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# Are Australians under or over confident when it comes to tax literacy, and why does it matter?

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***Abstract***

The concept of financial literacy and capability is seen as important in modern economies. An important part of financial capability is a person's confidence in dealing with financial decisions. It has been argued that financial literacy should be extended to include knowledge and understanding of the tax system, given it can influence investment strategies and wealth outcomes. We examine how Australians' confidence relates to their tax literacy. The findings suggest that lower confidence is more likely to relate to certain demographics. However, unlike other financial literacy measures, it appears that peoples' tax confidence is more aligned to their actual understanding.

**Keywords:** financial literacy, tax literacy, financial capability, confidence

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## 1. INTRODUCTION

The recent decade has been challenging for investors. They have been faced with an economic climate where investors have had their savings eroded due to factors such as the global financial crisis, poor investment returns, heightened market intervention and reregulation (Bateman et al., 2012). It is evident that many investors were not fully aware of the risks being taken or in some cases were misled by targeted marketing. Such examples highlight the importance of financial literacy as a critical issue for governments and consumers alike. Similar to other jurisdictions, the Australian Government has focused on financial literacy of its citizens. In 2004, the Australian Government provided funding to establish the Consumer and Financial Literacy Taskforce and in 2011, as a result of initial research from this taskforce, the Government launched the National Financial Literacy Strategy (ASIC, 2011b). It was suggested that improving financial skills and providing education was central to overall economic prosperity and that low levels of financial literacy act as a barrier to meaningful participation in the financial system (Commonwealth Department of Treasury, 2006).

It has been argued that financial deregulation and an increase in the availability of financial products, has led to a 'complex market for consumers' (Worthington, 2006, p. 59). Additionally, as a result of shrinking workforces, an ageing population, and increased longevity, there is a global trend in western countries toward self-funded retirement (Kelly, 2003). For example, in the last thirty years in Australia, there has been a dramatic increase in Australia's retirement savings, driven by the compulsory superannuation system. It is estimated that there is more than $2 trillion invested through Australia's retirement system (APRA, 2015), making it approximately the fourth largest pool of privately held retirement savings. However, it appears that many Australians have a low level of understanding of the system (Worthington, 2008). Given the importance of self-funded retirement, these trends are worrying and exacerbated by survey evidence measuring adult financial literacy in Australia, which suggests that there are certain at-risk groups which have low levels of financial literacy particularly in relation to financial products and superannuation (retirement savings) (Worthington, 2008). For example, the Australian and New Zealand Banking Group Ltd (ANZ) surveys of adult financial literacy in Australia have consistently reported people find superannuation aspects more difficult than basic banking (ANZ, 2005; 2008; 2015).

Internationally, the concept of financial literacy has been broadened to 'financial capability' as a more appropriate term when describing a person's abilities or skills in relation to financial matters (Hogarth, 2002). This is also demonstrated in the most recent ANZ surveys of adult financial literacy in Australia acknowledging that financial literacy 'is a complex combination of a person's skills, knowledge, attitudes and ultimately their behaviours in relation to money' (ANZ, 2011; 2015). Internationally, the notion of financial capability is seen as important also. For example, in Canada it has been stated it is important for Canadians to:

> develop their skills and confidence to be aware of financial opportunities, to know where to go for help, to make informed choices and to take effective action to improve their financial well-being (Government of Canada, 2006, p. 1).

Studies have demonstrated that increased experience can increase confidence, although accuracy will not necessarily improve with this increased confidence in the absence of systematic feedback (Ryback, 1967). Estes and Hosseini (1988) found, in a survey of shareholders, security analysists, institutional investors and business persons, that females have significantly lower confidence than their male counterparts. This is important as extremely low levels of confidence can affect, even stop, investment decision making. Such low confidence can mean that opportunities with positive expected values can be missed. Although, those who are too (or over) confident can partake in reckless behaviour and incur avoidable losses (Estes & Hosseini, 1988). It appears that even expertise in the area does not stop someone being over-confident, as some studies have found that experts can be prone to over-confidence (Lambert, Bessière & N'Goala, 2012; Russo & Schoemaker, 1992).

In terms of knowledge areas, Blue and Brimble (2014) argue for a broader framework that incorporates enabling factors and content tailored to the circumstances of the participants. Furthermore, Chardon (2011) argues that financial capability needs to include an understanding of taxation and superannuation (taxation of retirement savings). This is because the tax system can have different applications depending upon the type of investment, and the government can use the tax system to deliver policies (Government of Canada, 2006, pp. 9, 17).

Chardon et al. reported tax literacy scores of Australians indicating that 19 per cent of Australians had tax literacy scores classified as either 'poor' or 'low' (Chardon, Freudenberg & Brimble, 2016). Also, it was found that demographic groups with low financial literacy were also likely to have lower levels of tax literacy, identifying the links between these two components. More recently, Mihaylov et al. (2015) found that literacy in terms of self-managed superannuation fund (SMSF) regulation is likely to be significantly higher for those trustees of compliant SMSFs compared to non-compliant ones. Consequently, it may be that higher levels of tax literacy may lead to improved compliance behaviour. However, this study did not find any significant difference in compliance knowledge and over-confidence for trustees of SMSFs (Mihaylov et al., 2015, p. 754).

This article examines Australian taxpayers' confidence in understanding basic tax and superannuation (retirement savings) concepts which has not been addressed in the literature to date. We find that there is likely to be lower tax confidence with females, younger age groups and those on lower incomes. We also find that lower confidence in relation to taxation and superannuation issues is likely to be found in those with less participation in the paid workforce (that is, 'full-time students' or those 'not in paid work') and those with lower education levels.

The remainder of the article is structured as follows. The next section provides a broad summary of the tension between the concepts of financial literacy, financial capability and tax literacy. The important issue of confidence is detailed, followed by the research methodology and the demographics of the participants. Analysis of the results, recommendations and future research directions are then outlined before the conclusion.

## 2. FINANCIAL LITERACY

Financial literacy has been defined as the ability to make informed judgements and effective decisions regarding the use and management of money (ANZ, 2015; Financial Literacy Foundation, 2007). The importance of financial literacy lies in the potential financial difficulty arising from poor financial decision making as acknowledged by the Organisation for Economic Co-operation and Development (OECD) in the context of the global financial crisis:

> the lack of understanding of households on financial issues and, in particular, on credit and investment, has also a major role. As a result, individuals have accepted (sometimes unknowingly) to support more financial risk than what they could afford (OECD, 2009, p. 4).

More recently, Lusardi and Mitchell argue that 'if the effects of financial literacy on financial behaviour can be taken as causal, the costs of financial ignorance are substantial (Lusardi & Mitchell, 2013, p. 30). The Australian Government has also acknowledged the importance of financial literacy at a population level and launched the National Financial Literacy Strategy (ASIC, 2011b) as a result of research which suggested that improving financial skills was central to overall economic prosperity and that low levels of financial literacy act as a barrier to participation in the financial system (Commonwealth Department of Treasury, 2006).

In Australia, the Australia and New Zealand Banking Group Limited (ANZ) has funded a national 'Survey of Adult Financial Literacy in Australia' on a number of occasions (2003, 2005, 2008, 2011 and 2014) and the results remain the most widely cited measures of financial literacy in Australia (ANZ, 2003; 2005; 2008; 2011; 2015). The 2003, 2005 and 2008 surveys were underpinned by a financial literacy framework largely based on principles established in the United Kingdom (UK) by the Adult Financial Literacy Advisory Group (Financial Services Authority, 2004; Kempson, Collard & Moore, 2006). The two most recent surveys incorporated factors such as: knowledge, skills, attitudes, behaviours and personal circumstances rather than focusing merely on knowledge and understanding (ANZ, 2011; 2015). It has been consistently found that Australians are broadly financially literate, but that certain groups have particular challenges, and certain financial skills, services and products were not as well understood or utilised by these groups (ANZ, 2008, p. 1). It has been found that lower levels of financial literacy were more likely to be found in the following groups: those with lower levels of education; those not working, or in unskilled work; those with lower incomes (<$20 000); those with lower savings levels (<$5000); females, single people and those at both the younger and older extremes of the age profile (ANZ, 2005; 2008; 2011; 2015). These demographic findings have remained broadly consistent in all of the surveys. Further, it has been reported that all population groups found superannuation (retirement) issues more difficult than basic banking (ANZ, 2005, p. 2; 2008, p. 6).

Ramsay and Capuano found that improved financial literacy means that people are more likely to be realistic and proactive in relation to their financial position (Ramsay & Capuano, 2011, p. 40). Such increased financial literacy can be linked to improved savings and thereby achievement of financial goals (Ramsay & Capuano, 2011, p. 40).

## 3. FINANCIAL CAPABILITY

The notion of financial literacy has expanded over the last decades, with other definitions put forward, such as, 'people being informed and confident decision makers in all aspects of their budgeting, spending and saving' (Worthington, 2006, p. 62). Internationally, 'financial capability' is a more accepted term and is defined by Kempson, Collard and Moore (2006, p. 44) as incorporating 'financial knowledge, skills and attitudes' and by Leskinen and Raijas (2006, p. 13) as 'consisting of an individual's personal characteristics influenced by various factors in his/her micro and macro environment'. Overall, financial capability is defined as 'the ability to make informed judgements and to take effective decisions regarding the use and management of money' within a framework that comprises knowledge, skills and attitudes (Kempson, Collard & Moore, 2006, p. 44).

