The financial literacy of young Australians: An empirical study and implications for consumer protection and ASIC's National Financial Literacy Strategy

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The Australian Securities and Investments Commission (ASIC) has stewarded the Australian National Financial Literacy Strategy since 2011. Financial literacy is increasingly recognised as an essential part of consumer protection, complementing traditional consumer protection mechanisms such as disclosure. Increased financial literacy has significant benefits including the potential to reduce the need for regulatory intervention and enhance economic participation. While much attention has focussed upon the financial literacy of adults, young people are active consumers and it has been suggested that their levels of financial literacy are not consistent with their extensive consumer activities. Currently a research gap exists regarding the financial literacy levels and attitudinal/behavioural aspects of young people's financial decision-making. This article discusses the results of a financial literacy survey of senior students in Australian secondary schools. The survey tested six key areas of financial literacy skills, including their knowledge of consumer rights. The analyses tested for demographic factors and attitudes that are related to financial literacy. The study contributes important findings that can assist ASIC's ongoing work promoting consumer protection through financial literacy policies and can also assist in the development of financial literacy education programs in schools.

INTRODUCTION

There is increasing recognition of the importance of financial literacy to consumer protection in Australia and internationally. The growth in both the range and complexity of financial products and services requires individuals to have sufficient financial literacy to make sound investment decisions and to understand their consumer rights and identify when these have been infringed. Financially literate consumers are more likely to be informed and confident and therefore better able to participate in economic life. Financial literacy is one of four key factors, along with sufficient income, access to suitable and affordable financial products and appropriate regulation, identified as necessary for individuals to achieve positive financial outcomes and secure financial wellbeing.[1] The Australian Securities and Investments Commission (ASIC), at the request of the Australian Government, developed, and is implementing, the Australian National Financial Literacy Strategy (National Strategy).[2] At the international level, the Organisation for Economic Co-operation and Development (OECD) has led the push to increase consumer protection by raising levels of financial literacy.[3] At

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[1] ASIC, *Review of the National Financial Literacy Strategy: Background Report*, Report 339 (April 2013) p 9.

[2] ASIC, *National Financial Literacy Strategy*, Report 229 (March 2011) p 37.

[3] OECD and International Network on Financial Education (INFE), *High Level Principles on National Strategies for Financial Education* (April 2012) p 2. These high-level principles were endorsed by the G20 Leaders at the Los Cabos Summit in June 2012.

least 36 countries have a financial literacy strategy in place[4] and many of these strategies, including the National Strategy, are guided and supported by the OECD International Network on Financial Education (INFE) High Level Principles.[5]

The recent global financial crisis was a watershed for the international financial literacy movement.[6] Australia's National Strategy was developed in the wake of the crisis, the events of which "highlight the importance of improving financial literacy levels … to reinforce core financial literacy concepts and to restore consumer and investor confidence".[7] Many reforms have been implemented following the financial crisis. Some of these reforms are aimed at providing additional protections to consumers of financial products and services.[8] Those who have promoted these reforms acknowledge the need to also enhance levels of financial literacy. For example, recently there has been a debate about the appropriate regulatory framework for those who provide financial advice to consumers. As part of this debate, the Assistant Treasurer emphasised the need for enhanced levels of financial literacy.[9] ASIC has indicated that improving access to financial advice is important for consumer not only because of the complexity of financial products and disclosure documents and the increased onus on consumers to make financial decisions to ensure their financial security, but also because of low levels of financial literacy.[10]

The long-term goal of the National Strategy is to change consumer behaviour, thereby improving financial outcomes and enhancing financial wellbeing.[11] Financial literacy education, targeted at different audiences at different stages of life, is one of the four foundational strategic aims of the National Strategy[12] and school financial literacy is a core component of the financial literacy education aim.[13] ASIC has developed strategic partnerships with state and federal governments and stakeholders, including schools, teachers and principals, professional associations and curriculum authorities.[14] A 2013 review of the National Strategy found widespread support for a focus on school financial literacy education under a revised National Strategy for 2014-2017.[15]

From its inception, the National Strategy has stressed that research and ongoing evaluation is fundamental to financial literacy education policies and initiatives.[16] The priority areas of the National Strategy are informed by current evidence from national financial literacy surveys and studies of

[4] Gifroni A and Messy FA, *Current Status of National Strategies for Financial Education: A Comparative Analysis and Relevant Practices*, OECD Working Papers on Insurance and Private Pensions No 16 (2012) p 6.

[5] OECD and INFE, n 3.

[6] OECD and INFE, n 3, pp 2-3.

[7] ASIC Report 229, n 2, pp 13-14.

[8] Some recent examples are the *Corporations Amendment (Future of Financial Advice) Act 2012* (Cth) and the *Consumer Credit Legislation Amendment (Enhancements) Act 2012* (Cth).

[9] "The challenge I see is even as we add more regulation to try and help those consumers with information, unless we are actually doing things to promote financial literacy, the more information we give them I don't think that necessarily leads them to making more informed choices": Assistant Treasurer, Senator Arthur Sinodinos, *Lateline*, Australian Broadcasting Corporation (11 March 2014), http://www.abc.net.au/lateline/content/2014/s3961375.htm.

[10] ASIC, *Access to Financial Advice in Australia*, Report 224 (December 2010). See also ASIC, *Shadow Shopping Study of Retirement Advice*, Report 279 (March 2012) p 62, where it is noted that some consumers may lack the financial literacy to evaluate the recommendations received from financial advisers.

[11] ASIC Report 229, n 2, p 37.

[12] ASIC Report 229, n 2, p 10. The three other core strategic aims are: to provide information and ongoing support such as developing a dedicated and interactive website for consumers; achieving behavioural change; and co-ordinating a long-term strategy, including identifying and fostering strategic partnerships with sectors that are best positioned to fund, implement and monitor financial literacy education initiatives.

[13] ASIC Report 229, n 2, p 18.

[14] ASIC Report 229, n 2, p 50.

[15] ASIC, *Shaping a National Financial Literacy Strategy for 2014-17: Consultation Feedback Report*, Report 374 (October 2013).

[16] ASIC Report 229, n 2, p 8.

consumer behaviour. As financial literacy is a relatively new policy area, ASIC recognises the importance of research and program evaluation in the foundational years of the National Strategy.[17] Further, a key dimension of the partnership model of the National Strategy, which includes the government, industry and education sectors, is the continuous and efficient sharing of resources, particularly research.[18] In the context of these large scale new policies around financial literacy and education, and as with any new policy intervention, measurements of current financial literacy levels are necessary.[19] Currently, very little research evidence in Australia and internationally exists that explores youth financial literacy in context by accounting for attitudes and demographic factors that can impact financial literacy.[20] The factors of skills and knowledge, attitudes and behaviours, and socio-demographic factors have not previously been assessed in one, single study of young Australians. This study responds to the gap in the research literature on young Australians and their financial literacy. Although the National Strategy positions school education as a priority, there is insufficient data for this important category of consumers.

In this article the authors present the findings of a study of the financial literacy knowledge and the behavioural/attitudinal traits of secondary school students in Year 11 at Australian secondary schools in rural, regional and metropolitan areas. First, the article discusses the importance of financial literacy generally, and specifically for young consumers and the benefits for individuals. Secondly, the authors discuss the role of ASIC, Australia's financial services regulator, in promoting the confident and informed participation of consumers and investors in the financial system and what ASIC is currently doing to achieve this objective under the National Strategy. Thirdly, the article examines why education programs are central to building financial literacy and the need for empirical research to underpin new policies and programs. The authors highlight that there is limited evidence regarding students' financial literacy and the importance of contributing current empirical data. Fourthly, the article outlines the methodology of the study and presents the findings. Finally, the article concludes by discussing the implications of these findings.

