions, employees receiving superannuation guarantee contributions and employees making additional contributions are able to choose any complying superannuation fund, scheme or retirement savings account. If eligible employees do not exercise their choice, the employer is bound to pay their superannuation guarantee contributions into a 'default fund'. An Association of Super Funds of Australia report in 2006 found that about 7 percent of members changed funds during the early months of the new legislation, however, only 4 percent changed because of the conscious act of selecting a new fund, 2 percent changed as a result of a new job and 1 percent changed because of the closure of an existing fund. Expectations are that about 10 percent of those in employment will eventually change funds in this way each year (ASFA 2006a).

The latest available figures show that three-quarters of the pre-retired population aged 15 to 69 years in Australia have at least some superannuation, of which 54 percent comprise employer or business contributions only, 23 percent both employer or business contributions and personal contributions or spouse contributions (voluntary contributions to a non-earning spouse's fund partly encouraged by a tax offset), 5 percent personal or spouse contributions only and 18 percent is superannuation to which no contributions are currently being made. The one-quarter of the pre-retired population with no superannuation includes 48 percent of those aged 15 to 24 years, 55 percent of the unemployed and 70 percent of those not in the labour force (but not yet retired) (ABS 2006).

For the entities themselves, as at June 2005 in Australia there were 226 retail funds with 14.3 million members and $242.6 billion in assets, 309,546 small (self-managed) funds with

596,000 members and $175.2 billion in assets, 43 public sector funds with 2.4 million members and $128.6 billion in assets, and 92 industry funds with 9.2 million members and $119.8 billion in assets (APRA 2006). Finally, the mean default asset allocation of superannuation funds in Australia is 33 percent in domestic equity and 13 percent in domestic fixed interest, 23 percent in international equity and 5 percent in international fixed interest, 4 percent each in listed and unlisted property, 7 percent in cash and 10 percent in other assets (including hedge funds, private equity and assets not defined elsewhere) (APRA 2006).

RESEARCH METHOD AND DATA

A convenient consumer behaviour model put forward by the Consumer and Financial Literacy Taskforce (2004) hypothesises that external events, socioeconomic background, personal characteristics, skill levels and choices of information all shape the way knowledge and perceptions (and hence decisions) in financial services markets are made. First, economic, regulatory, cultural and political factors shape the external environment facing consumers. These comprise market forces regarding the price and non-price characteristics of products available, and non-market impacts such as government regulation concerning the information made available to consumers, including product disclosure, consumer protection and opportunities for redress. Second, the consumer's own socioeconomic and personal characteristics also affect their knowledge, perceptions and the decision-making process. These include education, age, gender, health status and cultural background along with needs and aspirations.

Third, there are the events that have happened in each consumer's life. In the context of financial services markets, these include past experiences (both good and bad) with particular products and services. Finally, there are things consumers can learn to assist consumption. These may include prerequisite skills (such as literacy and numeracy), planning skills (comprising budgeting, saving and spending), and risk management skills (including insurance and portfolio management). They may also include knowledge as to where information and advice may be obtained. Sources of information and advice can be formal or informal and they can be direct or intermediated. Clearly, knowledge and perceptions of superannuation may result from any or all of these sources, and so attempts to model their distribution should take into account the different demographic, socioeconomic and financial backgrounds of consumers.

The unpublished data used in this study is from the *ANZ Survey of Adult Financial Literacy in Australia*: a national telephone survey of 3,548 respondents [see Roy Morgan Research (2003a, 2003b, 2003c) for the published reports]. Clearly, the group of primary interest is those persons with a superannuation fund. This generally excludes persons who have not been employed in the Australian workforce since 1992. Accordingly, a sub-sample of 2,516 superannuation fund-holding respondents is used. The data is composed of three sets of information. The first set used in this study consists of each respondent's answers to a set of questions aimed at measuring understanding of superannuation. The understanding of superannuation was assessed through a number of areas, including the compulsory nature of employer contributions, rights of employees to make additional contributions, taxation benefits and so on. The ability of respondents to understand fees and charges and check superannuation statements was also assessed.

The eight specific questions examined in this study are provided in the uppermost portion of Table 1. These variously relate to the objectives of understanding that superannuation sets aside money for retirement and involves compulsory contributions (superannuation gap, rate of contribution, retirement needs), understanding that personal contributions may be made (employee contribution), the ability to check compulsory employer contributions have been made (employer contributions), the ability to check and maintain superannuation records and understand the costs involved (statements, fees and charges), and understanding that superannuation can be a tax effective form of investment (taxation). Responses to these questions ranged between the 84.7 percent of respondents who knew that the government would not make up the gap from failing to adequately plan for retirement down to the 30.1 percent of respondents who knew how to read and understand their superannuation statements.

A regression-based approach is used to analyse knowledge of superannuation. The first analytical technique specifies the total number of correct (or knowledgeable) responses in a least squares regression with demographic, socioeconomic and financial characteristics as predictors. This score ranges from zero (where no correct or knowledgeable responses are made) to eight (where all questions are answered correctly or knowledgeably). The second technique employed specifies each respondent's individual response for a particular question concerning superannuation as the dependent variable with the same set of predictors. However, given the dependent variable (binomial) is discrete (either correct or incorrect), binary logit models are required.

SPECIFICATION OF EXPLANATORY VARIABLES

The next two sets of information are specified as explanatory variables in the binary logit regression models. The first of these relates to demographic and socioeconomic characteristics, and the second to financial characteristics. The first set of information is generally comparable to that employed in earlier studies of financial knowledge and perceptions. The second set of information is used to identify financial characteristics as a means of establishing a connection between financial knowledge and perceptions and respondent characteristics beyond these factors.

