University of Wollongong
Research Online

Faculty of Commerce - Papers (Archive)

Faculty of Business

2006

Financial literacy research: current literature and future opportunities

Sonia Marcolin
University of Wollongong, marcolin@uow.edu.au

Anne Abraham
University of Wollongong, aabraham@uow.edu.au

Publication Details

This conference paper was originally published as Marcolin, S and Abraham, A, Financial literacy research: current literature and future opportunities, In P. Basu, G. O'Neill & A. Travaglione (Eds.), Proceedings of the 3rd International Conference on Contemporary Business, Leura NSW, 21-22 September 2006. Australia: Faculty of Commerce, Charles Stuart University.

Research Online is the open access institutional repository for the University of Wollongong. For further information contact the UOW Library: research-pubs@uow.edu.au

Financial literacy research: current literature and future opportunities

Abstract
The need for financial literacy has become increasingly significant with the deregulation of financial markets and the easier access to credit; the ready issue of credit cards; the rapid growth in marketing financial products and the Government's encouragement for its citizens to take more self-responsibility for their retirement incomes. This paper reviews, compares and analyses studies conducted in Australia, the United States and the United Kingdom to determine areas of both commonality and inconsistency. As a result of this analysis, the paper presents recurrent themes that could be extended, together with potential new areas for financial literacy research.

Keywords
financial literacy, financial education, personal finance, financial skills

Disciplines
Business | Social and Behavioral Sciences

Publication Details
This conference paper was originally published as Marcolin, S and Abraham, A, Financial literacy research: current literature and future opportunities, In P. Basu, G. O'Neill & A. Travaglione (Eds.), Proceedings of the 3rd International Conference on Contemporary Business, Leura NSW, 21-22 September 2006. Australia: Faculty of Commerce, Charles Stuart University.

This conference paper is available at Research Online: http://ro.uow.edu.au/commpapers/223

3rd International Conference of Contemporary Business 2006
Leura, 21-22 September

FINANCIAL LITERACY RESEARCH: CURRENT LITERATURE AND FUTURE OPPORTUNITIES

Sonia Marcolin
School of Accounting and Finance
University of Wollongong
Australia

Anne Abraham
School of Accounting and Finance
University of Wollongong
Australia

Abstract

The need for financial literacy has become increasingly significant with the deregulation of financial markets and the easier access to credit; the ready issue of credit cards; the rapid growth in marketing financial products and the Government's encouragement for its citizens to take more self-responsibility for their retirement incomes.

This paper reviews, compares and analyses studies conducted in Australia, the United States and the United Kingdom to determine areas of both commonality and inconsistency. As a result of this analysis, the paper presents recurrent themes that could be extended, together with potential new areas for financial literacy research.

Keywords: financial literacy, financial education, personal finance, financial skills.

FINANCIAL LITERACY RESEARCH: CURRENT LITERATURE AND FUTURE OPPORTUNITIES

INTRODUCTION

Financial literacy skills enable individuals to navigate the financial world, make informed decisions about their money and minimise their chances of being misled on financial matters (Beal and Delpachitra, 2003; CBF, 2004b; Raven, 2005). The need for financial literacy has become significant with the deregulation of financial markets and the easier access to credit as financial institutions compete strongly with each other for market share, the rapid growth in development and marketing of financial products, and the Government's encouragement for people to take more responsibility for their retirement incomes.

This paper reviews, compares and analyses studies conducted in Australia, the United States and the United Kingdom to determine areas of both commonality and inconsistency. As a result of this analysis, the paper presents recurrent themes that could be extended, together with potential new areas for financial literacy research.

The seminal definition of financial literacy was 'the ability to make informed judgments and to take effective decisions regarding the use and management of money' (Noctor et al, 1992). Later research has adopted this definition and extended it to incorporate a more detailed description of the components underlying their concepts of what it means to be financially literate. For example, "the ability to balance a bank account, prepare budgets, save for the future and learn strategies to manage or avoid debt" (CBF, 2004a, p. 1) and "enabling people to make informed and confident decisions regarding all aspects of their budgeting, spending and saving and their use of financial products and services, from everyday banking through to borrowing, investing and planning for the future" (RMR, 2003, p. 1).

INCREASING NEED FOR FINANCIAL LITERACY

The need for financial skills has grown rapidly over the last decade because 'financial markets have been deregulated and credit has become easier to obtain as financial institutions compete strongly with each other for market share' (Beal and Delpachitra, 2003, p. 65). The ready availability of credit cards together with easier access to personal loans, interest free and other payment options, has led to an increase in spending on consumption and a rapid rise in both personal and household debt levels (RBA 2005, pp. 10-11). Moreover, the development and marketing of financial products and services has grown rapidly.