What is financial literacy and why is it important?

A widely used definition of financial literacy is "the knowledge and understanding of financial concepts, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts".[21] While definitions of financial literacy vary,[22] the vast majority of these characterise financial literacy as a "vital life skill for all consumers"[23] that is comprised of knowledge and complementary attitudes and behaviours that support the implementation of this knowledge in daily financial decision-making. ASIC uses the OECD definition above as well as a simpler version in certain contexts: "The ability to make informed judgments and to take effective decisions regarding the use and management of money."[24] While the

[17] ASIC Report 229, n 2, p 37.

[18] ASIC Report 229, n 2, p 49.

[19] ASIC Report 229, n 2, p 54. See generally the discussion in Xu L and Zia B, *Financial Literacy Around the World: An Overview of the Evidence with Practical Suggestions for the Way Forward*, Policy Research Working Paper 6107 (World Bank Development Research Group Finance and Private Sector Development Team, 2012).

[20] Sohn S, Joo S, Grable JE, Lee S and Kim M, "Adolescents' Financial Literacy: The Role of Financial Socialization Agents, Financial Experiences, and Money Attitudes in Shaping Financial Literacy Among South Korean Youth" (2012) 35 *Journal of Adolescence* 969 at 970.

[21] OECD, *PISA 2012 Financial Literacy Assessment Framework* (April 2012) p 13.

[22] For example, in the United Kingdom (UK), the term "financial capability" is used interchangeably with the term "financial literacy": see, eg, Atkinson A, McKay S, Kempson E and Collard S, *Levels of Financial Capability in the UK: Results of a Baseline Survey* (Financial Services Authority (FSA), March 2006).

[23] ASIC, *Financial Literacy in Schools*, Consultation Paper 45 (June 2003) p 7.

[24] This definition was originally used in the UK: Schagen S, *The Evaluation of NatWest Face 2 Face With Finance* (National Foundation for Education Research, 1997) and is used by the Australia and New Zealand Banking Group Ltd (ANZ) in their national surveys of Australia's adult financial literacy; see, eg, ANZ, *ANZ Survey of Adult Financial Literacy in Australia* (The Social Research Centre and ANZ Banking Group, October 2008).

knowledge required to be financially literate will differ for each person depending on their circumstances, ASIC considers that the following understanding is generally required:

- saving, how to budget for one's financial needs and priorities, and how to manage money;
- credit and the risks associated with various kinds of debt;
- the importance of insurance as it relates to risk protection;
- basic investment principles;
- superannuation and planning for retirement;
- the importance and benefits of comparison shopping for financial products;
- reputable, sound sources of financial advice and support; and
- how to recognise potential conflicts of interest and how to avoid financial scams or fraud.[25]

The following factors are cited in support of the need for increased financial literacy. First, the ability to make sound financial decisions is an essential life skill for all Australians, regardless of age. Sound financial decision-making is strongly linked with improved financial wellbeing and greater participation in economic life.[26] Participation in economic life affects quality of life, the opportunities that people can pursue, their sense of security, and the overall economic health of society. Higher levels of financial literacy are said to have benefits for individuals, families, communities and nations.[27] Australian and international studies find that financially literate individuals are better able to save for retirement and plan for future financial contingencies.[28] Financially literate individuals are more likely to have a realistic and proactive approach to their current financial situation and thereby increase their ability to maximise savings[29] and minimise financial risk.[30] Financially literate people are more likely to make efficient financial decisions[31] thereby increasing their likelihood of achieving financial goals.[32]

Secondly, the growing range of financial products available is related to changes in demography, as well as increases in consumer responsibility for superannuation decisions and retirement incomes.[33] This factor is relevant to all, regardless of age, but there are specific contexts most relevant to young people. In Australia and other developed countries, young people are facing increased school and higher education debt.[34] Young people are expected to make complex financial decisions at a much younger age than their parents.[35] Financial literacy is widely understood to be an intergenerational skill,[36] that is, financially literate people acquire these skills in part from their parents.[37] However, there is now a significant "generational gap" because rapid economic and social changes limit the role

[25] ASIC Report 229, n 2, p 11.

[26] ASIC Report 229, n 2, p 5. See also Lusardi A and Mitchell OS, *Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education Programs*, Centre for Financial Studies Working Paper No 2007/15 (Goethe University, Frankfurt, 2007).

[27] ASIC Report 229, n 2, p 16.

[28] Lusardi A and Mitchell OS, "Planning and Financial Literacy: How Do Women Fare?" (2008) 98 *American Economic Review* 413; ANZ, *Adult Financial Literacy in Australia*, Research Report (Social Research Centre and ANZ Bank, December 2011) p 53.

[29] Ramsay I and Capuano A, *What Causes Suboptimal Financial Behaviour? An Exploration of Financial Literacy, Social Influences and Behavioural Economics*, University of Melbourne Legal Studies Research Paper No 540 (2011) p 40.

[30] Ramsay and Capuano, n 29, p 29.

[31] Ramsay and Capuano, n 29, p 22.

[32] Hall K, *The Importance of Financial Literacy*, Speech delivered to the Conference on Deepening Financial Capacity in the Pacific Region (Sydney, 25 August 2008).

[33] ASIC Report 229, n 2, p 12.

[34] Lusardi A, Mitchell OS and Curto V, "Financial Literacy Among the Young" (2010) 44 *Journal of Consumer Affairs* 358 at 359.

[35] OECD, *PISA 2012 Assessment and Analytical Framework: Mathematics, Reading, Science, Problem Solving and Financial Literacy* (2013) p 142.

[36] Lissington B and Matthews C, *Intergenerational Transfer of Financial Literacy* (Massey School of Economics and Finance, October 2012).

of intergenerational financial learning.[38] The consequence is that the financial landscape for young people is vastly more complex than that of their parents' generation. In the absence of intergenerational learning, young people can be seriously disadvantaged by not having financial knowledge and skills that are commensurate with the financial decisions they are required to make.

Thirdly, it is suggested that improvements in individual financial literacy benefit communities because an individual's ability to meet financial goals and secure his or her financial wellbeing creates opportunities for social inclusion and enhances the economic health of a society.[39] By developing confidence, knowledge and skills to manage financial products and services, individuals will be better able to overcome or avoid financial exclusion. Recent studies have linked improved financial literacy with financial and social inclusion.[40] Exclusion from mainstream financial products and services negatively impacts a person's financial security[41] and emotional and physical health.[42] Studies find that low financial literacy is more common among groups where disadvantage and financial exclusion is prevalent.[43] In Australia, women, people aged between 18 and 24 years or over 65, people who speak English as a second language, people in blue collar occupations and people earning less than $20,000 per annum, or who are reliant on social security benefits are more likely to have low levels of financial literacy.[44] Increasing financial literacy is regarded as a means to allow people who are currently financially excluded to have greater knowledge of and access to mainstream financial products and services.[45] This, in turn, is expected to increase individual and family financial wellbeing and social inclusion.[46] These factors suggest that improving financial literacy is important not only for promoting financial resilience and optimal financial decision-making, but also as a broader social policy to address poverty and financial exclusion. Financial inclusion has been identified as a key strategic goal for the National Strategy for 2014-2017.[47]

Finally, it is suggested that financial literacy can contribute to the economic health of society over the long term. Experts agree that long-term changes in the financial literacy of the Australian population will take at least a generation.[48] The benefits of generational improvements in financial literacy for Australia's economic health include improved household savings and economic resilience, including a decreased reliance on government benefits. Further, it is suggested that higher levels of financial literacy will increase mainstream economic participation and drive competition, thereby improving market efficiency for the financial services sector.[49] This may, in turn, decrease the need for regulatory intervention.