These other descriptions imply that a financially literate person will behave in a certain way, make better decisions and have certain attitudes and characteristics. These elements, and the definitions presented above, all describe a set of behaviours or skills rather than mere knowledge about a subject. Lusardi and Mitchell (2013, p. 43) argue that there is a link between financial knowledge and behaviour, as their research found that 'both instrumental variables and experimental approaches suggest that financial literacy does play a role in influencing financial decision making, and the causality goes from knowledge to behaviour'.

'Financial capability' is considered a more appropriate term when describing a person's abilities or skills in relation to financial matters (Blue & Brimble, 2014; Hogarth, 2002; Vyvyan & Brimble, 2006) as manifested in the recent focus in the ANZ surveys on building confidence, positive attitudes and beliefs, and self-efficacy. Confidence is seen as a critical component of financial capability as it underpins one's ability to implement acquired financial knowledge, inform effective financial decisions and drive awareness in relation to one's limits and thus the propensity to seek financial advice (Blue & Brimble, 2014).

## 4. TAX LITERACY

To date the understanding and attitudes towards taxation have largely been absent in financial literacy studies. This is despite the fact that taxation is something which impacts on each individual or business and thereby influences their overall financial position. Furthermore, for many investments (such as for share and rental property investments) the purported tax advantages are often used as incentives or sales tactics; particularly for risky investment scams (Financial Literacy Foundation, 2007, p. 24). Also, the tax system can be used to deliver government policy agendas, such as retirement contributions, tax benefits for children, income supplements for pensioners and incentives to encourage savings (Government of Canada, 2006, pp. 9, 13, 17). For example, it has been reported that through a Canadian community service to help low income people prepare their tax returns, that these people were either not aware or did not know how to access government benefits to which they were entitled (Government of Canada, 2006, p. 6). Consequently, it is argued that tax is an important part of financial literacy and capability. Indeed, the OECD's 'Core Competencies Framework on Financial Literacy for Youth' includes an understanding of tax in terms

of its effect on prices, making price calculations and broadly understanding how tax can impact on individuals, households and society (OECD/INFE, 2015).

A survey by the Financial Literacy Foundation explored Australians' attitudes and behaviours to money and found that, given that peoples' self-assessed ability to protect income was overstated, they may be at risk of being caught by investment scams (Financial Literacy Foundation, 2007, p. 24). These investment scams can use purported tax savings as part of their marketing. Also, taxation can influence a person's financial position in terms of meeting tax liabilities on time, preparing tax returns accurately, claiming all available entitlements and communicating effectively with one's financial or tax advisors. It was for these reasons that Chardon (2011) argued that taxation and superannuation must be seriously considered as important components of financial capability.

In terms of tax literacy, Chardon et al. (2016) reported the general level of tax literacy in Australia through a tax literacy score (TLS) of the Australians surveyed. These results indicated that 81 per cent of Australians had a TLS at the 'basic' or 'higher' level. This in turn means that 19 per cent of Australians have a TLS classified as either 'poor' or 'low'. However, when taking the mean TLS as a percentage of the maximum score, it was found that the mean score falls at 52 per cent of the maximum score. In comparison, the 2008 and 2015 ANZ surveys found that the mean financial literacy score (FLS), as a percentage of the maximum score, was 71.3 per cent (ANZ, 2008; 2015). This means that while Australians are broadly tax literate they are less literate when it comes to specific tax and superannuation issues compared to broader financial issues. Furthermore, it was found that there are particular sections of the community which are at risk of low tax and superannuation literacy. However, these reported findings did not include the broader understanding of financial capability in terms of Australians' confidence in their tax understanding. This broader understanding of confidence is important because research in relation to tax compliance has suggested that personal taxpayers are not necessarily confident in the accuracy of their returns even when they used an agent (McKerchar, 2002).

Overall, it can be appreciated that the notion of financial literacy has grown in importance, with studies demonstrating low levels of literacy, especially in certain segments of the population. Furthermore, evidence suggests that financial literacy should be broadened to include ones' capability as well as tax literacy.

## 5. PRIOR RESEARCH—FINANCIAL CAPABILITY AND CONFIDENCE

In 2006 the Financial Literacy Foundation conducted a telephone survey of 7500 Australians aimed at complementing existing surveys (such as the ANZ survey) and focused 'more on participants' self-assessed ability and confidence versus their understanding, attitudes and behaviours about money' (Financial Literacy Foundation, 2007, p. 1). The discussion in this section focuses on some of the findings in relation to confidence in the context of tax and superannuation.

While self-assessed confidence to invest was relatively high, the survey found that only 34 per cent of adults would actually consider both risk and return when investing, and only a small proportion would consider reputation (6 per cent) and diversification (5 per cent) (Financial Literacy Foundation, 2007, p. 10). Consequently there was a gap between the self-assessed confidence to invest and the indicators of actual

confidence or ability. The survey also found that 46 per cent of participants currently invested in either shares or managed funds and 18 per cent were currently paying off an investment property (Financial Literacy Foundation, 2007, p. 10). We note that the tax treatment of these investment products differs which can influence an investor's after-tax returns and therefore an individual's cash flow position and overall wealth. This highlights the relevance of tax literacy to investment decisions.

In relation to protecting money, Australians reported a high level of confidence in their ability to recognise a scam or investment scheme (above 80 per cent) (Financial Literacy Foundation, 2007, p. 24). However, as the skills required to recognise a scam were considered to be the same as for investing, fewer people actually recognised key aspects of scams and schemes (such as risk and return and understanding financial language) and went ahead with investments despite a lack of confidence or ability. Consequently, peoples' self-assessed ability to protect income was overstated and they may be at risk of being caught by these investment scams (Financial Literacy Foundation, 2007, p. 24). Purported tax advantages are often used as incentives or sales tactics for many investments (such as for share and rental property investments) and particularly for risky investment scams. The findings from this research appear to indicate a general lack of understanding of fundamental aspects that should be considered when investing. These findings are supported by the findings of the ANZ surveys in relation to risky investments. This gives weight to the argument that there needs to be more research on which aspects of taxation consumers lack confidence, knowledge and understanding. With such an understanding, it could be possible to optimise consumers' investment decision making and to mitigate the risk of consumers being caught by investment scams.

In relation to obtaining information and advice, the survey found that 68% of people had used or were likely to use accountants or tax agents to obtain information or advice (Financial Literacy Foundation, 2007, p. 27). Further, the most common reason for seeking information or advice was for assistance in completing a tax return. Although participants were highly confident in their ability to get information and deal with financial service providers (greater than 80 per cent), only 64 per cent said they had an ability to understand financial language (Financial Literacy Foundation, 2007, p. 27). One of the overall findings of the survey was that peoples' attitudes and beliefs about money can adversely affect their actual financial literacy (Financial Literacy Foundation, 2007, pp. 48–49). The Foundation recommended that where peoples' actual ability is lacking, effort should be focussed on building confidence and competence (Financial Literacy Foundation, 2007, pp. 48–49). This is important because extremely low levels of confidence can affect, even stop, investment decisions. Such low confidence can mean that opportunities with positive expected values can be missed (Estes & Hosseini, 1988).

It has been argued that one of the problems with financial literacy education is that even those who are financially literate can make poor financial decisions (Willis, 2011). While this assertion itself is not disputed, it nevertheless provides support for the argument that taking a holistic approach to the elements of financial literacy is important. Given that research demonstrates increased confidence is more likely to lead to consumers seeking advice and assistance, this means that programs focusing on improving confidence may help those who are already financially literate to make better financial decisions. These findings support the argument that confidence is an important aspect of an overall financial literacy model.

Ali et al. (2014, p. 346) found that in a survey of Australian high school students that they were over-confident in terms of budgets and calculations compared to their actual skills. Such misalignment is seen as important because such over-confidence may mean they do not seek further assistance or information when they should.

This concept of confidence (or self-efficacy) as an important aspect of overall financial literacy has been explored in international financial literacy and behavioural economics research. A study which explored financial literacy, financial confidence and expectations of inflation, found that people with low financial literacy also have less confidence and shorter-term financial planning goals (de Bruin et al., 2010). De Bruin et al. (2010, p. 399) argue that those with less financial confidence may not feel they have the ability to make complex financial decisions and that confidence is an important aspect for increasing financial literacy. Van Rooij, Lusardi and Alessie (2012) also found that those with more confidence in their financial knowledge have a higher propensity to plan for the financial future. In terms of confidence and its importance when measuring financial literacy (or when determining where there might be problems with financial literacy), it has been argued that 'self-reported confidence often has independent predictive power for financial outcomes relative to more objective test-based measures of financial literacy' (Hastings, Madrian & Skimmyhorn, 2012, p. 13). Lusardi and Mitchell (2009) have also argued there is a strong correlation between self-assessed and objective measures of financial literacy. Kempson et al. (2006) asserted that a financial literacy model which takes into account (a) knowledge and understanding; (b) skills; and (c) confidence and attitudes are the three key elements that determine behaviour.