Since 'governments world-wide are moving down the path of encouraging their citizens to take more responsibility for their retirement incomes and to move away from public pensions' (Beal and Delpachitra, 2003, p. 65), people need to be more knowledgeable about superannuation funds and how they operate, including an understanding of their own and their employer's responsibility, as well as the many options that are available to them (Abetz, 2005). Young people in particular must understand the basics of

investing and planning for the future, including the relationship between risk and return and the diversity between short-term and long-term investments, and the ramifications of not planning adequately for their retirement.

Having financial literacy skills is an essential basis for both avoiding and solving financial problems, which, in turn, are vital to living a prosperous, healthy and happy life (CBF, 2005b, p. 4). Financial problems are often the basis for divorce, mental illness and a variety of other unhappy experiences (Kinnunen and Pulkkinen, 1998; Yeung and Hofferth, 1998; Cleek and Pearson, 1985). In addition, "financial hardship can increase isolation, emotional stress, depression and lower self-esteem, which, in turn, can generate or exacerbate marital tensions" that lead to divorce (Wolcott and Hughes, 1999, p. 10).

Thus, financial literacy will continue to be a prominent research topic and it is expected that the focus will lean towards the implementation and evaluation of strategies to improve the financial literacy levels of certain cohorts of populations where a lack of financial knowledge and skill has been identified by previous research (FLF, 2005b; RMR, 2003). Further, the high number of people with low levels of financial literacy presents a serious problem for both the economic well-being of nations and the personal well-being of such individuals (CBF, 2004a; Morton, 2005; RMR, 2003). Thus research is required to determine appropriate and accurate benchmarks for the ongoing measurement of financial literacy. In addition, continuing changes and advancements in technology, as well as requirements regarding saving, borrowing, investing, retirement, medical and insurance will provide further impetus for financial literacy research.

AUSTRALIAN FINANCIAL LITERACY RESEARCH

(a) The Beal and Delpachitra Study (2002)

The first Australian financial literacy surveys was conducted on a sample of first-year students from the University of Southern Queensland across five faculties and tested five main skill areas: basic concepts, markets and instruments of the financial markets, planning, analysis and decision making, and insurance. The major analytical method was logistic regression modelling with a total of ten independent variables collected from the survey questions. A dichotomous dependant variable was defined by classifying respondents into two groups, high achievers and low achievers.

Analysis of the full model showed that students with higher financial literacy scores were more likely to be male, have greater work experience, have a higher income and have a lower aggregate risk preference. While the study showed that students with higher general financial knowledge and skills were more likely to be studying business, be male, work in a more highly skilled occupation and have more work experience, the researchers reached the overall conclusion that university students were not skilled, nor knowledgeable in financial matters and that this would tend to impact negatively on their future lives through incompetent financial management (Beal and Delpachitra, 2003).

(b) The ANZ Study (2003)
Australia's first national survey on financial literacy was conducted on behalf of the ANZ bank (RMR, 2003). There were two parts components to the study: a telephone survey of 3548 adults and an in-depth survey of 202 adults which included a self-completion component and an interview. The researchers decided that knowledge should only be tested against an individual's needs and circumstances and hence not all respondents were asked all of the questions. The validity of this methodology is questionable for several reasons.

First, it is important for all consumers to have an understanding of financial products and services, even if they have not as yet been exposed directly to such products or services. Secondly, a potential positive bias could be introduced into the results because if respondents are only asked questions about financial products and services that they currently use, then it can be expected that their knowledge of such products and/or services is somewhat higher than a respondent who does not use that particular product or service. This positive bias in results is evident when the overall findings of the ANZ survey are compared with those of CBA survey, with the ANZ survey showing more positive results overall resulting in the appearance of higher financial literacy levels. A third methodological weakness is that self-rating questions were used, which again, may introduce biases since only perceptions of understanding were collected rather than actually testing understanding. An alternative approach to test respondents' levels of understanding would be to set a benchmark for the entire sample population by using 'exam-type' questions and for the interviewer to rate scores or marks accordingly.

Despite these limitations, the ANZ survey attempted to measure knowledge and understanding, behaviour, attitudes, perceptions and awareness rather than simply measuring skills. In addition, the chosen sample was highly representative of the Australian population, with confidence intervals of less then +/– 2% at the 95 percent confidence level.