The set of demographic and socioeconomic variables upon which the questions concerning superannuation are regressed are first examined. The definition and coding of these dummy variables is detailed in Table 1. Whilst there is no unequivocal rationale for predicting the direction and statistical significance of many of these independent variables, their inclusion is consistent with both past studies of the determinants of financial knowledge and perceptions (as variously defined) and the presumed interests of educators, regulators, policymakers, industry and consumer groups and other stakeholders. For example, Beal and Delpachitra (2003b) included gender, household status, age, educational and employment status and time spent in the workforce, while Chen and Volpe (1998) added race and nationality, academic discipline and class rank. Worthington (2006) specified a similar set of independent variables in a recent study predicting Australian financial literacy.

<TABLE I HERE>

The first nine variables relate to the sex, geographical location, ethnic background and age of the respondent. These are used as proxies for characteristics exposing respondents to financial knowledge and perceptions including stage of life cycle, access to labour and credit markets, exposure to marketing and information campaigns, language skills and the level of financial responsibility. Chen and Volpe (1998: 114), for example, found that "…the percentages of correct answers from the female participants (50.77%) are lower than those from male participants (57.40%)" as did Goldsmith and Goldsmith (1997). Gerrans and Clark-Murphy (2004), Jefferson et al. (2005), Jefferson and Preston (2005) and Murphy (2005) discuss in detail the gaps in superannuation knowledge and funds in Australia. Negative coefficients are hypothesised for gender, region and language with age coefficients being negative for younger and older respondents and positive for middle-aged respondents.

The reference category for the age dummies are respondents aged 25-29 years as by this time most people have joined the workforce.

The next four variables indicate whether the respondent is non-working and looking for work (unemployed), non-working and a student, non-working and engaged in home duties, or non-working and retired. Beal and Delpachitra (2003b) and Worthington (2006) also included variables indicating employed and unemployed respondents. Possible reasons for differences in financial knowledge and perceptions for non-working respondents include lack of exposure to financial transactions such as pay slips and superannuation statements, simpler sources of income, less exposure to work-related literacy campaigns, and fewer synergies between work-related and personal knowledge and perceptions. It is reasoned that all categories of non-working respondents will have lower levels of financial knowledge and perceptions: negative coefficients are hypothesised. Following this eleven categories of occupation are specified. It is generally argued that white collar occupations are associated with higher levels of financial knowledge and more positive perceptions about superannuation, with some occupations having more reliance on skills included within financial knowledge, say, mathematical skills. Positive coefficients are hypothesised for white collar occupations, especially those involving business management or ownership; negative coefficients for blue collar occupations, primarily those in semi-skilled and unskilled trades.

The next three variables categorise respondents according to the highest level of education attained: HSC/VCE/6th Form/Year 12 (corresponding in most Australian states to thirteen years of primary and secondary education), technical/commercial/TAFE certificate or diploma (post-secondary vocational specific education), and university/CAE degree (three-year programs equivalent to university, polytechnic or liberal arts college elsewhere). The reference category is all lower levels of educational attainment (usually 4th Form/Year 10 or lower). All other things being equal, mathematical and language literacy skills attained in secondary and tertiary education should be useful for the purposes of financial knowledge and positive perceptions about superannuation, with higher levels of educational attainment associated with higher financial knowledge and more positive perceptions. Positive coefficients are hypothesised.

The following two variables indicate whether the household structure is a single parent with children at home or a couple with children at home and follows suggestions that single parent household are at most risk through a lack of financial knowledge skills. The reference category is single persons and couples without children at home. Finally, the next two variables indicate whether the principal residence is being bought or rented (the reference

category is owned outright). It is generally the case that a residential mortgage is the largest financial transaction entered into by most Australian households so that experience with dealing with such products may serve to improve knowledge of superannuation, especially in the context of budgeting, saving and spending and consumer rights and responsibilities. A positive coefficient is hypothesised for respondents who are buying their own home and a negative coefficient for renter households.

The final three variables in Table 1 are quantitative variables for household income, saving and debt. Knowledge and positive perceptions about superannuation are argued to increase with exposure to financial services markets and the opportunity cost of a lack of knowledge should increase as income, saving and debt increase, thereby providing an incentive for improving skills (Worthington 2006). The variables specified are household income, household savings (including superannuation but excluding home value) and household debt (including mortgage and non-mortgage debt) in thousands of Australian dollars. By comparison, Chen and Volpe (1998) and Beal and Delpachitra (2003a) specified personal income alone. A positive coefficient is hypothesised when superannuation knowledge and perceptions about superannuation is regressed against all three variables. For the regression analysis, all dollar values are converted to their natural logarithms.

EMPIRICAL FINDINGS

Table II provides the cumulative knowledge score as a percentage of the respondents in each of the discrete categories in Table I. The first panel includes the cumulative knowledge score for the dummy variable category and the second panel provides similar information for the reference category. For example, gender is coded 1 if female and 0 otherwise (male). Females are then the dummy variable category and males the reference category. As shown in the top row, 2.5 percent of all respondents scored zero, 11.0 percent one or less, 24.1 percent two or less, 39.8 percent three or less, 57.7 percent four or less, 75.7 percent five or less, 88.3 percent six or less, 96.6 percent seven or less and 100.0 percent eight or less (the maximum possible score).

Table II also includes Pearson chi-square statistics and its *p*-value to test for distributional differences between each dummy variable category and the reference category respondents. As shown, the chi-square statistics reject the null hypotheses of equality for the cumulative percentage of each category against the reference category for all variables with the exception of region, language, owners or executives, sales, semi-professional, skilled trades, semi-

skilled trades, farm owner, technical and single parents. The most striking differences in the knowledge score are for age 70+ and retired where no persons responded correctly or knowledgeably more than three times and for the unemployed, students and those in home duties where no respondent achieved more than five correct or knowledgeable responses.

<TABLE II HERE>

Table III presents the estimated coefficients, standard errors and *p*-values for a regression where the knowledge score is regressed against the set of independent variables provided in Table I. Standardized coefficients are also included. As shown, most of the estimated coefficients are significant, with females scoring 0.31 less than males and those aged 40-49 or 50-59 years and 70+ years, 0.39 more and 0.76 less than the group aged 25-29 years, respectively. Respondents with relatively higher levels of knowledge include all occupational categories (except small business owners), those who have completed technical or university education, and those with higher incomes, savings and debt. Persons paying off or renting their home are generally less knowledgeable (compared to those owning their home outright). In terms of the magnitude of these effects, and in terms of the standardized coefficients, the most important influences on lower knowledge scores are being retired, on home duties or unemployed and the most influential positive influences are being in professional, semi-professional or other white collar employment.