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[37] Lusardi A and Mitchell OS, *The Economic Importance of Financial Literacy: Theory and Evidence*, Working Paper 18952 (National Bureau of Economic Research, April 2013) p 22.

[38] OECD and INFE, n 3, pp 9-10.

[39] ASIC Report 229, n 2, p 16.

[40] ASIC Report 229, n 2, p 5.

[41] Connolly C, Georgouras M, Hems L and Wolfson L, *Measuring Financial Exclusion in Australia* (Centre for Social Impact for National Australia Bank, University of New South Wales, 2011) p 27.

[42] Nelthorpe D and Digney K, *The Bulk Debt Negotiation Project: Client Profiles and Project Outcomes* (West Heidelberg Community Legal Service and the Victoria Law Foundation, March 2011) pp 9, 14.

[43] ANZ, n 28, p 15.

[44] ANZ, n 28, p 1.

[45] Ramsay and Capuano, n 29, p 30.

[46] ASIC Report 229, n 2, p 5.

[47] ASIC Report 374, n 15, p 9.

[48] ASIC Report 339, n 1, p 11.

[49] ASIC Report 229, n 2, p 16.

While these objectives are laudable, Australian and international[50] advocates for vulnerable and low-income consumers have warned that financial literacy, with its focus on consumer education, should not be implemented at the expense of strong regulation. Assisting consumers who are particularly vulnerable to exploitation and unmanageable debt requires more than financial literacy education. Further, consumer advocates submit it is erroneous to assume that all detriment, particularly for low-income and vulnerable consumers, is caused by low financial literacy.[51] It is expected that young people will have more limited financial knowledge by virtue of their limited life experience. A core challenge is determining what financial literacy is expected of young people relative to their experiences.[52] The OECD has consulted with educators and policy-makers from various countries to develop a consistent framework for measurements globally and has identified a series of cognitive learning processes that are expected to be acquired by 15-year-olds in schools in developed countries, relevant to their financial literacy.[53] First, the mathematical skills required to, for example, calculate percentages and convert one currency to another.[54] Secondly, the language and reading skills required to interpret advertising and contractual texts, such as mobile phone contracts.[55] Thirdly, the maturity to manage the emotional and psychological factors that influence financial decision-making.[56]

The OECD also expects students will have attained certain financial knowledge in four key areas by age 15. The first is knowledge of money and transactions, including an ability to differentiate between transaction methods, assess value for money, understand basic financial documents like bank statements and understand borrowing and lending concepts.[57] The second is the knowledge required to manage finances and identify income types, understand income tax and superannuation, budget, understand wealth building concepts like investing, identify the benefits of saving and understand the concept of credit and borrowing.[58] Thirdly, students should have the knowledge about risk and reward that is required to identify the risks associated with different financial products, understand the importance of insurance and the difference between fixed and variable rates of interest. Finally, students are expected to have a contextual knowledge of the role of money in society. This is required in order to understand the rights and obligations they have as consumers and how these can be enforced, the role of individual choice in spending and saving, the legal responsibilities of contracting, where to get help with financial products, how to identify trustworthy financial product providers and how to protect themselves against financial risk and scams. This also requires a level of reflective thinking so that students can identify possible factors influencing their choices as consumers and the role of peers and parents in informing financial decision-making.[59]

How do these international benchmarks fit with current expectations for young Australians? A number of the expected learning outcomes contained in the National Consumer and Financial Literacy Framework (Consumer Framework) developed in 2005 by the Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEEDYA) (now the Standing Council of School Education and Early Childhood) are similar to these international benchmarks. The Consumer

[50] Robson J and Canadian Centre for Financial Literacy, *The Case for Financial Literacy: Assessing the Effects of Financial Literacy Interventions for Low Income and Vulnerable Groups in Canada*, Research Report (Social and Enterprise Development Innovations, November 2012).

[51] Consumer Credit Legal Centre (NSW) Inc, *Australian Consumers and Money – A Discussion Paper by the Consumer and Financial Literacy Taskforce*, Submission to the Consumer and Financial Literacy Taskforce (July 2004) p 2.

[52] Messy FA, *Relevance of Financial Literacy in the New Financial Landscape – Main Target Audiences: Women and Youth OECD/INFE Policy and Assessment Tools*, Paper presented at the OECD Global Financial Literacy Summit (Amsterdam, 14 November 2012).

[53] OECD, n 21.

[54] OECD, n 21, p 14.

[55] OECD, n 21, p 21.

[56] OECD, n 21, p 14.

[57] OECD, n 21, p 15.

[58] OECD, n 21, p 20.

[59] OECD, n 21, p 21.

Framework expects Year 10 students to have knowledge and understanding of the value of money, income and expenditure and an ability to understand basic financial language such as an employer pay slip.[60] Students are expected to know why reliance on credit can cause financial difficulty and explain the consequences of over-indebtedness. Students are expected to be able to identify their consumer rights and responsibilities and identify risks or scams. They are also expected to be able to understand factors impacting on consumer choice and compare the value of goods and services. Students are also expected to be able to demonstrate an ability to create simple daily budgets, make plans for the future, balance risk and reward and compare goods and services. Students are expected to demonstrate critical thinking skills including an ability to discriminate between fact and opinion in advertising.[61] The OECD and MCEEDYA Frameworks can be used as benchmarks to assist in measuring the financial literacy of young Australians.

ASIC AND THE NATIONAL FINANCIAL LITERACY STRATEGY

From a regulatory perspective, financial literacy can be understood to be a consumer "responsibilisation tool" that empowers and educates consumers, in this way providing a "basis for better choice and through knowledge and understanding reducing the potential for fraud".[62] ASIC regards financial literacy policy as important and complementary[63] to other regulatory tools designed to protect consumers and ensure markets function effectively.[64] There are five regulatory tools currently used by ASIC in its capacity as the national regulator responsible for the enforcement and compliance of laws for the financial services sector.[65] These are:

- education, encompassing financial literacy;
- guidance to industry on how ASIC administers laws to clarify legal obligations;
- surveillance of entities to test compliance with laws and to analyse outcomes for consumers and investors;
- enforcement actions, including criminal, civil or administrative actions following investigations; and
- negotiated outcomes, such as enforceable undertakings.[66]

ASIC's stewardship of the National Strategy is consistent with the regulator's statutory aim of promoting the confident and informed participation of investors and consumers in Australia's financial system[67] and the education component of its activities. While there is rarely consensus for regulatory policy with objectives that impact a broad spectrum of stakeholders, financial literacy is widely accepted as a positive policy initiative.[68] Despite this, proponents of financial literacy acknowledge it is a policy with limitations, not least that outcomes of financial literacy education can be difficult to measure[69] and that it is not to be treated as a "panacea" for all consumer detriment or market

[60] MCEEDYA, *National Consumer and Financial Literacy Framework* (September 2011) p 17.

[61] MCEEDYA, n 60, p 22.