Ten levels of financial literacy were combined to form financial literacy quintiles and the results were presented in terms of correlations, averages and percentages. The findings indicated that whereas Australians overall were financially literate, there were certain groups with particular challenges. Those groups were identified as those with a lower level of education, not working or in unskilled work, with lower incomes, with lower savings levels, single people and people at both extremes of the age profile (under 24 and over 70). By contrast, those in the highest financial literacy quintile were tertiary degrees holders, professional and business owners, couples with no children and people aged between 45 and 59 years. Thus, despite individuals only being tested on the issues relevant to their circumstances and needs, a strong correlation was found between financial literacy and socio-economic status.

This analysis of the data was extended by Worthington (2004) who used ordered logit models to explain the components of a consumer behaviour model, put forward by the Consumer and Financial Literacy Taskforce (CFLT, 2004) which hypothesised that decisions made in the financial services markets are made up of five elements; external events, socioeconomic background, personal characteristics, skills levels and choices of information. The overall findings of his analysis indicated that female, non-English

speaking, unemployed and non-working respondents, farm workers and persons whose highest level of educational attainment was year 10, year 12 or technical education had the greatest likelihood of a low level of financial literacy.

(c) The CBA Study (2004)

The CBA's survey on financial literacy was the first study to investigate the strength of any link between financial literacy and outcomes for individuals and the Australian economy (CBF 2004a, 2004b). This was achieved in three phases: a national telephone survey of 5000 Australians, an investigation of the microeconomic effects of improving financial literacy, and analysis of the macroeconomic effects of improving financial literacy.

The results of the survey showed that the unemployed had poor financial literacy skills. Also among this group were younger people, males, students, people with lower levels of education, people with lower income and people who have never worked in paid employment. Participants with these demographic characteristics made up the 10 percent of respondents with the lowest financial literacy scores. Results of the survey also showed that people in older age groups displayed lower financial literacy, suggesting that financial literacy is not merely a function of age or experience.

The results also indicated that the higher an individual's financial literacy, the lower the probability that they were unemployed. In addition, lower financial literacy was found to have an impact on an individual's health including a higher incidence of persistent sleeplessness and a higher desire to smoke. In terms of debt management, lower financial literacy scores were significantly related to respondents being unable to pay their mobile phone, utility and credit cards bills. The survey also revealed that 85 percent of respondents primarily learn about managing their finances through 'trial and error' experiences

The second phase of the study revealed that improvements in financial literacy "can result in lifestyle gains for individuals of all ages, across the whole community" (CBF, 2004b, p. 4). For those respondents with the lowest levels of financial literacy, the expected probability of unemployment was 14.3 percent, compared to 1.7 percent for those with the highest levels of financial literacy. Further, there was evidence that a modest improvement of the financial literacy of the 10 percent of respondents with the lowest financial literacy scores would result in these people having an average increase in annual income of $3204.

The third phase of the study revealed that an improvement in financial literacy has the potential to create more than 16 000 new jobs boosting Australia's economy by $6 billion per annum (CBF, 2004b, p. 3). Other anticipated macroeconomic effects include strengthening national savings, increasing public and private consumption and creating more successful small businesses.

Comparison of the Studies

While the ANZ survey indicated that Australians were generally financially literate with certain groups of people who lack skills, the overall results of the CBA survey indicated that financial literacy in Australia is poor. The CBA results are consistent with the

findings of Beal and Delpachitra (2003) who contended that financial literacy among Australian university students is poor. Despite these differences, the findings of all three Australian studies, and others conducted overseas, show that there is a definite lack of financial skills and knowledge among people with certain demographic characteristics and that this problem needs to be addressed by focusing on education, evaluation and monitoring of national education programs and other initiatives, as well as the ongoing maintenance of realistic benchmarks for the continuation of measuring financial literacy.

OVERSEAS FINANCIAL LITERACY RESEARCH

(a) US research

One of the earliest studies on financial literacy in the US was a national survey conducted by Cutler (1997) who concluded that the American public was not well informed about financial matters, in particular, insurance, social security and health care. Mandell (1997), Huddleston-Casas et al (1999), Williams-Harold (1999), the National Council on Economic Education (NCEE, 2005) and the Jump$tart Coalition (2005, 2006) investigated financial literacy levels among US high school students and concluded that they demonstrated a lack of both personal financial skills and knowledge.