To test for multicollinearity, variance inflation factors are calculated and included in the last column in Table III. As a rule of thumb, a factor substantially greater than ten indicates the presence of harmful collinearity. Among the independent variables, the highest variance inflation factors are for other white collar (10.628), professionals (7.292) and semi-professionals (7.272). This suggests that multicollinearity, while present, is not too much of a problem. The R^2 shows that 64 percent of the variation in knowledge scores is accounted for by the model.

<TABLE III HERE>

The estimated coefficients and *p*-values of the parameters for the logit regressions of the included questions are provided in Tables IV and V. Since the estimated coefficients are log odds, the odds (e^x) are also calculated. Also included is the Nagelkerke R^2 as an analogue for R^2 in the linear squares model and the Hosmer-Lemeshow test for model misspecification.

Table IV includes the models predicting whether respondents know well, fairly well or very well about the fees and charges on superannuation (columns 2, 3 and 4) , whether they

read and understand well, fairly well or very well superannuation statements (columns 5, 6 and 7), whether they knew superannuation was taxed at a lower rate than other investments (columns 8, 9 and 10) and whether they knew employers were obliged to make contributions on behalf of employees (columns 11, 12 and 13). In the case of adequate knowledge of the fees and charges on superannuation, the estimated coefficients indicate that females, single parents and those paying off or renting their home are less likely to have a sound knowledge of the fees and charges on superannuation, and that persons living in rural or regional areas, those from a non-English speaking background, those aged above 30 years, those with an occupational category between professional and skilled trades, and those with a higher dollar value of savings are more likely to have this knowledge. The highest positive likelihood for having such knowledge is for persons aged 60-69 years (4.40 times the odds of the 25-29 year age group) and the greatest negative likelihood is for couples (0.95 times less the odds of singles and couples without children at home).

<TABLE IV HERE>

Remarkably, and given that the questions on superannuation knowledge are apparently closely related, there are many differences between the factors significant in this question and those on reading and understanding superannuation statements, knowing that superannuation is taxed at a lower rate than other investments and understanding of the compulsory nature of employer contributions. With statements, significant positive factors include being an owner or executive (3.39 times the odds), small business owner (2.65 times the odds) or semi-professional (2.48 times the odds) and significant negative factors include aged 18-24 years (0.94 times the odds) or 30-39 years (0.96 times the odds) or being principally engaged in home duties (0.97 times the odds). However, with taxation farm owners are 3.36 times more likely than other occupations to be aware of the concessional tax treatment for superannuation, while with knowledge of the compulsory nature of employer contributions, females are 1.38 times more likely to know this than males, even though with fees and charges, statements and taxation they are much less knowledgeable than males. Across the four models in Table IV, income is significant (positively) in influencing the knowledge of the superannuation taxation and the compulsory nature of employer contributions, saving influenced (positively) the correct understanding of fees and charges and taxation, and debt influenced (positively) the knowledge of statements. The first, third and fourth models in Table IV appear to be adequate in accounting for the dispersion in responses with R^2 ranging up to 0.69 and the Hosmer-Lemeshow test of no functional misspecification failing to be

rejected. However, this is not the case for the second model. This suggests that the set of demographic and socioeconomic variables are very poor at predicting the ability of respondents to read and understand their statements.

Table V presents the models for the questions regarding the voluntary nature of additional employee contributions (columns 2, 3 and 4), the compulsory rate of contribution by employers (columns 5, 6 and 7), the understanding that the government would not fund any gap in superannuation (columns 8, 9 and 10) and whether the respondent had evaluated their retirement needs (columns 11, 12 and 13). In general, the various occupational groups had the best knowledge of the ability of employees to make additional voluntary contributions and were most accurate in identifying the compulsory rate of contribution by employers. With the acceptance that the government would not fund any gap from not planning for retirement, many occupational categories were significantly more likely to (correctly) respond, while persons aged more than 70 years and the retired were less likely to respond correctly. Finally, for those that had worked out how much they needed for retirement, the most well-prepared category was those aged 50-59 years while the least-prepared were those aged more than 70 years, the retired and those paying off or renting their own home.

<TABLE V HERE>

Across all four responses in Table V, income was positively significant in determining a knowledgeable response to employee contribution and the rate of contribution, savings was only important in positively affecting a correct response to retirement planning, and the amount of debt positively affected the first three responses, but not that concerning retirement planning. The Hosmer-Lemeshow test fails to reject the null hypothesis of no functional misspecification in all four models in Table V, with the values of R^2 showing that the set of demographic and socioeconomic variables are generally best at predicting the voluntary nature of additional employee contributions and the (erroneous) belief that the government will make up any gap from a lack of retirement planning.

As a final requirement, the ability of the models to accurately predict responses is examined. Table VI provides the results for each of the models in Tables IV and V with the predicted number in each category. To start with, consider the predictions for the model of knowledge of fees and charges. Of the 1,405 respondents who did not understand the fees and charges on superannuation, the estimated model correctly predicts 1,064 as not understanding and incorrectly predicts 341 as understanding. With the 1,111 respondents who did understand the fees and charges, the model correctly predicts 536 and incorrectly predicts

575. This represents the correct prediction of 75.73 percent of cases who did not understand the fees and charges and the correct prediction of 48.24 percent of cases who did understand: a total prediction success of 63.59 percent of respondents.