There has also been research which considers the potential gaps between knowledge and confidence (both under and over-confidence). Lusardi and Mitchell argue that 'consumer overconfidence regarding their financial knowledge may be a deterrent to seeking out professional advice, thus widening the "knowledge gap"' (Lusardi & Mitchell, 2006, p. 7). Research has demonstrated that financial literacy tends to improve with increased confidence and under-confidence has a significant negative impact on overall net worth (van Rooij, Lusardi & Alessie, 2012). The literature indicates that confidence can be a predictive indicator of financial literacy. Also over-confidence can potentially lead to poor planning and lower propensity to seek advice. It has also been argued by Gallery et al. that a:

> mismatch between self-assessed financial knowledge and actual understanding of more advanced investment matters potentially leads to over-confidence in investment decision-making that could result in undesirable long-term financial outcomes (2011, p. 298).

Consequently, financial literacy is not just about knowledge and understanding of complex areas, it is also about increasing confidence, understanding when to seek advice, and being able to communicate effectively with one's advisor. Widdowson and Hailwood agree:

> [T]he final result (of financial literacy) is not to create financial experts; it is more important to equip individuals with sufficient knowledge to make sense of financial activities, seek out appropriate information, feel able to ask relevant questions, and be able to understand and interpret the information that they subsequently acquire (2007, p. 46).

It is argued that research about self-reported confidence as it relates to specific tax and superannuation aspects will provide additional insights and understanding about financial literacy and capability. A more thorough understanding of confidence levels may assist in identifying specific financial areas which need to be focused on or improved. To date, no study internationally has explored the extent to which there are asymmetries between peoples' perceived confidence in understanding taxation concepts and their actual levels of understanding. As highlighted in the literature, within the financial literacy context, asymmetries often exist between confidence and ability, which then can influence levels of financial literacy. The study which sought to address this is detailed in the next section.

## 6. RESEARCH METHODOLOGY

In order to explore levels of confidence and knowledge in relation to taxation and superannuation, a survey was conducted wherein tax confidence and tax literacy scores for each survey participant were developed.

The survey was conducted via an online platform (Qualtrics) with web-link invitations sent to participants via email or advertised on radio and Facebook. The sample was derived through convenience or 'snowball' sampling until a desired number of responses was achieved. Convenience sampling occurs where there is not a systematic approach to recruiting participants and participants are not specifically chosen by the researcher because of some particular characteristic (Beidernikl & Kerschbaumer, 2007). Although this means that a specific response rate cannot be calculated (as a finite population has not been identified), a completion rate is able to be determined for those who began the survey. Although there is a potential for sample bias in non-probability sampling and an argument that online surveys will only be representative of the portion of the population that have access to the internet (Roberts, 2007), there is now work which argues that these limitations of internet usage are 'rapidly diminishing, particularly in western countries' (Roberts, 2007, p. 22).

The final version of the survey contained 65 questions including ten demographic questions (the complete survey is available on request). Apart from the initial demographic questions, the survey questions fell into one of three broad categories: confidence questions, knowledge questions and attitudinal questions. Note that the confidence questions were asked in the first part of the survey prior to specific tax knowledge questions to try to obtain the most accurate measure of participants' confidence. The first category contained questions about confidence in understanding the meaning of some tax and investment terms. The second category of knowledge questions incorporated theoretical and practical questions around basic concepts. The development of the questions used to deliver a tax literacy score (TLS) is reported elsewhere (Chardon, Freudenberg & Brimble, 2016). The overall results of the TLS are reported in Appendix 1.

### 6.1 Participants

Table 1 details the descriptive information of the survey sample. The sample demonstrates the survey to have a higher proportion of females (68.9 per cent) to males (31.1 per cent). To provide an idea of the representativeness of the data to the broader Australian community comparisons are made to Australian Bureau of

Statistics (ABS) data. The ABS data indicates that there are slightly more females than males in the adult population, the survey sample is higher again for females, than the population as a whole (ABS, 2012a). This higher proportion of females to males should be taken into account when interpreting the findings of the survey.

In terms of employment hours, Table 1 demonstrates 74.5 per cent of the sample size as either in full-time or part-time/casual work. While this appears to be a large portion of the sample, it is consistent with ABS statistics which show 88.4 per cent of persons aged 15 and over in either full-time or part-time work (ABS, 2012a).

Data was also collected on categories of income activities with the vast majority of participants (82.1 per cent) identifying as employees. The education level of participants was also gathered. As can be seen, 65.8 per cent of the sample have either under-graduate or post-graduate qualifications. ABS data reports that as of May 2012, the proportion of the adult population (aged 15 to 64 years) with a non-school qualification was 59 per cent (ABS, 2012b). While these results are quite close, it may be concluded that the sample is slightly biased toward the more educated. Based on other surveys of adult financial literacy both in Australia and overseas, this would tend to indicate that levels of tax literacy might be overstated in the final results (given that financial literacy tends to be lowest in those with lower general education levels).

**Table 1: Demographics of Participants**

| | | N | Percentage |
|---|---|---|---|
| Gender | Male | 188 | 31.1% |
| | Female | 416 | 68.9% |
| Age Bracket | 18–29 | 190 | 31.5% |
| | 30–44 | 231 | 38.2% |
| | 45–54 | 118 | 19.5% |
| | Over 55 | 65 | 10.8% |
| Employment Hours | Full-time paid work | 333 | 55.1% |
| | Part-time or Casual paid work | 117 | 19.4% |
| | Full-time student | 75 | 12.4% |
| | Full-time student working > 15 hours per week | 58 | 9.6% |
| | Other (including retired) | 21 | 3.5% |
| Employment Category | Working for an employer | 496 | 82.1% |
| | Self-employed/Contractor/Small business operator | 34 | 5.6% |
| | Other | 10 | 1.7% |
| | I am not in paid work | 64 | 10.6% |
| Education Level | Secondary (Year 10 or less) | 18 | 3% |
| | Secondary (to Year 12) | 89 | 14.7% |
| | Trade, Apprenticeship or other TAFE | 97 | 16.1% |
| | Undergraduate degree (Bachelor) | 164 | 27.2% |
| | Postgraduate degree (Masters, Doctorate, professional qualification) | 233 | 38.6% |
| | Other (coded system missing) | 3 | 0.5% |
| Total Income | $0–$20 000 | 113 | 18.7% |

| | | N | Percentage |
|---|---|---|---|
| | $20 000–$49 000 | 140 | 23.2% |
| | $50 000–$100 000 | 255 | 42.2% |
| | $100 000–$150 000 | 55 | 9.1% |
| | > $150 000 | 20 | 3.3% |
| | Prefer not to say (coded system missing) | 21 | 3.5% |
| Financial Experience | Yes | 112 | 18.5% |
| | No | 492 | 81.5% |

Note: This table demonstrates descriptive information for the variables that were used in the below statistical analysis. Some variables had more categories in the original survey, however due to low numbers in some categories some had to be recoded in order for valid analysis to occur.

The final piece of demographic information gathered was in relation to whether or not the participant had any previous financial experience. This was defined as the participant having worked as an accountant, financial planner, investment advisor or in the superannuation or finance fields. It can be seen that 18.5 per cent of survey participants identified as having previous financial experience. This means that the vast majority (81.5 per cent) of participants would be regarded as having no specific financial experience. This information was gathered for two reasons. First, evidence suggests that even some consumers with financial experience may have less than the required basic tax knowledge. Also, it was included in order to ensure there was not a sample bias towards those with financial knowledge or previous experience. It was decided that given the small numbers, this category would not be explored further in the analysis.

## 7. RESULTS

It is important to remember that although building confidence might be a goal of financial literacy, research has suggested that there is often a gap between people's self-assessed level of confidence and their actual skills or knowledge in particular financial areas (Financial Literacy Foundation, 2007). The following presents findings in relation to overall confidence scores. This is followed by an analysis of those specific tax and superannuation concepts where self-assessed confidence did not align with actual understanding.

### 7.1 Analysis of overall confidence scores

This section will highlight whether there are particular demographics that have particularly low or high confidence and whether or not there are any statistical relationships between particular demographics and confidence. To provide a sense of how representative this is to the broader Australian population comparisons are made with the national 2007 Financial Literacy Foundation research which focused on confidence in terms of particular financial concepts. Following this, confidence is compared to actual knowledge results. Finally, an analysis of the results which compare the overall Tax Literacy Score (TLS) and overall confidence is presented. The conclusions for this section focus on addressing whether there is a link between perceived confidence in understanding taxation-related concepts and actual levels of understanding.