Studies have also shown that university students in the US have inadequate knowledge on personal finance (Chen and Volpe, 1998; Volpe, Chen and Pavlicko, 1996). Chen and Volpe (1998) conducted a financial literacy survey involving 924 college students from thirteen colleges and that the overall mean percentage of correct scores was just 52.87 percent. The survey examined literacy across four main areas, investigated the relationship between literacy and the student characteristics, and analysed the impact of literacy on student opinions and decisions. They found that those students with a non-business major and who were female, in a lower class rank, under the age of 30 and with little work experience had lower levels of knowledge. The study indicated that these students with less knowledge were more likely to hold wrong opinions and make incorrect decisions.

Chen and Volpe (1998) used analysis of variance techniques to demonstrate the variation in the levels of financial literacy among subgroups of students. In addition, logistics regression models were used to examine the financial literacy levels of students across different demographic characteristics. This method of analysis was adopted by other researchers, including Beal and Delpachitra (2003). Joo and Garman (1998) investigated the relationship between personal financial wellness and worker job productivity and found that personal financial wellness affects worker job productivity which suggests that the potential effects of workplace financial education are positive for both workers and employers. A recent study on the financial literacy of US workers found that they too, had inadequate financial skills and knowledge (Chen and Volpe, 2005). The results showed that participants ranked all of the surveyed personal finance topics as important and that they believed that employees did not have adequate knowledge about these topics. Retirement planning was ranked as being the most important topic, followed by personal finance basics, insurance, company benefit plans, taxes, investments and estate planning. Results of the survey also showed that

respondents believed that outsourcing to outside financial planners was the most effective approach to educating employees on personal finance.

Chen and Volpe (2005) asserted that importance of personal financial literacy in workplace results because of the national debate about social security reform, with the President's call to allow workers to invest in stock and bond funds in their private accounts representing a fundamental change in the social security system. Chen and Volpe argued that for employees to be 'better off', they must be financially knowledgeable in order to make informed investment decisions and take advantage of investment opportunities.

(b) UK research

Schagen and Lines (1996) conducted a financial literacy survey of the general population but with a particular focus on four groups: young people in work or training, students in higher education living away from home, single parents and families living in subsidised housing. The survey results indicated that most participants were confident in their financial dealings. The notable exceptions were single parents and students, which is particularly significant in the light of the rising debt levels of university students in the UK (Graduate Prospects, 2005).

The Adult Financial Literacy Advisory Group (AdFLAG) undertook a study to determine "how to promote better access to financial education to young people and adults" (AdFLAG, 2000, p. 10). They concluded that the need for financial literacy would continue to grow because individuals were expected to become more self-reliant. Added to this were the difficulties arising from changing work patterns, an ageing population, less government involvement and increasingly complex financial products. AdFLAG recommended that short term financial literacy education should be built around education, employment, housing, financial services and communication, with particular focus on needy population sectors such as older people, young people, sole parents, ethnic minorities, people with disabilities and people living in social housing.

GAPS IN THE FINANCIAL LITERACY RESEARCH

Studies of financial literacy targeting university students have shown that, in general, students with a business major are more financially literate than other students. However, no attempt has been made to track financial knowledge and skills as students move through to the completion of their studies. Furthermore, no attempt has been made to compare financial literacy levels of students from different disciplines. All studies conducted so far simply use a dichotomous variable to represent major area of study, but it may be valuable to examine exactly what students are studying and to make comparisons against several disciplines and years of study.

Financial literacy studies focusing on general populations show that people with higher levels of education generally have higher levels of financial literacy, although there has been no information about the type of educational attainment, the education institution or the level of performance. Several financial characteristics have been included in most studies, although little details are known about their structure and complexity and whether this contributes differently to financial literacy acquired over time. A number

of studies revealed that personal financial skills and knowledge are acquired mostly through 'trial and error', hence it could be that extensive details of financial experience and characteristics influence financial literacy levels and would prove to be important covariates in modelling financial literacy among general populations.

Furthermore, there has been no attempt in the current research to explicitly link financial literacy with financial behaviour. It is possible that certain aspects of financial literacy are more or less significant in an economic sense in determining good or bad financial behaviour, and consequently, high or low levels of financial success and sustainability of such success. It would be useful to determine specific components of financial literacy, that when combined with certain demographic characteristics, have maximal influence on the level of financial success.

Studies have attempted to reveal the main sources of financial knowledge, although details of obtaining such information have been overlooked. For example, a respondent may indicate that their main source of financial knowledge is school, but it is likely that financial knowledge is gained from many other significant sources, both direct and indirect.