<TABLE VI HERE>

By comparison, the models correctly predicted 69.91 percent for the ability of respondents to read and understand superannuation statements, 63.47 percent for knowledge of the lower taxation of superannuation, 88.47 percent for knowledge of the compulsory nature of employer contributions and 84.34 percent for knowledge of the ability for employees to make additional payments, 70.59 percent for approximate knowledge of the compulsory employer contribution rate, 95.71 percent of those who (correctly) believed the government would not fund any gap in retirement funding and 70.79 percent of those who had undertaken retirement planning. The models are relatively good at modelling deficiencies in knowledge of statements (99.20 percent) and the lack of retirement planning (84.41 percent), as well as identifying those that understood the compulsory nature of employer contributions (98.92 percent), the voluntary nature of employee contributions (98.31 percent) and those that understood the (limited) role of the government in the superannuation gap arising from a lack of retirement planning (99.81 percent). Of course, these are 'in-sample' predictions and the results could differ if 'out-of-sample' data were made available.

CONCLUDING REMARKS AND POLICY RECOMMENDATIONS

The present study investigates the role of demographic, socioeconomic and financial characteristics in determining knowledge and perceptions of superannuation-holding Australian adults. In terms of specific superannuation knowledge, substantially more than half of respondents knew that employers are obliged to make contributions on behalf of employees and that employees can make additional voluntary payments above these contributions. They were also well aware that the government will not make up the gap in funding from a lack of retirement planning. Slightly more than half knew that superannuation is taxed at a lower rate than other investments. However, only one-third of fund members knew how to read and understand their statements, knew the approximate rate of contribution employers were required to make on their behalf, or had worked out how much they needed to save for retirement. About two-fifths understood the fees and charges associated with superannuation.

Overall, about sixty percent of respondents could only answer fifty percent of the simple questions posed correctly.

However, these overall levels of knowledge obscure significant deficiencies in particular demographic and socioeconomic groups. Females, those from a non-English speaking background, those aged under thirty years, the unemployed, those in home duties and the retired and those with a basic level of education are overrepresented in being unable to correctly respond to many basic questions concerning superannuation. The reasons for this lack of knowledge are likely to differ. For women it may relate to career interruptions and a lack of historical engagement with superannuation. For those from a non-English speaking background, it most likely flows from a lack of English language skills and financial literacy. The implication is that both government agencies and superannuation fund trustees may need to target these groups to ensure that some of the deficiencies in knowledge are addressed.

Two broad consumer policy implications are noted. To start with, it is clear that the young and those not in the workforce (but still with superannuation funds) such as the presently unemployed, students, those in home duties and the retired are generally less knowledgeable about superannuation than most other fund members. For the young, it can indicate a lack of interest in (far off) retirement. Pleasingly, at least some of these deficiencies appear to be solved as retirement approaches with levels of superannuation knowledge growing strongly with maturity. But with superannuation choices ever-widening, it is likely that ever younger fund members will need to make decisions today that will affect outcomes far in the future. Policy needs to be formulated to target this group to ensure that the level of superannuation knowledge is raised to improve decisions made today that will have far-reaching implications.

However, this may not be possible with those not in the workforce such as students, those in home duties, and the retired. As in many developed economies, Australia has an ageing population and is increasingly reliant on people returning to the workforce from home duties (and even retirement), while at the same time the labour force is increasingly characterised by casual contracts with shorter terms of sustained employment in a particular firm or industry. It may be difficult for these groups to be targeted with workplace education programs. One important policy direction would be to offer superannuation information programs to all secondary or tertiary students to assist them in being better informed consumers of superannuation products before they potentially enter the workforce.

The second policy implication is that knowledge of superannuation in Australia is patchy, with good levels of understanding in some areas and poor in others. The three worst areas are the ability to read and understand statements, the undertaking of retirement planning and

knowledge of the employer's contribution. The latter is not particularly problematic as this is now set for all employees at nine percent of salaries and wages and compliance is ensured by the Australian Taxation Office. The lack of retirement planning is more problematic, and could potentially cause the most severe adverse outcomes for fund members. Accordingly, further work should be undertaken as to when and why persons seek retirement planning advice. This may indicate opportunities for the subsidised provision of retirement planning advice or compulsory retirement planning attendance at particular working-life milestones.

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TABLE I
Variable Definitions and Statistics

Variable	Definition	Means and percentages
Fees and charges	1 if understand fees and charges on superannuation well, fairly well or very well; 0 otherwise	44.1
Statements	1 if read and understand superannuation statements well, fairly well or very well; 0 otherwise	30.1
Taxation	1 if know that superannuation is taxed at a lower rate than other investments; 0 otherwise	53.5
Employer contribution	1 if know that employers are obliged to make contributions on behalf of employees; 0 otherwise	62.5
Employee contribution	1 if know that employees can make superannuation payments additional to any payments made by their employer; 0 otherwise	58.6
Rate of contribution	1 if know percentage of an employee's salary an employer is required to make on behalf of an employee; 0 otherwise	35.9
Superannuation gap	1 if respond that government will not make up gap from not planning for retirement ; 0 otherwise	84.7
Retirement needs	1 if respond that have worked out how much will need to save for retirement; 0 otherwise	34.4
Knowledge score	Total score for superannuation knowledge (0–8)	4.0
Gender	1 if female; 0 otherwise	45.7
Region	1 if rural, regional or non-capital city location; 0 otherwise	35.3
Language	1 if language spoken most often at home is non-English; 0 otherwise	9.5
Age 18-24	1 if aged 18-24 years; 0 otherwise	12.6
Age 30-39	1 if aged 30-39 years; 0 otherwise	24.7
Age 40-49	1 if aged 40-49 years; 0 otherwise	22.9
Age 50-59	1 if aged 50-59 years; 0 otherwise	17.0
Age 60-69	1 if aged 60-69 years; 0 otherwise	8.4
Age 70+	1 if aged 70+ years; 0 otherwise	3.4
Unemployed	1 if non-working and looking for work (unemployed); 0 otherwise	3.7
Student	1 if non-working and principally engaged as student; 0 otherwise	2.1
Home duties	1 if non-working and principally engaged in home duties; 0 otherwise	5.0
Retired	1 if non-working and principally retired; 0 otherwise	10.5
Professional	1 if principal occupation is professional; 0 otherwise	12.9
Owners or executives	1 if principal occupation is business owner or executive; 0 otherwise	1.9
Small business owner	1 if principal occupation is small business owner; 0 otherwise	4.1
Sales	1 if principal occupation is sales; 0 otherwise	6.6
Semi-professional	1 if principal occupation is semi-professional; 0 otherwise	13.4
Other white collar	1 if principal occupation is other white collar; 0 otherwise	23.9
Skilled trades	1 if principal occupation is skilled tradesman; 0 otherwise	18.0
Semi-skilled trades	1 if principal occupation is semi-skilled tradesman; 0 otherwise	10.2
Unskilled trades	1 if principal occupation is unskilled tradesman; 0 otherwise	5.7
Farm owner	1 if principal occupation is farm owner; 0 otherwise	0.7
Farm worker	1 if principal occupation is farm worker; 0 otherwise	0.8
Year 12	1 if highest level of education is HSC/VCE/6th Form/Year 12; 0 otherwise	16.5
Technical	1 if highest level of education completed is technical/commercial/TAFE; 0 otherwise	10.3
University	1 if highest level of education completed us university/CAE; 0 otherwise	30.8
Single parents	1 if household structure is single parent with children at home; 0 otherwise	6.0
Couples	1 if household structure is couple with children at home; 0 otherwise	42.1
Paying off	1 if residency is being paid off; 0 otherwise	39.5
Rented	1 if residency is being rented; 0 otherwise	21.1
Income	Total household income ($000s)	65.4
Savings	Total household savings, including superannuation but excluding home value ($000s)	42.4
Debt	Total household debt, including mortgage and non-mortgage debt ($000s)	86.1