Table 2 presents the overall summary of confidence scores by demographic. The table demonstrates the aggregate confidence scores for those questions in the survey that asked how confident participants were in understanding basic tax and superannuation concepts. Column 3 demonstrates the raw mean of all confidence questions (on a 5 point scale where 1 is 'very confident' and 5 is 'no idea') for each dependant variable. Thus participants whose mean confidence is closer to 1 are more confident and those whose mean confidence is closer to 5 are less confident. Columns 4 through 8 show the number and percentage of participants in the categories of overall confidence. It can be seen that the mean confidence of the sample was 2.43—somewhere between 'Slightly Confident' and 'Neutral'. It should be noted that for the purpose of this study, the Likert confidence scales outlined above have been analysed with both parametric and non-parametric tests. Acknowledging the contention between ordinalist and intervalist views in relation to Likert scales, it is submitted this mixed approach provides a richer analysis of the results.[4]

### *7.1.1 Gender*

Initial analysis as presented in Table 2 demonstrates that the mean confidence of 'males' is slightly higher (mean score 2.26) than that of females (mean score 2.51). Interestingly, of those who were categorised as either 'uncertain' or having 'no idea', only 29 per cent were 'male' compared with 19 per cent female. This finding is consistent with the literature which has found that overall, males are more confident in their abilities to understand financial concepts than females (Financial Literacy Foundation, 2007).

A Pearson chi-squared test[5] showed a relationship between overall confidence category and gender ($\chi^2$ (3, $N$ = 604) = 11.56, $p$ = .009). Further, the independent samples $t$-test conducted showed a significant relationship (at 1 per cent) males are more confident than females ($t$(602) = -2.994, $p$ = .003). This is consistent with the overall findings in relation to confidence in the Financial Literacy Foundation research which concluded that females were more confident in relation to everyday financial matters (such as budgeting and saving) but less confident in relation to more complex matters such as investing and retirement planning (Financial Literacy Foundation, 2008, p. 4).

In terms of overall tax literacy, it appears that this slightly higher confidence for males is also reflected in a higher understanding of the tax and superannuation issues because males have been found to have overall higher tax literacy than females (Chardon, Freudenberg & Brimble, 2016).

[4] It has been argued that it is 'perfectly appropriate to summarise the ratings generated from Likert scales using means and standard deviations, and it is perfectly appropriate to use parametric techniques like Analysis of Variance to analyse Likert scales' (Carifio & Perla, 2008, p.1151).

[5] Note that in this section, for the purpose of all chi-squared testing and cross tabulation analysis, the categories 'Uncertain' and 'No Idea' were grouped together to form one category.

**Table 2: Confidence Scores Aggregate**

| | | Raw Mean | Very Confident (1) | Slightly Confident (2) | Neutral (3) | Uncertain (4) | No Idea (5) | |
|---|---|---|---|---|---|---|---|---|
| Gender | Male | 2.26 | 56<br>29.8% | 66<br>35.1% | 40<br>21.3% | 26<br>13.8% | 0<br>0% | 100% |
| | Female | 2.51 | 82<br>19.7% | 136<br>32.7% | 134<br>32.2% | 57<br>13.7% | 7<br>1.6% | 100% |
| | | 2.43 | | | | | | 604 |
| Age Bracket | 18–29 | 2.71 | 37<br>19.5% | 45<br>23.7% | 60<br>31.6% | 45<br>23.7% | 3<br>1.6% | 100% |
| | 30–44 | 2.44 | 51<br>22.1% | 75<br>32.5% | 72<br>31.1% | 30<br>13% | 3<br>1.3% | 100% |
| | 45–54 | 2.25 | 28<br>23.7% | 50<br>42.4% | 33<br>27.9% | 6<br>5% | 1<br>0.8% | 100% |
| | Over 55 | 1.94 | 22<br>33.8% | 32<br>49.2% | 9<br>13.8% | 2<br>3% | 0<br>0% | 100% |
| | | 2.43 | | | | | | 604 |
| Employment Hours | Full-time paid work | 2.29 | 85<br>25.5% | 123<br>36.9% | 90<br>27% | 33<br>9.9% | 2<br>0.6% | 100% |
| | Part-time or Casual paid work | 2.40 | 29<br>24.8% | 38<br>32.5% | 36<br>30.8% | 13<br>11.1% | 1<br>0.9% | 100% |
| | Other (including retired) | 2.33 | 4<br>19% | 8<br>38.1% | 6<br>28.6% | 3<br>14.3% | 0<br>0% | 100% |
| | Full-time student | 2.92 | 12<br>16% | 12<br>16% | 27<br>36% | 23<br>30.7% | 1<br>1.3% | 100% |
| | Full-time student working > 15 hours per week | 2.76 | 8<br>13.8% | 21<br>36.2% | 15<br>25.9% | 11<br>19% | 3<br>5.2% | 100% |
| | | 2.43 | | | | | | 604 |
| Employment Category | Working for an employer | 2.42 | 111<br>22.3% | 175<br>35.2% | 142<br>28.6% | 62<br>12.5% | 6<br>1.2% | 100% |
| | Self-employed/Contractor/Small business operator | 1.90 | 15<br>44.1% | 11<br>32.3% | 6<br>17.6% | 2<br>5.9% | 0<br>0% | 100% |

| | | Raw Mean | Very Confident (1) | Slightly Confident (2) | Neutral (3) | Uncertain (4) | No Idea (5) | |
|---|---|---|---|---|---|---|---|---|
| | Other | 3.0 | 2<br>20% | 1<br>10% | 4<br>40% | 2<br>20% | 1<br>10% | 100% |
| | I am not in paid work | 2.75 | 10<br>15.6% | 15<br>23.4% | 22<br>34.3% | 17<br>26.6% | 0<br>0% | 100% |
| | | 2.43 | | | | | | 604 |
| Education Level | Secondary (Year 10 or less) | 2.50 | 2<br>11.1% | 9<br>50% | 4<br>22.2% | 3<br>16.7% | 0<br>0.0% | 100% |
| | Secondary (to Year 12) | 2.67 | 15<br>16.9% | 26<br>29.2% | 30<br>33.7% | 17<br>19.1% | 1<br>1.1% | 100% |
| | Trade, Apprenticeship or other TAFE | 2.50 | 20<br>20.6% | 32<br>33% | 29<br>29.9% | 15<br>15.5% | 1<br>1% | 100% |
| | Undergraduate degree (Bachelor) | 2.53 | 31<br>18.9% | 53<br>32.3% | 52<br>31.7% | 27<br>16.5% | 1<br>0.6% | 100% |
| | Postgraduate degree (Masters, Doctorate, professional qualification) | 2.26 | 70<br>30% | 79<br>33.9% | 59<br>25.3% | 21<br>9% | 4<br>1.7% | 100% |
| | | 2.43 | | | | | | 601 |
| Total Income | $0–$20 000 | 2.68 | 22<br>19.5% | 32<br>28.3% | 30<br>26.5% | 28<br>24.8% | 1<br>0.01% | 100% |
| | $20 000–$49 000 | 2.64 | 27<br>19.3% | 33<br>23.6% | 54<br>38.6% | 22<br>15.7% | 4<br>2.8% | 100% |
| | $50 000–$100 000 | 2.40 | 52<br>20.4% | 98<br>38.4% | 75<br>29.4% | 28<br>11% | 2<br>0.01% | 100% |
| | $100 000–$150 000 | 1.95 | 20<br>36.4% | 26<br>47.3% | 7<br>12.7% | 2<br>3.6% | 0<br>0% | 100% |
| | > $150 000 | 1.65 | 10<br>50% | 8<br>40% | 1<br>5% | 1<br>5% | 0<br>0% | 100% |
| | | 2.43 | | | | | | 583 |

Notes: Column 3 demonstrates the raw mean of all confidence questions (on a 5 point scale) for each dependant variable. Columns 4 through 8 show the number and percentage of participants in binned categories of overall confidence. Each participant's individual confidence score was binned according to the category closest to that score. For example, a participant with an overall score of 2.6 would be categorised as 'Neutral'. This means that participant numbers in each category will not compute to the actual raw mean.

### *7.1.2 Age*

From Table 2 it can also be seen that those participants in the '18–29' age category had the lowest overall confidence (mean score 2.71) and those in the 'Over 55' category had the highest overall confidence score (mean score 1.94). Overall, confidence in understanding tax and superannuation concepts gradually increases with age. This is partly in line with the Financial Literacy Foundation research which found that confidence in ability was lowest in the '18–29' age bracket (Financial Literacy Foundation, 2007). Further, in all confidence/ability questions posed in the Financial Literacy Foundation's research, confidence generally increased with age up until the '55–64' age bracket. In almost all questions, confidence was then slightly lower in the 'over 64' age bracket.

A Pearson chi-squared test showed a significant relationship between overall confidence category and age ($\chi^2$ (9, $N$ = 604) = 49.87, $p$ = .000). For mean confidence and the four age groups, the ANOVA[6] result ($F$(3,600) = 13.15, $p$ = .000) also showed a significant explanatory relationship (at 1 per cent) with confidence increasing with age. However, the result did not show homogeneity of variance ($p$ = .001) therefore analysis of the results should be read with some caution.

Table 3 demonstrates that the largest mean difference is between those in the 'Over 55' year's category and those in the '18-29' category. Here the mean difference is almost one full category (0.78100). The results also show that generally mean difference in confidence increases with age.

**Table 3: Confidence Score—Age (Comparison of Mean Variances)**

| | **18–29** | **30–44** | **45–54** | **Over 55** |
|---|---|---|---|---|
| 18–29 | | 0.27492** | 0.46072*** | 0.78100*** |
| 30–44 | -0.27492** | | 0.18580* | 0.50608*** |
| 45–54 | -0.46072*** | -0.18580* | | 0.32028** |
| Over 55 | -0.78100*** | -0.50608*** | -0.32028** | |

Notes: * = statistically significant at 10 per cent, ** = statistically significant at 5 per cent,
*** = statistically significant at 1 per cent where the test is a one-way ANOVA and the LSD results have been reported.