[62] Pearson G, "Reconceiving Regulation: Financial Literacy" (2008) 8 *Macquarie Law Journal* 45 at 53; see also Ramsay I, "Consumer Law, Regulatory Capitalism and the 'New Learning' in Regulation" (2006) 28 *Sydney Law Review* 9 at 13.

[63] ASIC Report 339, n 1, p 25.

[64] ASIC Report 229, n 2, pp 39-40. The Strategy Report states that for optimal working of financial literacy strategies the following requirements must be met: access for consumers and investors to simple and relevant information about financial products; adequate disclosure to allow for comparison and risk assessment; access to high quality, independent advice in the case of complex products; and prevention of misleading and deceptive conduct.

[65] ASIC, *Submission to the Senate Inquiry into the Performance of the Australian Securities and Investments Commission*, Main Submission by ASIC (October 2013) p 100.

[66] ASIC Submission, n 65, pp 100-101.

[67] *Australian Securities and Investments Commission Act 2001* (Cth), s 1(2)(b).

[68] Pearson, n 62, at 46.

[69] FSA and Personal Finance Research Centre, *Evidence of Impact: An Overview of Financial Education Evaluations* (May 2008).

failures.[70] Financial literacy has, notwithstanding such critiques, recently been identified as integral to a broad range of policy frameworks, including social and financial inclusion, in addition to consumer protection and the regulation of financial markets.[71]

There are seven principles that guide ASIC's work to promote confident and informed consumer participation under the National Strategy: inclusiveness; engagement; diversity; knowledge and empowerment; improving outcomes; partnerships; and measurement.[72] While ASIC has the overall responsibility for the development of the National Strategy, the responsibility for the delivery of financial literacy programs is shared with the financial services, community, government, and education sectors.[73] In its own capacity, ASIC has developed and launched the MoneySmart website,[74] with financial literacy information and online calculators and tools, that is reported to receive 400,000 visitors each month. ASIC has also completed the trial of MoneySmart Teaching, with over 8,000 teachers nationally receiving professional education. A dedicated education program for people aged 16 to 25 years, MoneySmart Rookie, was launched in June 2013. ASIC also has a dedicated Indigenous financial literacy program, which includes outreach work in remote communities.[75] There are 41 staff in the ASIC financial literacy team, which works in partnership with banks and financial service providers to promote financial literacy.[76]

ASIC advances the National Strategy through implementation of policies and programs in four key areas. The first is the provision of information and ongoing support, which encompasses developing resources such as the MoneySmart website. The second is education, including the core objective of integrating financial literacy into the national curriculum.[77] The third is achieving behavioural change, including integrating insights from behavioural economics[78] and influencing public policy and product design to change consumer behaviour. The fourth is operationalising long-term co-ordination of the Strategy, including building and maintaining partnerships, networking and knowledge sharing. This includes research that will evaluate financial literacy levels in different cohorts and evaluate financial literacy programs for effectiveness.[79] ASIC states that since 2011 there has been "major progress" in Australian school education programs. In particular, ASIC highlights that consumer and financial literacy programs are now integrated into the Australian national curriculum, in the mathematics curriculum and from 2014 financial literacy is one of four core concepts that will guide the economics and business curriculum. By 2020 all students in Australia will learn this content in Years 5-8.[80]

IMPORTANCE OF SCHOOL EDUCATION IN BUILDING FINANCIAL LITERACY

ASIC's focus on school education is consistent with the guidance of the OECD, which states that national strategies should introduce financial education as soon as possible, preferably in the school curriculum.[81] ASIC highlights that education, using established pathways, is critical to ensure equal opportunity for Australians. Established education pathways are early childhood education, schools,

[70] Pearson, n 62, at 55. See for a critique of financial literacy initiatives in retail market regulation, Moloney N, "Regulating the Retail Markets" (2010) 63 *Current Legal Problems* 375 at 420.

[71] ASIC Report 374, n 15, p 4.

[72] ASIC Report 229, n 2, pp 16-17.

[73] ASIC Submission, n 65, pp 35-36.

[74] See https://www.moneysmart.gov.au.

[75] ASIC Submission, n 65, p 36.

[76] ASIC Submission, n 65, p 41.

[77] ASIC Report 229, n 2, p 10.

[78] For a detailed overview of how ASIC understands and responds to behavioural economics insights for financial services and financial literacy education policies, see ASIC, *Financial Literacy and Behavioural Change*, Report 230 (March 2011).

[79] ASIC Report 229, n 2, p 10.

[80] ASIC Report 339, n 1, p 17.

[81] OECD and INFE, n 3, p 15.

further education including tertiary, vocational training, adult and community education. The focus on school education in part responds to concerns that young people engage with money and financial services from a far earlier age and are more frequently the targets of corporate advertising and marketing.[82] The purchasing power of young consumers is well recognised and consequently "children and adolescents are increasingly the target group for different forms of marketing practices and commercial pressures in order to stimulate and inflate their consumption".[83] ASIC states that young Australians should, upon leaving school, be equipped with the knowledge and skills required for financial decision-making, understand their consumer behaviour and know how to ask those questions that will enable savvy financial decision-making, thereby being capable of securing and improving their financial wellbeing.[84]

The focus on school education can also be understood in light of the finding that while Australians in general have reasonable levels of financial literacy, certain groups, including young people, do not have levels of financial literacy sufficient to understand financial concepts and make sound financial decisions. Studies find that many Australians have significant gaps in financial knowledge and that complex, unfamiliar or long-term financial matters are challenging for these people.[85] Studies also find that while young people are confident in their capacity as consumers,[86] their more limited ability to manage income and understand their consumer rights places them at risk of poor decision-making.[87] The consequences of poor decision-making for young people include the risk of serious financial error leading, in some cases, to debt stress.[88] Studies of Australian secondary school students and mobile phone debt have found that "bill shock" is common and that many young people have difficulties understanding mobile phone contracts and plans.[89]

Financial literacy education in schools has been recommended as an appropriate means of empowering and educating young consumers and raising levels of consumer rights awareness, itself an important aspect of financial literacy.[90] A national study of youth debt in 2007 found that one quarter of the 12-17 year olds surveyed had some form of debt, and while serious financial debt affects a small proportion of this group, the levels are concerning.[91] This study also highlighted the role of financial literacy education, but noted that it lacked resources and consistency in Australia.[92] Raising the levels of financial literacy in Australia is regarded as a necessary response to rapid changes in Australia's financial system, the increase in the number and complexity of available financial products and the need to self-fund retirement.[93]

How and when an individual acquires financial knowledge and skills and gains financial experience will vary. Advocates of financial education in schools suggest that this is the most efficient

[82] ASIC Report 229, n 2, p 18.

[83] Consumer Affairs Victoria, *Consumer Education in Schools*, Background Report (2003) p 7.

[84] ASIC Report 229, n 2, p 18.

[85] ASIC Report 229, n 2, p 15.

[86] Australian Financial Literacy Foundation (AFLF), *Financial Literacy: Australians Understanding Money* (2007) Appendix 1: Young People and Money.

[87] Kell P, *MoneySmart Rookie Campaign Launch*, Speech delivered at the University of Technology (Sydney, 18 June 2013); Commonwealth Bank Australia Foundation, *Results of the 2006 Australian Financial Literacy Assessment* (2006); Commonwealth Bank Australia Foundation, *Results of the 2005 Australian Financial Literacy Assessment* (2005).

[88] Kell, n 87.