Table II
Cumulative Knowledge Score

Category	Cumulative percentage of dummy category respondents with score									Cumulative percentage of reference category respondents with score									Pearson chi-square test	
	0	1	2	3	4	5	6	7	8	0	1	2	3	4	5	6	7	8	Statistic	*p*-value
All respondents	2.5	11.0	24.1	39.8	57.7	75.7	88.3	96.6	100.0	–	–	–	–	–	–	–	–	–	–	–
Gender	3.0	12.8	27.3	44.2	63.4	80.2	91.9	97.8	100.0	2.8	10.7	23.3	39.3	57.0	74.8	87.7	96.3	100.0	40.45	0.00
Region	2.1	11.6	25.6	40.7	59.0	77.3	89.3	97.3	100.0	2.5	11.2	24.1	39.5	57.8	75.7	88.2	96.6	100.0	6.37	0.61
Language	2.5	10.0	23.8	43.1	56.9	75.7	89.1	96.7	100.0	2.8	11.5	24.4	39.4	56.8	74.1	87.2	96.3	100.0	5.39	0.72
Age 18-24	0.9	7.9	22.1	42.9	63.7	86.4	95.6	99.1	100.0	2.8	11.8	24.9	40.6	57.7	74.8	87.7	96.3	100.0	37.42	0.00
Age 30-39	0.6	8.7	19.3	35.4	54.1	72.5	89.2	97.9	100.0	3.2	11.8	25.6	41.3	58.9	76.7	88.0	96.2	100.0	31.40	0.00
Age 40-49	0.9	5.6	13.9	27.6	47.4	67.2	82.6	93.8	100.0	2.7	11.5	25.0	41.1	59.1	77.3	89.7	97.1	100.0	68.47	0.00
Age 50-59	1.9	8.9	19.7	33.5	50.8	67.9	81.5	94.4	100.0	2.0	9.2	20.7	36.3	55.3	74.5	87.9	96.6	100.0	26.48	0.00
Age 60-69	8.5	30.8	61.6	78.2	83.9	88.2	92.9	97.2	100.0	1.6	9.3	21.9	37.7	56.2	74.8	87.9	96.5	100.0	198.99	0.00
Age 70+	27.9	59.3	86.0	100.0	–	–	–	–	–	2.5	10.4	22.8	38.3	56.3	74.7	87.8	96.5	100.0	346.64	0.00
Unemployed	3.2	28.0	58.1	80.6	93.5	100.0	–	–	–	2.5	10.8	23.3	39.0	56.9	75.1	88.0	96.5	100.0	86.48	0.00
Student	3.7	24.1	61.1	77.8	94.4	100.0	–	–	–	2.5	10.0	22.3	37.5	55.8	74.4	87.7	96.4	100.0	52.04	0.00
Home duties	3.2	31.0	58.7	83.3	93.7	100.0	–	–	–	0.8	6.7	17.3	32.8	52.8	72.8	86.9	96.2	100.0	133.34	0.00
Retired	17.9	47.9	82.5	100.0	–	–	–	–	–	2.6	11.7	24.6	40.9	59.2	77.4	89.5	96.9	100.0	713.41	0.00
Professional	1.9	6.5	20.4	32.7	47.5	64.2	79.9	94.8	100.0	2.6	11.1	24.3	40.2	58.0	75.8	88.3	96.6	100.0	37.90	0.00
Owners or executives	2.1	8.5	14.9	19.1	40.4	68.1	87.2	95.7	100.0	2.6	10.7	23.6	39.1	56.4	74.7	87.8	96.5	100.0	10.48	0.23
Small business owner	1.0	19.4	35.9	56.3	88.3	98.1	100.0	–	–	2.6	11.1	24.3	39.5	57.6	75.7	88.3	96.7	100.0	54.37	0.00
Sales	1.8	10.8	21.1	44.6	59.6	75.3	87.3	95.2	100.0	2.6	11.1	24.5	40.3	58.2	76.0	88.5	96.6	100.0	10.80	0.21
Semi-professional	2.1	10.4	21.4	36.9	54.5	73.8	86.6	97.0	100.0	2.8	11.9	25.3	41.7	58.9	76.9	89.0	97.1	100.0	4.20	0.84
Other white collar	1.8	8.5	20.3	33.9	54.1	71.7	86.0	95.2	100.0	2.3	10.8	24.2	40.1	58.2	75.6	87.8	96.4	100.0	17.48	0.03
Skilled trades	3.5	12.1	23.4	38.4	55.6	75.9	90.3	97.6	100.0	2.7	11.2	24.2	39.6	57.6	75.0	87.9	96.5	100.0	9.05	0.34
Semi-skilled trades	1.6	10.1	23.0	42.0	58.8	81.3	91.4	97.7	100.0	2.4	11.0	23.6	39.0	56.9	75.1	87.8	96.5	100.0	10.57	0.23
Unskilled trades	4.2	11.9	32.9	53.8	71.3	85.3	95.8	99.3	100.0	2.6	11.0	23.9	39.7	57.6	75.5	88.2	96.6	100.0	21.11	0.01
Farm owner	0.0	16.7	50.0	61.1	77.8	100.0	–	–	–	2.5	10.9	23.9	39.6	57.5	75.6	88.3	96.6	100.0	12.46	0.13
Farm worker	5.3	36.8	52.6	68.4	78.9	89.5	89.5	94.7	100.0	2.8	11.6	24.6	39.8	57.1	74.9	88.3	96.5	100.0	16.65	0.03
Year 12	1.4	8.2	21.3	39.9	60.6	79.5	87.9	97.1	100.0	2.5	11.2	24.3	40.2	58.2	76.0	88.4	96.7	100.0	16.71	0.03
Technical	3.1	9.7	22.0	36.7	53.3	73.0	86.9	95.8	100.0	3.0	12.8	26.5	43.6	61.4	78.9	89.7	97.1	100.0	3.80	0.87
University	1.6	7.1	18.6	31.4	49.5	68.3	85.1	95.6	100.0	2.5	11.2	24.2	39.9	57.6	75.3	88.2	96.5	100.0	49.55	0.00
Single parents	2.6	8.6	23.0	38.2	59.2	80.9	89.5	98.0	100.0	3.4	13.2	28.4	43.6	60.1	78.0	89.3	97.1	100.0	6.80	0.56
Couples	1.4	8.1	18.1	34.7	54.5	72.4	86.9	95.9	100.0	3.7	14.0	29.5	45.0	61.7	78.2	89.2	96.9	100.0	42.16	0.00
Paying off	0.8	6.5	15.9	32.0	51.7	71.8	86.9	96.2	100.0	2.8	11.7	24.6	39.8	57.0	74.0	87.0	96.0	100.0	70.23	0.00
Rented	1.5	8.5	22.2	39.7	60.3	82.1	93.2	98.9	100.0	2.2	9.6	21.4	36.1	52.9	71.9	85.2	95.6	100.0	31.71	0.00