Therefore, it is argued that generally confidence in understanding tax and superannuation issues is likely to increase as age increases and is likely to be lowest in those aged '18–29' years. This result is in line with the Finance Literacy Foundation research which also found that confidence in financial matters was lowest in those aged '18–29'.

### *7.1.3 Employment hours*

From the summary in Table 2 it can be seen that the category with the lowest overall confidence was 'Full-time students' (mean score 2.92). Those with the highest overall

[6] Here, the test is a one-way ANOVA where the LSD results have been reported in each of the tables of comparison of mean variance.

confidence were those in 'Full-time paid work' (mean score 2.29) with respondents in either 'Full-time paid work' or 'Part-time/Casual paid work' more confident than both 'Full-time student' categories. These results are interesting because they appear to indicate that confidence in understanding basic tax and superannuation issues does not begin to increase until there is some exposure to paid work. This provides some support for the argument that people must deal with a complex system for the first time when they commence paid work despite having little basic tax or superannuation skills taught in the primary and secondary education systems (Chardon, Freudenberg & Brimble, 2016). Unfortunately, the Financial Literacy Foundation research referred to earlier did not separately explore their results by employment hours. This can be contrasted to the Ali et al. findings that did not find a significant difference for high school students in relation to their financial literacy (as opposed to tax literacy) and whether or not the student had part-time work (Ali et al., 2014).

A Pearson chi-squared test showed a relationship between overall confidence category and employment hours (significant at 1 per cent) ($\chi^2$ (2, $N$ = 604) = 38.40, $p$ = .000). This relationship is supported through the ANOVA result ($F$(4,599) = 8.57, $p$ = .000). Table 4 demonstrates there is a significant difference in mean confidence between those in 'Full-time paid work', 'Part-time/Casual paid work' and both categories of 'Full-time student' (working and non-working). The largest (and most significant) difference is between 'Full-time students' and those in 'Full-time paid work'. However, those in 'Part-time/Casual paid work' are still likely to be more confident. While comparative data in the Financial Literacy Foundation survey cannot be used here, it is worth noting that these results are in line with the earlier results in relation to overall TLS where it was found that those in 'Full-time paid work' were more likely to have a higher TLS than those 'Full-time students' (Chardon, Freudenberg & Brimble, 2016).

**Table 4: Confidence Score—Employment Hours (Comparison of Mean Variances)**

| | **Full-time paid work** | **Part-time or Casual** | **Other (including retired)** | **Full-time student** | **Full-time student working > 15 hours per week** |
|---|---|---|---|---|---|
| Full-time paid work | | -0.11329 | -0.04247 | -0.62723*** | -0.46653*** |
| Part-time or Casual | 0.11329 | | 0.07082 | -0.51394*** | -0.35324** |
| Other (including retired) | 0.04247 | -0.07082 | | -0.58476** | -0.42406* |
| Full-time student | 0.62723*** | 0.51394*** | 0.58476** | | 0.16071 |
| Full-time student working > 15 hours per week | 0.46653*** | 0.35324** | 0.42406* | -0.16071 | |

Notes: * = statistically significant at 10 per cent, ** = statistically significant at 5 per cent,
*** = statistically significant at 1 per cent where the test is a one-way ANOVA and the LSD results have been reported.

### *7.1.4 Employment category*

From Table 2 it can be seen that those 'Not in paid work' and in the 'Other' categories had the lowest overall confidence (mean scores 2.75 and 3.0 respectively). Those who identified as 'Self-employed' were the most confident (mean score 1.9) followed by those who identified as 'Working for an employer' (mean score 2.42). Interestingly nearly half (42.3 per cent) of those who were 'Working for an employer' scored in the categories 'Neutral', 'Uncertain' or 'No idea' confidence categories.

A Pearson chi-squared test showed a significant relationship between overall confidence category and employment category ($\chi^2$ (19, $N$ = 604) = 24.65, $p$ = .003). Therefore, while there is a relationship between employment category and confidence category, this is less significant than it was for employment hours where $p$ = .003.

In relation to overall mean confidence, this relationship (significant at 1 per cent) is supported through the ANOVA result ($F$(3,600) = 7.19, $p$ = .000). Table 5 presents the mean differences between employment categories and confidence and their statistical significance. The results show the largest mean difference is between those in the 'Self-employed' category and those in the 'Other' and 'Not in paid work' categories. Table 5 also demonstrates a relationship between those 'Not in paid work' and those 'Working for an employer', although the mean difference here is less than it was when compared to the 'Self-employed' category. This may indicate that it is not just being self-employed that is likely to lead to increased confidence. Instead it is the connection (in some form) to the paid working environment that is likely to lead to increased confidence. While comparison to the Financial Literacy Foundation research of confidence in overall financial matters is not possible, these results in relation to confidence in tax and superannuation appear to be in line with the results of overall tax literacy where it was found that those 'Working for an employer' or 'Self-employed' were more likely to have a higher TLS (Chardon, Freudenberg & Brimble, 2016).

**Table 5: Confidence Score—Employment Category (Comparison of Mean Variances)**

| | **Working for an employer** | **Self-employed/Contractor/Small business operator** | **Other** | **I am not in paid work** |
|---|---|---|---|---|
| Working for an employer | | -0.52192** | -0.57892* | -0.33673** |
| Self-employed/Contractor/Small business operator | 0.52192** | | -1.10084*** | -0.85865*** |
| Other | 0.57892* | 1.10084*** | | 0.24219 |
| I am not in paid work | 0.33673** | 0.85865*** | -0.24219 | |

Notes: * = statistically significant at 10 per cent, ** = statistically significant at 5 per cent,
*** = statistically significant at 1 per cent where the test is a one-way ANOVA and the LSD results have been reported.

### *7.1.5 Education*

From Table 2 it can be seen that those with 'Postgraduate' education had the highest overall confidence (mean score 2.26). Those with 'Secondary (to Year 12)' as their highest level of education had the lowest overall confidence (mean score 2.67). Apart from those with 'Secondary (Year 10 or less)' having marginally higher levels of confidence than those with 'Secondary (to Year 12)', the other results are consistent with the financial literacy research which suggests that those with lower levels of education are more likely to have lower levels of financial literacy.

A Pearson chi-squared test reported less significance difference than was found in all other demographics ($\chi^2$ (12, $N$ = 601) = 18.69, $p$ = .096). In relation to the mean confidence, a relationship was found and is supported through the ANOVA result ($F$(4,596) = 3.77, $p$ = .005). Table 6 demonstrates the largest and most significant mean difference was between those with 'Postgraduate' education and those with 'Secondary (to Year 12)' education. The Financial Literacy Foundation research into financial literacy confidence did not report findings in relation to education, so no comparison is possible. However, it should be noted that a significant relationship was not found between those with 'Postgraduate' education and those with 'Secondary (Year 10 or less)', this may have been due to lower numbers in the 'Secondary (Year 10 or less)' category.

**Table 6: Confidence Score—Education (Comparison of Mean Variances)**

| | **Secondary (Year 10 or less)** | **Secondary (to Year 12)** | **Trade, Apprenticeship or other TAFE** | **Undergraduate degree (Bachelor)** | **Postgraduate degree (Masters, Doctorate, professional qualification)** |
|---|---|---|---|---|---|
| Secondary (Year 10 or less) | | -0.16618 | 0.00618 | -0.02652 | 0.24370 |
| Secondary (to Year 12) | 0.16618 | | 0.17235 | 0.13966 | 0.40987*** |
| Trade, Apprenticeship or other TAFE | -0.00618 | -0.17235 | | -0.03270 | 0.23752** |
| Undergraduate degree (Bachelor) | 0.02652 | -0.13966 | 0.03270 | | 0.27022** |
| Postgraduate degree (Masters, Doctorate, professional qualification) | -0.24370 | -0.40987*** | -0.23752** | -0.27022** | |

Notes:
* = statistically significant at 10 per cent, ** = statistically significant at 5 per cent,
*** = statistically significant at 1 per cent where the test is a one-way ANOVA and the LSD results have been reported.

### *7.1.6 Income*

Table 2 demonstrates that generally confidence in tax and superannuation concepts increases as total income increases. Those with the lowest overall confidence were in the '$0–$20°000' category (mean score 2.68). This is in line with the Financial Literacy Foundation research which reported that in almost all categories tested, confidence increased as income increased (Financial Literacy Foundation, 2007, pp. 77–83). A Pearson chi-squared test demonstrates a relationship between overall confidence category and total income category ($\chi^2$ (12, $N$ = 583) = 54.49, $p$ = .000). The ANOVA result did not show homogeneity of variance ($p$ = .001*)* therefore analysis of the results following should be read with caution. Notwithstanding this, the ANOVA result was $F(4,578) = 10.92$, $p = .000$.

Table 7 demonstrates the relationship is largest and strongly significant when comparing those with incomes in the category '$0–$20 000' and those in the 'greater than $150 000' category.