[89] Department of Communications, Information Technology and the Arts, *The Social Impact of Mobile Phone Use in Australia: A Review of Data Sources* (April 2005) p 24; Fieldgrass L, *Mobile Matters: The Youth Advocates Project – Developing a Youth Participatory Action Research and Advocacy Program*, Report of the Australian Communications Consumer Action Network (2011) pp 9-10.

[90] Fieldgrass, n 89, p 27.

[91] Vittles P, Rintoul D, Power B and Keevy N, *Young People (12-17 Years) and Financial Debt* (National Youth Affairs Research Scheme, 2007) p 19.

[92] Vittles et al, n 91, p 47.

[93] ASIC Report 229, n 2, p 12.

way to increase financial literacy.[94] The education pathways of early childhood, school and further education including vocational training, university and adult education play significant roles in financial literacy acquisition.[95] Because studies find a link between the educational attainments of parents and financial literacy test scores[96] it is suggested that financial education programs in schools have the strongest potential to reach a broad cross-section of a population and address issues of equality.[97] It is also suggested that because it will take a generation to increase Australia's national financial literacy levels, it is critical to start financial education at a young age and school is the most effective place for this learning to occur.[98] The increased interaction of young people with money and corporate targeting of young consumers through advertising, social media and mobile phone technology are issues cited in support of educational interventions from a young age.[99] Schools are not the only place where it is expected people will attain financial literacy.[100] It is acknowledged that crowded school curricula and the development and delivery of new education programs pose challenges for education systems.[101] For the reasons cited above, however, it is suggested that schools are an effective and efficient way to increase financial literacy and address equity concerns by delivering programs to a broad cross-section of young people.

PREVIOUS RESEARCH ON YOUNG AUSTRALIANS AND FINANCIAL LITERACY

When compared with adult financial literacy studies, there is only a small body of Australian and international research on the levels of financial literacy of young people.[102] The ANZ Bank Adult Financial Literacy Survey suggests that young Australians are likely to have low levels of financial literacy.[103] The ANZ study found that 18-24-year-olds are one of five main demographic groups with low financial literacy in Australia. The study finds 18-24-year-olds perform poorly at forward financial planning and keeping track of finances, have a lower ability to choose suitable financial products and a weaker awareness of financial liability.[104] The 18-24 year age bracket performs poorly on questions assessing basic financial knowledge and numeracy and is more likely to exhibit a range of behaviours and attitudes strongly associated with sub-optimal financial outcomes such as a lack of awareness about their consumer rights and obligations.[105]

The most recent Australian studies of youth financial literacy were conducted in 2005 and 2006 by the Commonwealth Bank. These studies surveyed 15-year-old students to measure their basic financial literacy knowledge and attitudes to money. Both studies found significant gaps in the financial literacy of these students.[106] For example, while students had confidence in their skills as consumers, many had difficulty understanding financial transactions. Strong financial literacy was evident in some areas, for example 80% of students were knowledgeable about marketing and advertising initiatives and pricing strategies and the same number could demonstrate proficiency in

[94] OECD, n 35, p 142.

[95] ASIC Report 229, n 2, p 18.

[96] Lusardi et al, n 34 at 363.

[97] OECD, n 35, p 142.

[98] ASIC Report 229, n 2, p 6.

[99] ASIC Report 229, n 2, p 18.

[100] ASIC Report 229, n 2, p 22.

[101] ASIC Report 229, n 2, p 16; OECD, *Financial Education in Schools: Challenges, Case Studies and Policy Guidance*, Guidance Report (2012).

[102] OECD, n 35, p 143.

[103] ANZ, n 28, p 5.

[104] ANZ, n 28, pp 9-10.

[105] ANZ, n 28, p 93.

[106] Commonwealth Bank (2005), n 87.

managing basic daily expenditure.[107] However, a much smaller number could understand the more complex financial knowledge questions. Only 50% of students could accurately interpret a bank statement and were familiar with financial terminology such as "disposable income, superannuation, insurance or surcharge". Half of the students surveyed did not understand the purpose of having car insurance and 30% could not calculate best value for money when assessing different pricing regimes.[108] Some very basic questions, such as how to calculate which notes to request to withdraw a set amount from an ATM machine could not be answered by 15%-20% of students. Up to 20%-30% of students were unable to detect indicators of credit card fraud. Both studies found a "startling number of anomalies" in the actual financial capabilities of young Australians. This is considered to place young people at greater risk of adverse financial decision-making.[109]

There has, to date, only been one national study of the attitudes of Australian young people to money. In 2007 the Australian Financial Literacy Foundation, the federal government body responsible for coordinating financial literacy research and initiatives, surveyed 553 12-17-year-olds. The survey measured self-assessed attitudes and behaviours about financial matters. The survey did not measure actual levels of financial literacy. In certain areas, participants were found to be confident in their financial knowledge and capacities. Around two-thirds agreed that they had the ability and understanding to budget and 72% said they were confident in their ability to keep track of everyday spending. Around 90% reported they had the ability to save money.[110] However, only a quarter of participants said they regularly completed a budget for day-to-day finances and around half said they were confident in their ability to manage debt. A majority of the young people surveyed did not agree planning for the financial future is important, but 85% thought it was important to learn more about it. The survey found 67% responded that retirement, including superannuation and retirement planning, was too far away to think about.[111] International studies find that there is a frequent discrepancy between people's self-assessed knowledge and capabilities and their actual knowledge as measured in surveys or tests.[112] This has been found in surveys in the United States[113] and in Europe.[114]

Data on the financial literacy of young people can assist in establishing appropriate, targeted and responsive education programs. A review of the international literature finds three key areas that, as a matter of best practice, should be included in studies of financial literacy. The first is to measure knowledge and skills – what people know about finance, financial language and how they apply this knowledge in practice.[115] The second is to measure particular behavioural and attitudinal traits of participants.[116] Attitudinal traits such as confidence are suggested to be instrumental in applying

[107] Commonwealth Bank (2005), n 87, p 4.

[108] Commonwealth Bank (2005), n 87, p 6.

[109] Commonwealth Bank (2005), n 87, p 4.

[110] AFLF, n 86, p 57.

[111] AFLF, n 86, p 58.

[112] Lusardi and Mitchell, n 37, p 1.

[113] Lusardi A, *Americans' Financial Capability*, NBER Working Paper No 17103 (National Bureau of Economic Research, June 2011) pp 2-3.

[114] van Rooij M, Lusardi A and Alessie R, "Financial Literacy and Stock Market Participation" (2011) 101 *Journal of Financial Economics* 449.

[115] OECD, n 35, p 143.

[116] Ramsay and Capuano, n 29, p 31; OECD, n 35, p 144; Huston S, "Measuring Financial Literacy" (2010) 44 *Journal of Consumer Affairs* 296 at 310.

financial knowledge successfully in decision-making contexts.[117] The third is to account for financial literacy and relevant socio-demographic factors.[118]

STUDY

Survey design

Financial literacy skills and knowledge were measured with 32 multiple choice questions developed to assess the following areas: financial decision-making; financial language comprehension; formal financial literacy measuring the ability to conduct basic calculations and using practical skills to determine correct answers; financial knowledge comprehension, measuring awareness of matters such as investing or the classification of job types; consumer rights awareness; and financial risk awareness. These answers were then scored by reference to a 100 point scale, and a percentage of correct answers from 1%-100%. Participant attitudes to money were measured using 13 self-assessed, agree-disagree, Likert scale questions. Three questions measured the extent to which participants felt confident about managing their day-to-day spending and saving; their understanding of the language used by banks; and self-knowledge of consumer rights. The survey also asked which persons participants thought were trustworthy in financial matters and who participants currently discussed money matters with. Five survey questions probed for personal attitudes in respect of money and saving and thinking about the financial future. The combination of multiple choice questions and self-assessed attitudes was designed to allow for comparisons between test scores and particular attitudes to money. A draft of the survey was tested prior to implementation with six young people aged between 15 and 17 who provided feedback about survey readability, salience and relevance. The survey instrument also collected certain demographic information about participants, such as, gender, the language spoken at home, whether they worked part-time, and the occupation of their parents. This information was used to provide a socio-demographic "snap shot" of each participant.