Table III
Parameter Estimates and Statistics: Cumulative Knowledge Score

	Ordinary coefficient	Standard error	*p*-value	Std. coefficient	Variance inflation factor
Gender	-0.307	0.066	0.000	-0.078	1.185
Region	0.080	0.066	0.224	0.020	1.090
Language	-0.099	0.105	0.347	-0.015	1.059
Age 18-24	-0.068	0.129	0.598	-0.020	2.033
Age 30-39	0.052	0.112	0.644	-0.008	2.586
Age 40-49	0.386	0.117	0.001	0.072	2.668
Age 50-59	0.394	0.126	0.002	0.066	2.471
Age 60-69	-0.104	0.172	0.548	-0.022	2.528
Age 70+	-0.764	0.229	0.001	-0.076	1.915
Unemployed	-1.947	0.164	0.000	-0.188	1.055
Student	-1.700	0.213	0.000	-0.126	1.057
Home duties	-2.040	0.147	0.000	-0.228	1.142
Retired	-2.745	0.145	0.000	-0.429	2.171
Professional	1.304	0.242	0.000	0.223	7.292
Owners or executives	1.201	0.317	0.000	0.083	2.034
Small business owner	-0.213	0.269	0.430	-0.022	3.146
Sales	1.123	0.250	0.000	0.143	4.263
Semi-professional	1.274	0.238	0.000	0.222	7.272
Other white collar	1.399	0.230	0.000	0.305	10.628
Skilled trades	1.068	0.234	0.000	0.210	8.920
Semi-skilled trades	1.026	0.240	0.000	0.159	5.849
Unskilled trades	0.855	0.254	0.001	0.101	3.831
Farm owner	-0.275	0.425	0.517	-0.012	1.422
Farm worker	0.738	0.414	0.075	0.033	1.423
Year 12	0.040	0.089	0.657	0.008	1.218
Technical	0.202	0.106	0.057	0.031	1.147
University	0.264	0.082	0.001	0.062	1.578
Single parents	-0.218	0.134	0.104	-0.027	1.130
Couples	-0.052	0.070	0.462	-0.013	1.330
Paying off	-0.255	0.086	0.003	-0.064	1.975
Rented	-0.323	0.094	0.001	-0.067	1.630
Income	0.209	0.062	0.001	0.056	1.148
Saving	0.177	0.047	0.000	0.064	1.217
Debt	0.051	0.014	0.000	0.076	1.805
Constant	1.930	0.401	0.000	–	–
F-statistic	51.525	–	0.000	–	–
R^2	0.643	–	–	–	–

TABLE IV
Parameter Estimates and Statistics: Fees and Charges, Statements, Taxation and Employer Contribution