In general, studies have shown that individuals with a higher level of education have higher levels of financial literacy; although all studies conducted specifically targeting university students have actually revealed that these students have low levels of financial literacy. For example, Beal and Delpachitra (2003) conducted the first and only study in Australia targeting first-year university students, and found that financial literacy was poor. Similar results were found in the US (Chen and Volpe, 1998) and the UK (Schagen and Lines, 1996) indicating that while financial literacy was low across the entire population, higher educated individuals were expected to have better financial skills and knowledge than those who were less educated. These findings raise some concern about the actual measurement of financial literacy. Although definitions of financial literacy appear to be consistent and agreeable across all nations, little focus has been given to implementing congruency in the actual measurement of financial literacy. Further research and testing is needed to determine more realistic benchmarks for the ongoing measurement of financial literacy. This will also help to determine the validity of implementing educational strategies in order to improve financial literacy in schools, universities, colleges and workplaces.

FUTURE RESEARCH OPPORTUNITIES

Since the importance of having both personal financial literacy skills and knowledge is expected to grow (RMR, 2003), financial literacy will continue to be a prominent research topic both in Australia and overseas and it is predicted that the focus will lean towards the implementation and evaluation of strategies to improve the financial literacy levels of certain cohorts of populations where a lack of financial knowledge and skill has been identified by previous research.

Although the above studies have identified segments of the population that have poor financial literacy, there are significant limitations, suggesting further areas of research. All the studies showed that individuals with higher education levels, or those students

with business majors as opposed to other majors, generally have higher levels of financial literacy. However, no study investigated or make comparisons between the educational details of individuals such as major areas of study, current year of study or performance, nor has any attempt being made to make comparisons between students from different educational institutions. One area of research could then focus on gathering detailed information on higher education courses studied, make comparisons between students across different years of study and also make comparisons between different educational institutions, which could identify any institution that has superior methods of delivering financial education to its students.

Because financial literacy has become increasingly important for the economic wellbeing of the nation's future (CBF, 2004b), it is important that it can be explicitly linked with financial behaviour, and hence financial success and sustainability. No financial literacy study has yet achieved this. Another area of research could then focus on the components of financial literacy and determine which are the most and least critical to financial success and sustainability.

Several studies revealed that personal financial skills and knowledge are acquired mostly through 'trial and error', but no research to date has actually attempted to investigate what types of financial experiences and characteristics have the most influence on an individual's personal financial literacy or competence. Hence another area of research could focus on gathering extensive details of financial experience and characteristics, which may prove to be important influential variables in modelling financial literacy among general populations.

Finally, further research could focus on the actual measurement of financial literacy. Extensive research and testing is needed to determine consistency and more realistic benchmarks for the ongoing measurement of financial literacy.

REFERENCES

Abetz, E., 2005, *Super Choices: Think About Your Future*, Australian Securities and Investment Commission (ASIC), Canberra, April 2005.

Adult Financial Literacy Advisory Group (AdFLAG), 2000, *Report to the Secretary of State for Education and Employment* [online], Department of Education and Skills, London, available: http://www.dfes.gov.uk/adflag/ [accessed 10 September 2005].

Beal, D.J. and Delpachitra, S.B., 2003, "Financial literacy among Australian university students", *Economic Papers*, 22(1), 65-78,

Chen, H. and Volpe, R.P, 1998, "An Analysis of Personal Financial Literacy among College Students," *Financial Services Review*, Vol. 7, No. 2, pp. 107-128

Chen, H. and Volpe, R.P., 2005, "Financial Literacy, Education, and Services in the Workplace", *B>Quest (Business Quest): A Journal of Applied Topics in Business and Economics* [Online], [Accessed: 2 February 2006], available: http://www.westga.edu/~bquest/2005/workplace.pdf.

Cleek, M.G. and Pearson, T.A., 1985, "Perceived Causes of Divorce: An Analysis of Interrelationships", *Journal of Marriage and the Family*, Vol. 47, No. 1, pp. 179-183.

Commonwealth Bank Foundation (CBF), 2004a, *Australians and Financial Literacy*, Commonwealth Bank Foundation, Sydney.

Commonwealth Bank Foundation (CBF), 2004b, I*mproving Financial Literacy in Australia: Benefits for the Individual and the Nation*, Research Report, Commonwealth Bank Foundation, Sydney.