**Table 7: Confidence Score—Total Income (Comparison of Mean Variances)**

| | **$0–$20 000** | **$20 000–$49 000** | **$50 000–$100 000** | **$100 000–$150 000** | **> $150 000** |
|---|---|---|---|---|---|
| $0–$20 000 | | 0.04403 | 0.28135** | 0.73656*** | 1.03688*** |
| $20 000–$49 000 | -0.04403 | | 0.23732** | 0.69253*** | 0.99286*** |
| $50 000–$100 000 | -0.28135** | -0.23732** | | 0.45521** | 0.75553** |
| $100 000–$150 000 | -0.73656** | -0.69253*** | -0.45521** | | 0.30332 |
| > $150 000 | -1.03688*** | -0.99286*** | -0.75553** | -0.30032 | |

Notes: * = statistically significant at 10 per cent, ** = statistically significant at 5 per cent,
*** = statistically significant at 1 per cent where the test is a one-way ANOVA and the LSD results have been reported.

### *7.1.7 Conclusions in relation to overall confidence*

The preceding section presented the findings and statistical analysis of the survey results in relation to overall confidence in tax and superannuation issues. Broadly, the findings were consistent with the Financial Literacy Foundation research, which found that lower confidence is more likely to be found in females, younger age groups and those on lower incomes. This survey also found that lower confidence in relation to taxation and superannuation issues is likely to be found in those with less participation in the paid workforce (that is, 'Full-time students' or those 'Not in paid work') and those with lower education levels.

The following section explores the survey findings in relation to confidence in specific areas of taxation and superannuation and whether or not confidence was reflected in actual understanding for those specific concepts.

### *7.1.8 Confidence versus actual understandings of specific questions*

Table 8 presents comparisons of confidence scores for specific questions and the percentage of correct responses for the corresponding knowledge question. Only those questions where there was a specific correlating confidence question have been reported. It can be seen that there was a disparity between confidence and actual scores in relation to taxable income. Here overall confidence in relation to 'Understanding the meaning of taxable income' was relatively high (1.49 is between 'Very confident' and 'Confident'). However, for both related knowledge questions, the percentage score correct was around 50 per cent. This indicates there is some disparity between confidence and actual understanding in relation to taxable income.

Conversely, the table demonstrates that confidence in 'Understanding the meaning of marginal rates of tax' was relatively low (2.70 being close to 'Neutral'), yet the understandings for the corresponding knowledge questions were well above 50 per cent. This may indicate that participants perceive marginal tax rates to be a more complex area and therefore assessed confidence as lower than for taxable income.

It can also be seen that confidence in 'Understanding the meaning of deductions' was relatively high (1.82 being close to 'Confident'), however there were some particularly low scores in relation to applying the effect of deductions and classifying particular items of expense as either deductible or non-deductible. For example, participants performed quite poorly (43.5 per cent correct) when asked to calculate the actual cost of a deductible item after taking into account the tax saving.

In relation to understanding tax offsets, a low mean confidence (2.75) results for the question, 'Confidence in understanding the meaning of offsets'. This translated to a poor result in the knowledge question. Participants were asked to identify the actual dollar effect of claiming a tax offset (that is, the fact that an offset is a dollar for dollar amount rather than a reduction of taxable income). The correct response rate was only 45.4 per cent.

## Table 8: Confidence Compared to Actual Understanding of Taxation Concepts

| | Confidence mean (1) Very confident (5) No idea | Number correct % total participants | Number not answered |
|---|---|---|---|
| Confidence in understanding the meaning of taxable income | 1.49 | | |
| Applying the meaning of taxable income | | 316<br>52.3% | 0 |
| Calculating taxable income | | 302<br>50%* | 0 |
| Confidence in understanding the meaning of assessable income | 2.30 | | |
| Calculating assessable income | | 321<br>53.1% | 0 |
| Confidence in understanding the meaning of marginal rates of tax | 2.70 | | |
| Calculating tax payable using marginal rates of tax | | 432<br>71.5% | 19 n/a |
| Applying marginal tax rates to an extra $1 of income | | 448<br>74.2% | 19 n/a |
| Confidence in understanding the meaning of deductions | 1.82 | | |
| Applying the effect of deductions | | 263<br>43.5%* | 29 n/a |
| Determine deductibility of transaction | | | |
| Travel – home—work | | 474<br>78.5% | 50 n/a |
| Travel – separate places employment | | 302<br>50%* | 50 n/a |
| Clothing – retail worker | | 153<br>25.3%* | 50 n/a |
| Clothing – corporate uniform | | 498<br>82.5% | 50 n/a |
| Lunch – whilst at work | | 534<br>88.4% | 50 n/a |
| Lunch – at offsite meeting | | 175<br>29%* | 50 n/a |
| Newspaper – owns minimum shares | | Y 220 36.4%<br>N 199 32.9% | 50 n/a |
| Interest – loan on investment property | | 394<br>65.2% | 50 n/a |
| Medical expenses out of pocket | | 256<br>42.4%* | 50 n/a |
| Confidence in understanding the meaning of offsets | 2.75 | | |
| Applying the effect of offsets | | 274<br>45.4%* | 29 n/a |
| Classify spouse rebate – offset/deduction | | 342<br>56.6% | 33 n/a |
| Classify rental interest – offset/deduction | | 315<br>52.2% | 33 n/a |

| | Confidence mean (1) Very confident (5) No idea | Number correct % total participants | Number not answered |
|---|---|---|---|
| Classify super co-contribution – offset/deduction | | 138<br>22.8%* | 33 n/a |
| Classify work clothing – offset/deduction | | 500<br>82.8% | 33 n/a |
| Classify education tax refund – offset/deduction | | 190<br>31.5%* | 33 n/a |
| Classify travel expenses – offset/deduction | | 474<br>78.5% | 33 n/a |
| Confidence in understanding the meaning of Medicare levy | 2.00 | | |
| Understanding the rate of Medicare levy | | 281<br>46.5%* | 62 n/a |
| Understanding how the Medicare levy is calculated | | 282<br>46.7%* | 62 n/a |
| Confidence in understanding which medical tax offsets I am entitled to | 3.12 | | |
| Awareness of ability to claim medical tax offsets | | 319<br>52.8% | 62 n/a |
| Understanding the threshold for medical tax offset | | 147<br>24.3%* | 285 n/a*** |

Notes:
This table compares confidence in understanding particular taxation concepts against actual scores for knowledge questions.
Column 2 demonstrates the mean confidence score for the corresponding question described in Column 1.
Columns 3 and 4 demonstrate the number and percentage of correct responses for each of the questions that counted toward the overall tax literacy score as well as the number of participants that did not answer that question.
* Number of Correct Responses < 50%
** Two marks available for this question
***Flow-on question; some participants not asked

In relation to the Medicare levy, 'Confidence in understanding the meaning of Medicare levy' was relatively high (mean of 2.0 is 'Confident'). However, this translated to only 46.5 per cent of participants correctly identifying the rate of the Medicare levy as 1.5 per cent. This is interesting given that the rate of Medicare levy had largely remained unchanged for eighteen years at the time of the survey.

The literature identified that when there are disparities between confidence and knowledge or when there are particularly low levels of confidence, this can lead to poor financial decisions, lower propensity to plan ahead and less likelihood to seek advice. Here, the results indicate there may be disparities between confidence and knowledge in relation to taxable income, marginal rates of tax, deductions and the Medicare levy. Also, there may be concerns about the level of understanding and confidence in relation to tax offsets. Here, the results demonstrated generally both low confidence and low knowledge.

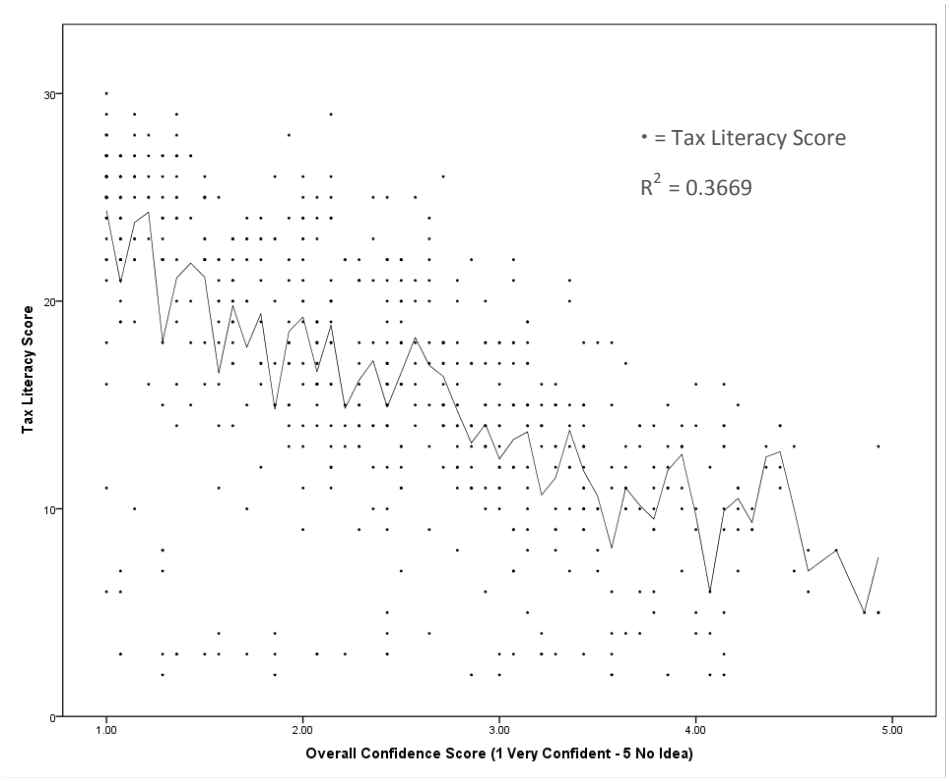
### *7.1.9 Analysis of overall confidence versus overall tax literacy*

The following section presents data which compares overall confidence and overall tax literacy in order to determine whether there is evidence of a link between confidence and actual understanding.