	Fees and charges			Statements			Taxation			Employer contribution		
	Ordinary coefficient	*p*-value	Odds	Ordinary coefficient	*p*-value	Odds	Ordinary coefficient	*p*-value	Odds	Ordinary coefficient	*p*-value	Odds
Gender	-0.309	0.001	0.734	-0.212	0.029	0.809	-0.667	0.000	0.513	0.322	0.026	1.379
Region	0.182	0.048	1.200	0.085	0.375	1.089	-0.103	0.265	0.903	0.114	0.439	1.120
Language	0.269	0.068	1.308	0.249	0.099	1.283	-0.208	0.159	0.812	-0.621	0.002	0.538
Age 18-24	0.251	0.188	1.286	-0.057	0.773	0.944	-0.030	0.869	0.971	0.193	0.536	1.212
Age 30-39	0.411	0.012	1.508	-0.034	0.842	0.967	0.042	0.787	1.043	-0.389	0.118	0.678
Age 40-49	0.794	0.000	2.213	0.442	0.010	1.556	0.219	0.179	1.245	-0.374	0.146	0.688
Age 50-59	1.065	0.000	2.902	0.406	0.028	1.501	0.240	0.172	1.272	-0.674	0.012	0.510
Age 60-69	1.482	0.000	4.403	0.314	0.213	1.369	0.401	0.103	1.493	-1.787	0.000	0.167
Age 70+	0.967	0.003	2.629	0.341	0.308	1.406	-0.731	0.024	0.481	-20.510	0.995	0.000
Unemployed	-0.100	0.669	0.905	0.137	0.569	1.147	0.038	0.869	1.038	-22.828	0.995	0.000
Student	0.360	0.235	1.433	0.517	0.091	1.677	0.089	0.765	1.093	-22.974	0.996	0.000
Home duties	-0.184	0.388	0.832	-0.027	0.904	0.973	-0.116	0.575	0.890	-23.075	0.995	0.000
Retired	0.191	0.348	1.211	0.006	0.978	1.006	0.138	0.505	1.148	-21.429	0.992	0.000
Professional	0.782	0.033	2.185	0.847	0.044	2.334	0.512	0.130	1.668	21.448	0.996	2.1E+09
Owners or executives	1.345	0.004	3.839	1.222	0.015	3.396	0.264	0.558	1.302	21.016	0.996	1.3E+09
Small business owner	0.765	0.056	2.149	0.976	0.030	2.654	0.256	0.492	1.292	17.844	0.997	5.6E+07
Sales	0.633	0.095	1.883	0.680	0.116	1.974	-0.081	0.814	0.922	21.898	0.996	3.2E+09
Semi-professional	0.812	0.024	2.253	0.910	0.029	2.483	-0.007	0.982	0.993	22.185	0.996	4.3E+09
Other white collar	0.797	0.023	2.218	0.755	0.064	2.128	0.236	0.456	1.266	22.375	0.996	5.2E+09
Skilled trades	0.733	0.039	2.081	0.552	0.180	1.737	-0.222	0.491	0.801	21.955	0.996	3.4E+09
Semi-skilled trades	0.597	0.101	1.818	0.580	0.168	1.786	-0.174	0.599	0.841	22.246	0.996	4.6E+09
Unskilled trades	0.503	0.192	1.653	0.708	0.106	2.029	-0.482	0.173	0.618	22.024	0.996	3.7E+09
Farm owner	0.227	0.707	1.255	0.635	0.330	1.888	1.211	0.070	3.356	19.097	0.997	2.0E+08
Farm worker	0.307	0.615	1.359	-0.123	0.870	0.884	-0.213	0.708	0.808	21.744	0.996	2.8E+09
Year 12	0.148	0.241	1.160	0.082	0.531	1.086	-0.086	0.488	0.918	0.127	0.521	1.135
Technical	0.059	0.692	1.061	0.216	0.154	1.241	0.388	0.008	1.473	0.149	0.514	1.160
University	0.147	0.200	1.158	-0.121	0.314	0.886	0.658	0.000	1.931	0.209	0.247	1.233
Single parents	-0.481	0.014	0.618	-0.277	0.183	0.758	-0.001	0.996	0.999	0.220	0.473	1.247
Couples	-0.052	0.597	0.949	0.082	0.423	1.085	-0.100	0.315	0.905	0.021	0.883	1.022
Paying off	-0.215	0.073	0.807	-0.185	0.139	0.832	0.009	0.943	1.009	-0.183	0.312	0.833
Rented	-0.237	0.074	0.789	-0.135	0.336	0.874	-0.230	0.080	0.794	0.096	0.643	1.101
Income	0.031	0.718	1.032	0.107	0.244	1.113	0.198	0.023	1.219	0.314	0.020	1.368
Savings	0.261	0.000	1.298	-0.051	0.460	0.950	0.222	0.001	1.249	-0.045	0.667	0.956
Debt	0.022	0.248	1.023	0.044	0.028	1.045	0.005	0.785	1.005	0.025	0.400	1.026
Constant	-2.591	0.000	0.075	-2.019	0.001	0.133	-1.401	0.013	0.246	-21.252	0.996	0.000
Hosmer-Lemeshow	3.836	0.872	–	14.288	0.075	–	6.476	0.594	–	6.942	0.543	–
Nagelkerke R^2	0.125	–	–	0.040	–	–	0.140	–	–	0.690	–	–

The null hypothesis for the Hosmer-Lemeshow test statistic is no functional misspecification; the Nagelkerke R^2 is analogous to R^2 in the linear regression model.

TABLE V
Parameter Estimates and Statistics: Employee Contribution, Rate of Contribution, Superannuation Gap and Retirement Needs