Sample

A database of over 100 Victorian secondary schools with information on each school's socio-economic profile, student cohort and learning outcomes from the Department of Education and Early Childhood Development annual school reports was used to select nine representative schools to participate in the study which was conducted in 2012. These schools were chosen because it was believed that they were typical of secondary schools in metropolitan, rural and regional city areas of Victoria. Discussions with the principals and teachers of these schools found considerable support for the study and consensus that financial literacy education programs would benefit the students in their schools. Of the nine schools that participated in the study, three schools are located in metropolitan Melbourne, three schools are located in rural regions of Victoria and three schools are located in regional cities of Victoria. In the interests of preserving the anonymity of schools they are not named. The sample of 207 participants (who were all Year 11 students aged 16-17) consisted of 65 participants from schools in regional cities, 83 participants from schools in rural Victoria and 59 participants from schools in metropolitan Melbourne. There were 115 female and 92 male participants. Twenty-one participants spoke a language other than English at home and six participants identified as Aboriginal or Torres Strait Islander. The survey found that 121 participants had part-time jobs.

Findings

Following completion by the participants the surveys were coded and results recorded in a database. From these results, averages for each question and information about demographic results were determined. The average test score for all participants was 62.8. The highest individual test score was 100.0 and the lowest was 24.2. Across the six areas of financial literacy measured there were

[117] Ramsay and Capuano, n 29, p 53.

[118] Worthington A, "Predicting Financial Literacy in Australia" (2006) 15 *Financial Services Review* 5 at 59; de Bruin WB, Vanderklaauw W, Downs JS, Fischhoff B, Topa G and Armantier O, "Expectations of Inflation: The Role of Demographic Variables, Expectation Formation, and Financial Literacy" (2010) 44 *Journal of Consumer Affairs* 381; Ramsay and Capuano, n 29, p 90.

considerable variations. On average, participants scored most highly in the area of financial decision-making (82.0) and financial language comprehension (77.9). Lower average scores were recorded in the areas of financial risk awareness (67.9) and consumer rights awareness (54.1). On average, the participants performed lower in the questions assessing formal financial literacy (52.0) and financial knowledge (41.8). There was a slight difference for average scores based on gender. On average, male participants scored slightly higher (65.0) compared with females (60.8). Across the specific areas of financial literacy tested, males scored slightly higher than females in the area of financial language comprehension (78.4) vs (77.4); in the area of financial knowledge comprehension (45.0) vs (39.3); in the area of consumer rights awareness (55.9) vs (52.7); and formal financial literacy (57.6) vs (47.6). Females on average scored slightly higher in the area of financial decision-making (83.0) vs (80.71). In the area of financial risk awareness there was little gender difference: males scored on average 67.7 and females scored 68.1.

There was a small difference between participants who had part-time employment and those who did not. Participants with part-time jobs scored on average slightly lower overall (61.2) than those without a part-time job (65.5). There was also a small difference relating to the language spoken at home. Participants who spoke a language other than English at home scored on average slightly higher (65.9) than those who spoke English at home (62.4). Participants with one or more parents currently working in a professional occupation scored on average higher overall (68.5) than those that did not (60.5). There was a significant difference between the average score for metropolitan participants (73.3) and non-metropolitan participants (58.8). The survey found 86.9% of participants reported that they currently discussed money with parents, 40.9% with their friends and 30% with their siblings. A smaller percentage of participants stated that they discussed money matters with teachers (8.6%), other relatives (20.2%), financial advisors such as bank managers and accountants (14.6%) or their employers (13.6%). An overwhelming majority of participants (87%) agreed with the statement "Saving money is important to me". The same number agreed that they thought about saving money for the future. Over half the participants disagreed with the statement: "I don't like thinking about money". Over 70% of participants agreed that learning more about money and finances is important.

One key finding is the discrepancy between the self-assessment confidence about abilities and demonstrated abilities. Participants on average performed poorly on those questions that measured the ability to implement skills such as budgeting and calculating, with an average score of 52.0. However 77.7% of participants agreed they were confident in managing their spending and saving. This finding suggests that while participants may feel confident in their abilities, they may lack the concrete skills that in practice enable them to budget and manage finances effectively. Another key finding is that participants who agreed with the statement "Saving money is important to me" had much higher scores in the area of formal financial literacy than those who disagreed with this statement. Further, participants who agreed with the statement "Leaning more about money and finances is important to me" had higher overall average scores (65.4) than those who disagreed with this statement (56.6). This finding suggests that a positive attitude to saving money and learning more about financial matters may impact on levels of financial literacy.

Results of regression tests

The second stage of analysis was a series of regression tests to determine relationships of significance between demographic characteristics (including the geographic region of participants, gender, parental occupation and part-time work) and test scores. Regression tests were also conducted to determine whether certain attitudes and participant answers about who is considered trustworthy have a relationship to the survey scores.

Geographic regions

The survey classified the schools into three regions: schools located in the metropolitan region of Melbourne; schools located in rural regions; and schools located in regional cities. As Table 1 indicates, test scores for participants in the metropolitan schools were substantially higher than for participants in regional city schools and rural schools. When test scores are arrayed into quartiles, the contrast is even more marked. Examining the metropolitan school sample, some 60% of participants returned test scores that were ranked in the highest quartile (Table 2). Only 15.4% of participants in regional city schools and 11.3% of participants in rural schools scored well enough to be placed in the highest quartile. Again, by contrast, one in three of the participants in rural schools were in the lowest quartile, as compared with one in eight of the participants in metropolitan schools. This is displayed graphically in Figure 1.

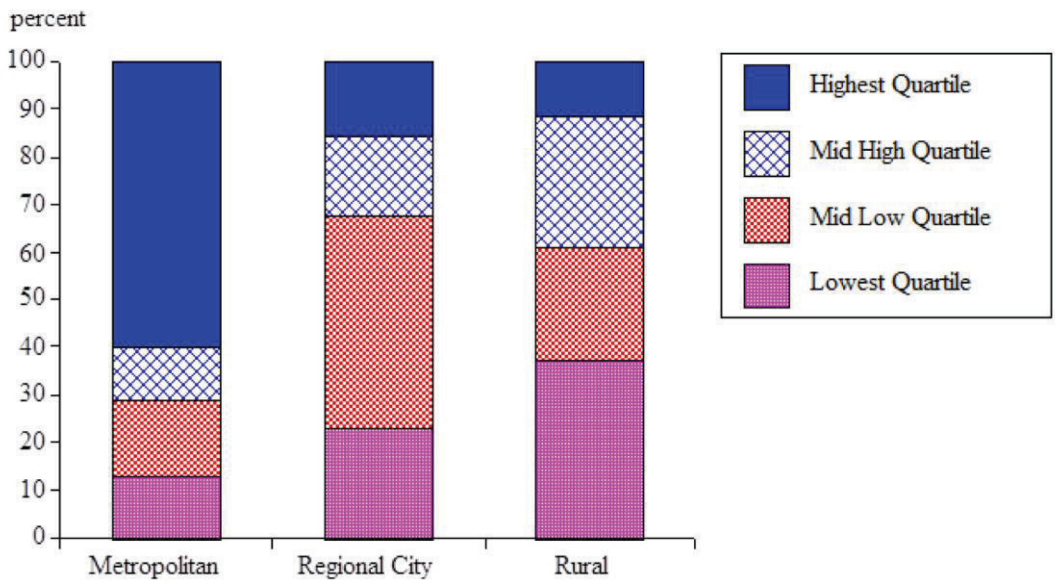
TABLE 1 Average test scores by three regions