Figure 1 presents overall TLS as it relates to overall confidence. The regression results showed a significant linear relationship between TLS and overall confidence: ($F(1, 602) = 348.74$, $p < .001$) with $r^2 = .366$. Thus, approximately 36 per cent of the variance in TLS can be explained through knowing a participants' overall confidence. Broadly, it can be seen that as confidence decreases (towards 5), TLS also decreases. This finding is important because it supports assertions made in other financial literacy research which state that increasing confidence in financial matters may have an impact on a person's overall financial literacy. These results indicate that in the context of tax and superannuation, increasing confidence is likely to be related to the knowledge and understanding components of financial literacy.

From Figure 1 it can also be seen that there are very few instances where a participant scored highly in terms of their TLS, but had lower confidence. There were a very small number of participants who had very high confidence (between 1 and 2) and lower TLS. These two findings are unusual and suggest that over-confidence is not common in relation to tax and superannuation issues. This is quite in contrast to previous research where it has generally been found that over-confidence particularly in relation to basic financial concepts and some investment decisions is quite prevalent (Bateman et al., 2012; Financial Literacy Foundation, 2007; Gallery & Gallery, 2010; Gallery et al., 2011). There has been some suggestion in previous research that there may be more over-confidence in advanced investment decision making (Gallery et al., 2011), although as has been stated previously there is no prior research specifically in relation to tax to which these findings can be compared.

**Figure 1: Tax Literacy Score and Overall Confidence Scatterplot**



In order to explore this relationship between confidence and TLS further, participants were categorised as being either over-confident or under-confident and further analysis by demographic was performed. This over-confidence or under-confidence was determined with reference to each participant's TLS as a percentage of the 31 tax questions asked in comparison to their overall confidence score as a percentage of the five confidence questions asked. It can be seen in Table 9 that in general, a larger percentage of participants were under-confident (60.4 per cent). That is, a larger percentage of participants had a higher TLS percentage when compared to their confidence percentage. Interestingly, it appears that males were slightly less over-confident than females, although further analysis did not find a statistical relationship here. For age, we can see there was some over-confidence in the two older age brackets when compared to the total over-confidence percentage of 39.6 per cent. This is an interesting finding, which is supported by the Pearson chi-squared result of: $\chi^2$ (3, $N$ = 604) = 14.33, $p$ = .000, revealing a significant relationship between under/over-confidence and age.

**Table 9: Over-confidence and Under-confidence By Demographic**

| | | Total | Over-confident | Under-confident | |
|---|---|---|---|---|---|
| Gender | Male | 188 | 72<br>38.3% | 116<br>61.7% | 100% |
| | Female | 416 | 167<br>40.1% | 249<br>59.8% | 100% |
| | | | 239<br>39.6% | 365<br>60.4% | 604 |
| Age bracket** | 18–29 | 190 | 67<br>35.3% | 123<br>64.7% | 100% |
| | 30–44 | 231 | 79<br>34.2% | 152<br>65.8% | 100% |
| | 45–54 | 118 | 58<br>49.2% | 60<br>50.8% | 100% |
| | Over 55 | 65 | 35<br>53.8% | 30<br>46.2% | 100% |
| | | | 239<br>39.6% | 365<br>60.4% | 604 |
| Employment hours | Full-time paid work | 333 | 127<br>38.1% | 206<br>61.9% | 100% |
| | Part-time or Casual paid work | 117 | 47<br>40.2% | 70<br>59.8% | 100% |
| | Other (including retired) | 21 | 9<br>42.9% | 12<br>57.1% | 100% |
| | Full-time student | 75 | 29<br>38.7% | 46<br>61.3% | 100% |
| | Full-time student working > 15 hours per week | 58 | 27<br>46.6% | 31<br>53.4% | 100% |
| | | | 239<br>39.6% | 365<br>60.4% | 604 |
| Employment category | Working for an employer | 496 | 197<br>39.7% | 299<br>60.3% | 100% |
| | Self-employed/Contractor/Small business operator | 34 | 14<br>41.2% | 20<br>58.8% | 100% |

| | | Total | Over-confident | Under-confident | |
|---|---|---|---|---|---|
| | Other | 10 | 3<br>30% | 7<br>70% | 100% |
| | I am not in paid work | 64 | 25<br>39.1% | 39<br>60.9% | 100% |
| | | | 239<br>39.6% | 365<br>60.4% | 604 |
| Education level | Secondary (Year 10 or less) | 18 | 9<br>50% | 9<br>50% | 100% |
| | Secondary (to Year 12) | 89 | 36<br>40.4% | 53<br>59.6% | 100% |
| | Trade, Apprenticeship or other TAFE | 97 | 40<br>41.2% | 57<br>58.8% | 100% |
| | Undergraduate degree (Bachelor) | 164 | 60<br>36.6% | 104<br>63.4% | 100% |
| | Postgraduate degree (Masters, Doctorate, professional qualification) | 233 | 91<br>39.1% | 142<br>60.9% | 100% |
| | | | 239<br>39.6% | 365<br>60.4% | 604 |
| Total income | $0–$20 000 | 113 | 43<br>38.1% | 70<br>61.9% | 100% |
| | $20 000–$49 000 | 140 | 58<br>41.4% | 82<br>58.6% | 100% |
| | $50 000–$100 000 | 255 | 104<br>40.8% | 151<br>59.2% | 100% |
| | $100 000–$150 000 | 55 | 21<br>38.2% | 34<br>61.8% | 100% |
| | > $150 000 | 20 | 5<br>25% | 15<br>75% | 100% |
| | | | 239<br>39.6% | 365<br>60.4% | 604 |

Notes:
* = statistically significant at 10 per cent, ** = statistically significant at 5 per cent,
*** = statistically significant at 1 per cent where the test is a Pearson chi-squared.

In relation to 'Employment hours' category, the 'Full-time students working > 15 hours per week' were more over-confident (46.6 per cent) than the overall levels (39.6 per cent). In relation to education, those in the 'Secondary (Year 10 or less)' category were more over-confident (50 per cent) than the overall levels (39.6 per cent). For income, those in the '> $150 000' category were less over-confident (25 per cent) than the overall levels (39.6 per cent). The earlier results found that there was a correlation with both overall TLS and confidence particularly in relation to connection to work, education and income. Reading those results with these results in relation to over-confidence, it may be argued that where there is increased connection with work, increased education and increased income, confidence in tax and superannuation is less likely to be overstated. This may be due to an awareness of tax and superannuation being more complex than other financial concepts for these demographics. Another (or part of the) reason could also be that people are aware of

the penalties for incorrect reporting of tax matters, and therefore are more cognitive of their actual knowledge.

### 7.2 Overall findings

The literature identifies that confidence in understanding financial issues is an important aspect of financial literacy and that there is often a gap between confidence and actual understanding. Furthermore, the literature indicated that improving confidence had the potential to improve financial literacy as well as ensuring people were more likely to plan ahead, avoid poor financial decisions and seek appropriate advice.

The survey measured self-assessed confidence in understanding a range of tax and superannuation issues, which aligned with knowledge questions posed. Firstly, in relation to overall confidence in general, the findings were that lower confidence in tax and superannuation issues is more likely to be found in females, younger age groups and those on lower incomes. These findings were consistent with the Financial Literacy Foundation research in relation to financial confidence. However, we find additional evidence that lower confidence in relation to taxation and superannuation issues is likely to be found in those with less participation in the paid workforce (such as full-time students or those not in paid work) and those with lower education levels. This can be compared to the Ali et al. (2014) findings that did not find a significant difference for high school students in relation to their financial literacy (as opposed to tax literacy) and whether or not the student had part-time work.

Secondly, in relation to whether there was a link between confidence and overall tax literacy score, the results showed a statistical relationship between participants' overall TLS and confidence. Generally, participants were largely under-confident and there were almost no instances of low self-assessed confidence and high TLS. It is suggested that this finding may be explained by the fact that tax issues are different to other financial matters because there is the potential for penalties to apply if tax matters are overlooked or are incorrect, whereas the consequences in other financial areas may not be seen as severe (or seen as 'penalties'). In this way the deterrent effect of penalties for incorrect reporting of tax matters may lead to greater alignment between tax literacy and tax confidence. The results also demonstrated that there were relationships with overall self-assessed confidence in relation to all demographics, but particularly in relation to age, employment hours and income. In relation to links between confidence and understanding for particular concepts, it was found that there were disparities for particular concepts including: taxable income, deductions, offsets and Medicare levy.