	Employee contribution			Rate of contribution			Superannuation gap			Retirement needs		
	Ordinary coefficient	p-value	Odds	Ordinary coefficient	p-value	Odds	Ordinary coefficient	p-value	Odds	Ordinary coefficient	p-value	Odds
Gender	0.070	0.581	1.072	-0.292	0.004	0.747	0.302	0.203	1.352	-0.234	0.022	0.792
Region	0.019	0.885	1.019	-0.185	0.075	0.831	0.312	0.195	1.366	0.278	0.006	1.320
Language	-0.863	0.000	0.422	-0.044	0.788	0.957	-0.525	0.088	0.591	0.173	0.278	1.189
Age 18-24	-0.444	0.077	0.642	-0.028	0.886	0.972	0.792	0.120	2.209	-0.300	0.154	0.741
Age 30-39	-0.416	0.064	0.659	0.192	0.250	1.211	-0.481	0.222	0.618	0.174	0.303	1.190
Age 40-49	-0.499	0.031	0.607	0.041	0.813	1.042	-0.289	0.489	0.749	0.744	0.000	2.104
Age 50-59	-0.696	0.005	0.499	0.019	0.921	1.019	-0.183	0.694	0.833	1.054	0.000	2.870
Age 60-69	-1.602	0.000	0.201	-0.173	0.569	0.841	-2.637	0.000	0.072	0.612	0.030	1.844
Age 70+	-20.342	0.995	0.000	-18.656	0.996	0.000	-35.412	0.992	0.000	-18.274	0.996	0.000
Unemployed	-22.305	0.995	0.000	-20.838	0.996	0.000	-0.758	0.046	0.468	-0.164	0.510	0.849
Student	-22.350	0.996	0.000	-20.733	0.997	0.000	0.029	0.965	1.029	0.012	0.972	1.012
Home duties	-22.607	0.995	0.000	-20.807	0.995	0.000	0.105	0.838	1.111	0.061	0.776	1.063
Retired	-21.230	0.992	0.000	-20.484	0.993	0.000	-35.227	0.988	0.000	-20.842	0.993	0.000
Professional	20.787	0.996	1.1E+09	19.795	0.997	4.0E+08	1.368	0.037	3.926	0.349	0.393	1.417
Owners or executives	20.296	0.996	6.5E+08	19.490	0.997	2.9E+08	0.793	0.350	2.211	0.290	0.568	1.336
Small business owner	17.267	0.997	3.2E+07	17.189	0.997	2.9E+07	1.891	0.024	6.625	0.054	0.902	1.056
Sales	21.040	0.996	1.4E+09	19.544	0.997	3.1E+08	2.203	0.007	9.055	0.192	0.646	1.212
Semi-professional	21.328	0.996	1.8E+09	19.766	0.997	3.8E+08	0.994	0.112	2.703	-0.013	0.975	0.987
Other white collar	21.483	0.996	2.1E+09	20.016	0.997	4.9E+08	1.519	0.012	4.568	0.028	0.943	1.028
Skilled trades	20.942	0.996	1.2E+09	19.454	0.997	2.8E+08	1.285	0.035	3.616	0.304	0.443	1.356
Semi-skilled trades	21.282	0.996	1.7E+09	19.377	0.997	2.6E+08	1.182	0.057	3.262	-0.040	0.921	0.961
Unskilled trades	20.900	0.996	1.2E+09	19.414	0.997	2.7E+08	0.480	0.442	1.616	-0.058	0.894	0.944
Farm owner	18.457	0.997	1.0E+08	17.775	0.997	5.2E+07	1.289	0.316	3.628	-0.827	0.253	0.438
Farm worker	21.111	0.996	1.5E+09	19.693	0.997	3.6E+08	17.027	0.991	2.5E+07	0.007	0.992	1.007
Year 12	0.061	0.717	1.063	-0.099	0.477	0.906	0.090	0.780	1.094	0.080	0.564	1.083
Technical	0.293	0.153	1.340	0.260	0.113	1.297	0.050	0.891	1.051	-0.097	0.556	0.908
University	0.323	0.047	1.381	0.089	0.492	1.093	0.075	0.794	1.078	0.193	0.126	1.213
Single parents	0.000	0.999	1.000	0.067	0.738	1.070	-0.171	0.700	0.843	-0.506	0.019	0.603
Couples	-0.099	0.449	0.905	-0.123	0.251	0.884	-0.184	0.447	0.832	0.110	0.293	1.117
Paying off	-0.198	0.224	0.820	-0.442	0.001	0.643	-0.424	0.181	0.654	-0.233	0.068	0.792
Rented	-0.281	0.107	0.755	-0.450	0.002	0.637	-0.022	0.945	0.978	-0.430	0.003	0.650
Income	0.250	0.044	1.285	0.352	0.002	1.422	0.288	0.131	1.334	0.137	0.178	1.146
Savings	-0.125	0.173	0.882	0.046	0.537	1.047	0.237	0.113	1.268	0.454	0.000	1.575
Debt	0.064	0.014	1.066	0.074	0.001	1.077	0.144	0.003	1.155	0.031	0.148	1.031
Constant	-19.912	0.997	0.000	-21.122	0.997	0.000	-0.037	0.975	0.964	-3.165	0.000	0.042
Hosmer-Lemeshow	7.761	0.457	–	12.464	0.132	–	13.159	0.106	–	12.128	0.146	–
Nagelkerke R^2	0.620	–	–	0.356	–	–	0.744	–	–	0.266	–	–

The null hypothesis for the Hosmer-Lemeshow test statistic is no functional misspecification; the Nagelkerke R^2 is analogous to R^2 in the linear regression model.

TABLE VI
Observed and Predicted Values

Knowledge area	Response	Observed	Predicted		Correct
			0	1	%
Fees and charges	0	1405	1064	341	75.73
	1	1111	575	536	48.24
	Total	2516	1639	877	63.59
Statements	0	1757	1743	14	99.20
	1	759	743	16	2.11
	Total	2516	2486	30	69.91
Taxation	0	1170	678	492	57.95
	1	1346	427	919	68.28
	Total	2516	1105	1411	63.47
Employer contribution	0	942	669	273	71.02
	1	1574	17	1557	98.92
	Total	2516	686	1830	88.47
Employee contribution	0	1040	671	369	64.52
	1	1476	25	1451	98.31
	Total	2516	696	1820	84.34
Rate of contribution	0	1612	1282	330	79.53
	1	904	410	494	54.65
	Total	2516	1692	824	70.59
Superannuation gap	0	383	279	104	72.85
	1	2133	4	2129	99.81
	Total	2516	283	2233	95.71
Retirement needs	0	1649	1392	257	84.41
	1	867	478	389	44.87
	Total	2516	1870	646	70.79

Observed is the actual response by category, predicted is the predicted response by category; percentage corrected is predicted response by category as a percentage of the observed category; the predictions correspond to the models in Tables 4 and 5; total percentage correct is the number of correct predictions as a percentage of the total observed.