Region	Test score
Metropolitan	73.3347
Regional cities	59.7220
Rural	56.8566

TABLE 2 Proportion of participants in each test-score quartile by region

	Metropolitan	Regional city	Rural
Lowest quartile	12.7	23.1	37.5
Mid low quartile	16.4	44.6	23.8
Mid high quartile	10.9	16.9	27.5
Highest quartile	60.0	15.4	11.3

FIGURE 1 Proportion of participants in each test-score quartile by region



As indicated in Table 3,[119] Analysis of Variance (ANOVA) and Multiple Range T-Tests, or Scheffe Tests found that the main differences in scores occurred: between schools in the metropolitan

[119] This table is a summary of seven separate ANOVA tests. Each ANOVA test is to see if the mean scores differ from zone to zone. In all cases degrees of freedom (df) is two (Between Groups) and 197 (Within Groups) on Oneway Analysis of Variance tests. For significance levels, one asterisk indicates significance at the 0.05 level; while two asterisks indicates significance at the 0.01 level. If the ANOVA is significant, the two final columns report statistical significance from Scheffe tests between different

region and schools in regional cities; and between schools in the metropolitan region and rural schools. This pattern was evidenced when tested on the basis of the test-score and five of the six financial literacy indices. Only the Financial Decision-Making Index did not reveal any statistically significant differences among average scores from the three regions. As the Scheffe tests also show, there was negligible difference in scores for schools in regional cities and rural schools (none of which were statistically significant).

TABLE 3 Summary of ANOVA results on regional differences on overall test scores and for each sub-area of financial literacy tested

Index	Significance	F-Ratio	F-Prob	Scheffe 1	Scheffe 2
Overall test score	**	18.8914	0.0000	*	*
Financial Decision-Making Index		1.0004	0.3696		
Financial Language Comprehension Index	**	6.8200	0.0014		*
Formal Financial Literacy Index	**	22.8971	0.0000	*	*
Financial Knowledge Comprehension Index	**	8.7322	0.0002	*	*
Consumer Rights Awareness Index	**	7.2841	0.0009	*	*
Financial Risk Awareness Index	**	5.0863	0.0070	*	*

Gender

A slight majority of participants were female (55.6%). Males scored slightly higher overall (65.0% of answers corrects) than females (60.8%) but regression analysis found that this difference was not statistically significant. In one of the financial literacy areas there was a statistically significant difference for gender, for those questions assessing formal financial literacy. In this area male participants' scores averaged 10 percentage points higher than females, 57.6% correct for the male average as against 47.6% for females.

Part-time employment

Nearly three-fifths of participants were employed part-time. The authors sought to determine whether part-time work might aid or hinder participants' financial literacy. There was no real difference in the overall test scores between workers (averaging 61.2% correct) and non-workers (65.1% correct). This was also checked with a Chi-square test where participant test scores were allocated into quartiles: there was no relationship of significance between higher quartile participants and the likelihood of holding part-time work. Exactly half of the top quartile participants held part-time employment, compared to three-fifths of those in the lower three quartiles. However, for the bottom quartile, there was no statistically significant difference in the proportion which held part-time jobs as opposed to the proportion of job-holders in the three upper quartiles.

With respect to gender, there was a difference in whether participants held part-time employment, with more females working (67.0%) than their male counterparts (47.8%). There was also a great

pairs of zones. The column headed "Scheffe 1" tests between the means of metropolitan and regional cities; "Scheffe 2" tests between the means of metropolitan and rural. There were no significant differences between regional cities and rural. Sheffe test significance (one asterisk) is normally reported (as it is here) at the 0.05 level of significance.

difference between the likelihood of participants in non-metropolitan regions holding down a part-time job (69.0%) than their metropolitan counterparts (of whom, only 32.7% held part-time jobs). On a Chi-Square test of independence, this difference was statistically significant at the 0.01 level (Pearson Chi-Square value of 21.64707; p=0.00000). Given that non-metropolitan participants overall (as the survey has shown) tended to score far lower on test scores, the authors tested both gender and employment – together with region in an Ordinary Least Squares (OLS) regression. Based on the results of this analysis, part-time employment, the authors conclude, neither hinders nor advances financial literacy.

Parental occupation

Answers given by participants of their parents' occupations were coded as professional, managerial, or financial. As Table 4[120] shows, the overall test score was significant between groups where the participants indicated at least one parent was in a finance-related occupation (versus non-finance occupation). It was also significant for four of the six indices. However, there were no statistically significant differences for participants with a parent in either a professional or managerial occupation (tested, respectively with a non-professional and non-managerial occupation). This was the same across each financial literacy area tested.

TABLE 4 T-test differences on test scores overall and for each sub-area of financial literacy tested according to parental occupation in finance-related position

Index	Finance	Non-finance	Significance
Overall test score	79.5	61.6	**
Financial Decision-Making Index	94.2	81.2	**
Financial Language Comprehension Index	81.7	77.6	
Formal Financial Literacy Index	80.0	50.2	**
Financial Knowledge Comprehension Index	58.5	40.7	*
Consumer Rights Awareness Index	67.9	53.2	
Financial Risk Awareness Index	89.7	66.5	**

The authors sought to test the influence of a parent working in target occupations while factoring for part-time work and gender. The OLS regression results found that, again, participants with a parent in a finance-related occupation positively impacted test scores.

Self-assessed confidence

Regressions using correlations with relevant indices measured whether self-assessed confidence was related to actual test scores in these areas. First, the scores for questions assessing formal financial literacy were correlated with self-assessed confidence in managing spending and saving. This test was then repeated with scores in the area of financial language comprehension and self-assessed confidence in understanding financial language, and scores in the area of consumer rights awareness and self-assessed confidence in understanding consumer rights. The tests found that only the first pair – namely confidence in managing spending and saving – positively correlated with scores in the area of formal financial literacy: correlation r=0.037; significant at the 0.05 level. There was no correlation between the other two indices and their respective self-assessed questions.

[120] T-Tests scores between groups where at least one parent was in a finance-related occupation (versus a non-finance occupation). Sample size: n=13 for finance-related occupation; n=194 for non-finance-related. For significance levels, one asterisk indicates significance at the 0.05 level; while two asterisks indicates significance at the 0.01 level (separate variance estimates; two-tailed test).