## 8. RECOMMENDATIONS

Prior literature suggests that building confidence in relation to financial matters can influence the degree to which people seek assistance with financial decisions, make better financial decisions and overcome attitudes or beliefs that prevent proactive steps being taken (Financial Literacy Foundation, 2007; Lusardi & Mitchell, 2006). Based on this and the findings of this research we make four recommendations. Firstly, it is recommended that those designing, implementing and evaluating financial literacy education programs recognise that confidence is generally lower in relation to tax and superannuation issues compared to other areas of financial literacy. This means that

programs should use appropriate instruction design methodologies to build confidence and motivation to act as well as provide knowledge/literacy. For example, in Canada the St Christopher House in Toronto provides assistance in the preparation of tax returns for clients as part of its financial problem solving (Government of Canada, 2006, p. 15). Also, it appears that there is no substitute for hands-on experience in terms of learning how to manage one's finances, including tax obligations.

Second, we suggest that financial literacy education should be tailored rather than generic, with specific programs targeted to those with low confidence, especially youth, women and those entering the workforce for the first time. These programs may be designed by government agencies, financial service and tax advice agencies, revenue authorities or not-for-profit agencies.

Extending this idea, we also suggest that employers consider developing tax literacy as part of the induction processes for new staff and particularly those employees who are young/new employees and those returning to work after a period of absence.

Finally, we suggest that professional advisers (tax agents, accountants and financial planners) utilise their expertise to enhance the confidence and knowledge of clients as a part of the professional client relationship (in other words empower them). Indeed, we would extend this to suggest such professionals may have the capacity to participate in community education programs as part of their broader professional service to the community. This is especially the case if there is a link between improved literacy and compliance behaviour (Mihaylov et al., 2015, p. 754).

If these recommendations are implemented and disparities between confidence and actual understandings are decreased, this may increase the degree to which people seek out assistance with financial decisions, make better financial decisions and overcome attitudes or beliefs that prevent proactive steps being taken. Furthermore, we believe that these findings could be used by professional bodies (particularly accounting, tax and financial planning entities) in providing relevant information to their members regarding the likelihood of under and over-confidence in relation to specific tax and superannuation issues (such as taxable income, deductions, offsets, Medicare levy and superannuation). Given the literature suggests there may be a decreased likelihood of seeking advice where there are disparities in confidence and actual understandings, these results could provide important opportunities for advice providers to value add to the services provided and/or identify new areas to provide client education.

## 9. LIMITATIONS AND FUTURE RESEARCH

The study has a number of limitations that should be considered when evaluating the findings of the research. The conclusions drawn from the survey conducted are limited by the sample size and the characteristics of those participants in the survey. Also, it is not certain to what extent these Australian findings could be generalised to other jurisdictions. Further research in other jurisdictions could analyse tax literacy and tax confidence as part of the financial capability model.

The findings appear to support the argument that there appears to be a link between confidence and improved financial (or tax) literacy. Consequently, further research could explore and/or measure the impact of improved confidence on financial (or tax)

literacy (or vice-a-versa). It also provides the opportunity for future research to test methods for increasing confidence and the extent to which this leads to increased confidence and subsequently increased wealth.

Future research could also investigate the relationship between age, tax literacy and confidence. Also, future research could explore why those with lower educational levels appear to be 'over-confident' when it comes to their tax literacy. Another research project in the future, could consider to what extent advisors assist or see value in increased tax literacy and tax confidence of their clients. This could include the notions of 'empowerment' with professional relationships (Hunt, Brimble & Freudenberg, 2011).

Further research could consider the notion of how low tax literacy could result in 'financial exclusion', particularly in terms of the lack of access to government benefits and services that are increasingly being delivered through the tax system.

Research could be conducted to consider the tax literacy and confidence of small and medium enterprise owners, as it appears that they have unique characteristics compared to the population in general. Future research could explore whether higher levels of tax literacy are associated with more tax compliant as compared to tax non-compliant behaviour. Also, research could explore the deterrent effect of penalties for incorrect tax reporting with the alignment between tax literacy and tax confidence.

## 10. CONCLUSION

In an increasingly complex world, the need for improved financial literacy has been advocated by governments around the world. This financial literacy extends beyond just knowing how to do calculations, but is now seen as including financial capability which includes notions of confidence and ability to put knowledge into action. Also, given the way that the tax system can influence investment returns, it has been argued that financial literacy needs to include aspects of tax and retirement savings. This is particularly important given governments are using the tax system to encourage certain behaviours, especially retirement funding, and that tax can influence investment returns.

This article reviewed the literature in terms of financial literacy, and its relationship with financial capability and tax literacy. The importance of confidence as part of financial capability and the tax system was also considered. It was argued that it is important to understand peoples' confidence and how it relates to their tax literacy.

We reported on measures of Australians' confidence in terms of tax, and compared this to their tax literacy. The study revealed lower tax confidence was more likely to be found in females, younger age groups and those on lower incomes. This survey also found that lower confidence in relation to taxation and superannuation issues was likely to be found in those with less participation in the paid workforce (that is, 'Full-time students' or those 'Not in paid work') and those with lower education levels.

It was also found that in terms of the relationship between tax confidence and tax literacy that, unlike other financial literacy indicators, generally there is a lack of 'over-confidence' when it comes to tax literacy.

Given the growing prominence of confidence as part of a more comprehensive understanding of financial capability, the findings of this study suggest that Australians are largely under-confident in estimating their tax literacy. However, it is important that Australians become more tax confident and tax literate, as this should aid them in making better and more accurate financial decisions, be more likely to plan ahead and seek advice when needed. Such improved decision making has the potential to have positive impacts for themselves, and the economy as a whole. As it has been stated, 'without financial understanding, knowledge, and confidence, individuals may be at risk of financial exclusion' (Government of Canada, 2006, p. 6), and this 'financial exclusion' includes the lack of access to government benefits and services that are increasingly being delivered through the tax system. It is argued that confidence towards the tax system is an important part of a person's overall financial capability.

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## 12. APPENDIX 1

### Table 10: Tax Literacy Survey Correct Response Rates By Question

| Question | Number correct | % Total participants | Number not answered |
|---|---|---|---|
| Calculating taxable income | 302 | 50%* | 0 |
| Calculating assessable income. | 321 | 53.1% | 0 |
| Calculating tax payable using marginal rates of tax | 432 | 71.5% | 19 n/a |
| Applying marginal tax rates to an extra $1 of income | 448 | 74.2% | 19 n/a |
| Applying the effect of deductions | 263 | 43.5%* | 29 n/a |
| Determine deductibility of transaction | | | |
| Travel home–work | 474 | 78.5% | 50 n/a |
| Travel – separate places employment | 302 | 50%* | 50 n/a |
| Clothing – retail worker | 153 | 25.3%* | 50 n/a |
| Clothing – corporate uniform | 498 | 82.5% | 50 n/a |
| Lunch – whilst at work | 534 | 88.4% | 50 n/a |
| Lunch – at offsite meeting | 175 | 29%* | 50 n/a |
| Newspaper – owns minimum shares | Y 220<br>N 199 | 36.4%<br>32.9% | 50 n/a |
| Interest – loan on investment property | 39 | 65.2% | 50 n/a |
| Medical expenses out of pocket | 256 | 42.4%* | 50 n/a |
| Applying the effect of offsets | 274 | 45.4%* | 29 n/a |
| Classify spouse rebate – offset/deduction | 342 | 56.6% | 33 n/a |
| Classify rental interest – offset/deduction | 315 | 52.2% | 33 n/a |
| Classify super co-contribution – offset/deduction | 138 | 22.8%* | 33 n/a |
| Classify work clothing – offset/deduction | 500 | 82.8% | 33 n/a |
| Classify education tax refund – offset/deduction | 190 | 31.5%* | 33 n/a |
| Classify travel expenses – offset/deduction | 474 | 78.5% | 33 n/a |
| Knowledge of current rate of compulsory employer superannuation | 344 | 57% | 62 n/a |
| Awareness of superannuation being taxed at a lower rate than other investments | 346 | 57.3% | 62 n/a |
| Understanding tax on capital gains (taxed at marginal rates with 50% discount sometimes applying)** | 169<br>tax rate<br>160<br>50% discount | 28% *<br>26.5%* | 61 n/a |
| Understanding the meaning of negative gearing | 327 | 54.1% | 61 n/a |
| Understanding the rate of Medicare levy | 281 | 46.5%* | 62 n/a |
| Understanding how the Medicare levy is calculated | 282 | 46.7%* | 62 n/a |
| Awareness of ability to claim medical tax offsets | 319 | 52.8% | 62 n/a |
| Understanding the threshold for medical tax offset | 147 | 24.3%* | 285 n/a*** |

Notes: This table shows the number and percentage of correct responses for each of the questions that counted toward the overall tax literacy score. The total number of questions counted toward the score was 31.
* Number of Correct Responses < 50 per cent.
** Two marks available for this question.
*** Flow-on question, so some participants not asked.