Consumer and Financial Literacy Taskforce (CFLT), 2004, *Australian Consumers and Money* [Online], Commonwealth of Australia, available: http://www.cfltaskforce.treasury.gov.au/content/discussion.asp?NavID=4 [accessed 11 November 2005].

Cutler, N.E., 1997, "The False Alarms and Blaring Sirens of Financial Literacy: Middle-Agers' Knowledge of Retirement Income, Health Finance and Long-Term Care", *Generations*, Vol. 21, No. 2, pp. 34-40.

Financial Literacy Foundation (FLF), 2005a, *About the Foundation* [online], available: http://www.understandingmoney.gov.au/about/about.asp [accessed 7 April 2006],

Graduate Prospects, 2005, The Latest on Student Finances [online], available: http://www.prospects.ac.uk/cms/ShowPage/Home_page/Labour_market_information/Graduate_Market_Trends/The_latest_on_student_finances__Spring_05_/p!egipjbL;$3F6T$10 [accessed 10 April 2006].

Huddleston-Casas, C.A., Danes, S.M. and Boyce, L.M., 1999, "Impact Evaluation of a Financial Literacy Program: Evidence for Needed Educational Policy Changes", *Consumer Interests Annual*, Vol. 45, pp. 109-114.

Joo, S. and Garman, E.T., 1998, "The potential effects of workplace financial education based on the relationship between personal financial wellness and worker job productivity", *Personal Finances and Worker Productivity*, Vol. 2, No. 1, pp. 163-173.

Jump$tart Coalition, 2005, *Making the Case for Financial Literacy* [online], available: http://www.jumpstart.org/download.cfm [accessed: 18 October 2005]

Jump$tart Coalition, 2006, *Financial Literacy Shows Slight Improvement Among Nation's High School Students* [online], Press Release, 5 April 2006, available: http://www.jumpstart.org/fileuptemp/2006GeneralReleaseFinal%202.doc [accessed 10 April 2006].

Kinnunen, U. and Pulkkinen, L., 1998, "Linking Economic Stress to Marital Quality among Finnish Marital Couples", *Journal of Family Issues*, Vol. 19, No. 6, pp. 705-724.

Mandell, L., 1997,. "Personal financial survey of high school seniors", *Jump Start Coalition for Personal Financial Literacy*, March/April. Washington, D.C.

Morton, H. 2005, "Financial Literacy: A Primer for Policy Makers", National Conference of State Legislatures, Denver, Colorado.

National Council on Economic Education (NCEE), 2005, *Survey of the States: Economic and Personal Finance Education in our Nation's Schools in 2004*, National Council on Economic Education, March 2005, New York.

Noctor, M., Stoney, S. and Stradling, R., 1992, *Financial Literacy: A Discussion of Concepts and Competences of Financial Literacy and Opportunities for its Introduction into Young People's Learning*, Report prepared for the National Westminster Bank, National Foundation for Education Research, London.

Raven, F., 2005, *Financial Literacy: A Basic Skill for Social Mobility* [online], Digital Divide Network, 25 May, [accessed 18 October 2005], available: http://www.digitaldividenetwork.org/articles/view.php?ArticleID=420.

Ray Morgan Research (RMR), 2003, *ANZ Survey of Adult Financial Literacy in Australia: Final Report, May 2003*. Melbourne: Ray Morgan Research.

Reserve Bank of Australia (RBA), 2005, *Financial Stability Review*, 22 September 2005.

Schagen, S. and Lines, A., 1996, *Financial Literacy in Adult Life: A Report to the NatWest Group Charitable Trust*, Slough, Berkshire: National Foundation for Educational Research.

Volpe, R.P., Chen, H. and Pavlicko, J.J., 1996, "Personal Investment Literacy Among College Students: A Survey", *Financial Practice and Education*, Vol. 6, No. 2, pp. 86-94.

Williams-Harold, B., 1999, "Saving is Fundamental", *Black Enterprise*, Vol. 29, p. 30.

Wolcott, I. and Hughes, J, 1999, *Towards understanding the reasons for divorce,* Working paper No. 20, Australian Institute of Family Services, Melbourne.

Worthington, A.C., 2004, "The Distribution of Financial Literacy in Australia", *Discussion Papers in Economics, Finance and International Competitiveness*, Queensland University of Technology, Brisbane, Discussion Paper 185, November.

Yeung, W.J. and Hofferth, S.L., 1998, "Family Adaptions to Income and Job Loss in the U.S.", *Journal of Family and Economic Issues*, Vol. 19, No. 3, pp. 255-283.