Attitudes to money

Five questions asked participants to respond to a series of attitudinal propositions about money. These questions were: “Saving money is important to me”; “I don’t like thinking about money”; “I think about saving money for my future”; “Money is just for spending on the things I want”; and “Learning more about money and finance is important to me”. The survey tested to see if overall test scores were any different if participants agreed with the proposition or if they disagreed (or were neutral). Those who agreed with the first attitudinal question, “Saving money is important to me” tended to score more highly on overall test scores than those who did not (statistically significant at the 0.01 level). Similarly, those who agreed with the fifth proposition, “Learning more about money and finance is important to me” scored more highly on overall test scores than those who disagreed. These results suggest that those who have a positive attitude to saving money and a positive attitude to learning more about money and finance have higher levels of financial literacy than those who do not.

Discussions about finances

Participants were presented with a list of people and asked if they currently discussed money matters with them. Table 5[121] reports whether there were any differences in overall test scores between participants who consulted a particular group and those who did not. Those who gained higher test scores tended to talk with parents or teachers about financial matters.

TABLE 5 T-Test differences on overall test scores according to who was consulted in respect of financial advice

Group	T-Test significance	Higher test-score if consulted
Friends		n/a
Parents	**	YES
Siblings	x	YES
Teachers	*	YES
Other relatives	x	NO
Financial planners		n/a
Employers	x	NO

While the survey found a difference in test-scores between participants who did discuss financial matters with parents (n=172 or 83.1% of the total sample) and those who did not (n=35 or 16.9%), the authors sought to look at this relationship in terms of top and bottom quartiles of participant ability as measured by their test score. Table 6[122] presents proportions of participants in the top and bottom quartiles who consulted parents about personal finances. As can be seen, the overwhelming proportion of participants in the top quartile did discuss personal finances with their parents (94.6%). There was a statistically significant difference between the percentage of participants in the top quartile who consulted their parents about personal finances, and the percentage of participants in the bottom quartile who consulted their parents.

[121] T-Tests scores between groups “Currently discuss with” v “Non-discuss”. For significance levels, an “x” indicates significance at the 0.10 level; one asterisk indicates significance at the 0.05 level; while two asterisks indicates significance at the 0.01 level (separate variance estimates; two-tailed test).

[122] Testing the null hypothesis that percentages (discussing with parents) are the same with a Chi-Square test of independence, the hypothesis was rejected with a Pearson Chi-Square value of 4.90149 (p=0.02683), thus statistically significant at the 0.05 level. Since it was possible for scores to “clump” at particular values, “quartiles” are necessarily approximate only: from Q1 and Q4, the sample sizes are, respectively, n=52 and n=56.

TABLE 6 Cross tabulation of sample "discussing personal finances with parents" by test-score quartiles

Variable label	Quartile 1 (lowest)	Quartile 4 (top)
Discussed personal finances with parents	80.8	94.6
Did not discuss with parents	19.2	5.4

These findings suggest that discussion about finances with parents enhances financial literacy for young people. A similar finding is reported in studies of Australian adult financial literacy – adults are more likely to have higher levels of financial literacy if they currently discuss, or have discussed, money matters with their parents.[123]

Trustworthiness

Table 7[124] reports whether there were any differences in overall test scores between participants who agreed that a particular type of individual was trustworthy – and those who did not agree. Those who believed teachers were trustworthy (in respect of the participant's personal financial decision-making) tended to return higher test scores.

TABLE 7 T-test differences on overall test scores according to who was consulted in respect of financial advice

Group	T-Test significance	Higher test score if thought trustworthy
Teachers	*	YES
Parents		n/a
Friends		n/a
Accountants		n/a
Bank managers		n/a
Gamblers	x	NO

DISCUSSION AND CONCLUSION

The central findings of this study are that there are gaps in the financial literacy levels of participants and that these gaps are most prominent in the areas of formal financial literacy, consumer rights awareness and financial knowledge. Identifying the areas where there are gaps can assist in the development of education programs that address these gaps. Another important finding is the discrepancy between self-assessed confidence about abilities and demonstrated abilities. The study also finds that those participants who view saving money and learning more about financial matters positively had higher overall test scores, suggesting that these attitudes may play a role in financial literacy. The study finds that there are certain relationships that may play a role in young people's financial literacy, namely that those who consider teachers trustworthy with money matters and those who discuss money matters with parents and teachers score more highly.

[123] ANZ, n 28, p 112.

[124] T-Tests scores between groups "Thought trustworthy" v "Other". For significance levels, an "x" indicates significance at the 0.10 level; one asterisk indicates significance at the 0.05 level; while two asterisks indicates significance at the 0.01 level (separate variance estimates; two-tailed test).

The study finds significant differences in test scores for participants in different geographic areas – lower scores for participants in rural areas and regional cities and higher scores for those participants in metropolitan areas. Further and more detailed research can identify which factors specific to regional and rural Australia are at play in the development of financial literacy skills. The finding that parental occupation is related to higher test scores is consistent with the findings of international studies[125] that individuals from families with higher education levels and financial assets perform better in measures of financial literacy. While it is beyond the scope of this study to address this issue in all its complexity, the findings suggest rich ground for further investigation about the impact of the socio-economic circumstances of families and how this may influence a young person's financial literacy levels.

The findings have important implications for policy-makers, educators, regulators and researchers interested in financial literacy and consumer protection. In relation to consumer protection, when young people have higher levels of financial literacy, this can result in more informed financial decision-making and thereby protect young adults as consumers. The connection between financial literacy and consumer protection has been identified by the World Bank: "Effective consumer protection frameworks and institutional structures are necessary but not sufficient conditions for effective protection of the interests of the consumer of financial services. Only informed and educated users of financial services can be fully empowered by the opportunities the modern financial system provides."[126] Consequently, research that identifies groups that have lower levels of financial literacy links directly to enhancing consumer protection.

In addition, the research findings in this article contribute new evidence in an area where significant policy, at a national level, is currently being developed and implemented. The National Financial Literacy Strategy, developed by ASIC at the request of the government, states that: "Financial literacy education at school is particularly important and is a central concern of this Strategy."[127] The National Strategy also emphasises the importance of financial literacy research.[128] This study responds to a key gap in the research literature on young people's financial literacy in Australia. In particular, the research identifies some aspects of financial literacy, such as consumer rights awareness and financial knowledge, where the participants have lower scores, and some groups of young people that have lower levels of financial literacy and therefore are more vulnerable to poor financial decision-making. These findings assume particular significance given how active young people are as consumers. This research can assist in the development of targeted, relevant education programs. Financial literacy is a practically oriented, life skill and therefore education programs that incorporate the findings of empirical research and that respond to the needs of young people are most likely to equip them with the skills they need to make sound, informed financial decisions.

[125] Lusardi and Mitchell, n 28.

[126] World Bank, *Global Survey on Consumer Protection and Financial Literacy: Results Brief – Regulatory Practices in 114 Economies* (2013) p 22. The World Bank has also stated that: "Consumer protection ensures that consumers receive information that will allow them to make informed decisions, are not subject to unfair and deceptive practices, have access to recourse mechanisms to resolve disputes when transactions go awry, and are able to maintain privacy of their personal information. Financial literacy gives consumers the skills to understand and evaluate the information they receive. Together consumer protection and financial literacy set clear rules of engagement between financial firms and their retail customers – and help narrow the knowledge gap between consumers and their financial institutions.": Rutledge SL, Annamalai N, Lester R and Symonds RL, *Good Practices for Consumer Protection and Financial Literacy in Europe and Central Asia: A Diagnostic Tool* (World Bank, October 2008) p iii.

[127] ASIC Report 229, n 2, p 18.

[128] ASIC Report 229, n 2, pp 53-54.