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Financial literacy among university students: An Australian case study

A thesis submitted in partial fulfilment of the requirements for the award of
the degree:

MASTER OF FINANCE – RESEARCH

From the

UNIVERSITY OF WOLLONGONG

by

SONIA BIRD

Bachelor of Mathematics with a double major in Applied Statistics and
Finance (University of Wollongong)

School of Accounting and Finance

2008

Certificate

I, Sonia Bird, certify that this thesis has not been submitted previously as part of the requirements of another degree and that it is the product of my own independent research.

Dedication

For Benjamin

I would not have achieved this without your eternal love, support and
encouragement.

Acknowledgement

I am sincerely grateful for the love, patience, understanding and encouragement of my husband Benjamin and my parents, Lavinia and Jim. Without their support, I would not be the person I am today and this thesis would not have been possible.

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Abstract

Financial literacy has been defined by the National Foundation for Education Research as ‘the ability to make informed judgments and to take effective decisions regarding the use and management of money’ (Noctor, Stoney and Stradling, 1992, p. 4). This study investigates the financial literacy levels of Australian university students, using students studying at the University of Wollongong (UOW) as a case study.

An online financial literacy survey was distributed to all UOW students and was designed to collect extensive details regarding study characteristics, demographic characteristics, attitudes and perceptions, as well as testing knowledge and skills across a range of specific areas of financial literacy. In addition, the survey enabled a comparison between student’s own perceptions of their knowledge and/or skills and their actual demonstrated level of knowledge and/or skills.

From the survey results, it is concluded that while Australian university students have a satisfactory level of general financial literacy, there are particular areas where they scored low which need to be addressed. It is also found that low financial literacy is associated with students with certain demographic characteristics.

This research is extensive in both length and scope and attempted to fill in gaps in the current literature. It provides a valuable contribution to ongoing financial literacy research which can only continue to grow as a result of the increasing importance of personal financial literacy skills and knowledge in modern societies.

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Chapter 1

Introduction

Financial literacy was defined in the United Kingdom (UK) by the National Foundation for Education Research as 'the ability to make informed judgments and to take effective decisions regarding the use and management of money' (Noctor, Stoney and Stradling, 1992, p. 4). Since then, financial literacy has become an increasingly significant research topic, particularly in recent years, both in Australia and many other countries around the world. This is evident from the many number of financial literacy studies conducted as well as the implementation of financial literacy educational programs and the increasing availability of financial information.

Financial literacy is increasingly important as it has become essential that consumers acquire the skills to be able to survive in modern society and cope with the increasing diversity and complexity of financial products and services available. It has been suggested that having financial skills has become more important over the last decade as '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). Additionally, credit cards have become easier to obtain and are generally accepted as a means of payment for most goods and services. This, together with easier access to personal loans, home and investment 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. Superannuation and the importance of planning for retirement has also highlighted

the importance of financial literacy skills as Governments world-wide encourage their citizens to be more responsible for their retirement incomes in attempt to move away from public pensions.

It is expected that the importance of having both personal financial literacy skills and knowledge will continue to grow. Both Roy Morgan and AC Nielsen's research for the ANZ bank stated that 'trends in work patterns, demography and service delivery suggest that it will become even more important in the years ahead' (RMR, 2003, p. 2; ACN, 2005, p.6). Financial literacy will continue to be a prominent research topic both in Australia and other countries as its' importance continues to grow.

There have been several financial literacy studies conducted around the world, most of which have been in the United States. There have only been three studies conducted in Australia, two of them focused on the general Australian population (RMR, 2003 and CBF, 2004) and one focused on university students (Beal and Delpachitra, 2003). Several gaps have been identified in these studies and one of the main purposes of this research is to try to fill in some of these gaps and to add to the current Australian literature by providing more insight into the financial literacy levels of Australian university students. In order to do this, students studying at the University of Wollongong (UOW) were chosen to form a case study of Australian university students and a financial literacy survey was administered to all UOW students during September 2006. The survey was extensive and collected a series of demographic characteristics, students' perceptions of their financial knowledge and skills as well as their attitudes towards several financial concepts. In addition, the survey tested students' financial knowledge and skills as they relate to four main categories of financial literacy by asking a series of multiple choice questions.

This thesis presents the results of the survey and is structured in the following way. First, the definition of financial literacy and why it has become so important is discussed in more detail in sections 2.1.1 and 2.1.2. This is followed by a literature review of financial literacy studies conducted in the United States and the United Kingdom (section 2.2) and Australia (section 2.3), including a comparison of the studies and an overview of what has been done to address financial literacy (section 2.4) . This leads into the development of the research questions (section 2.5) and the methodology used to answer them (chapter 3). Chapter 4 then discusses the survey response in detail, including the overall response, non-responses, the profile of the participants and how well they represented the UOW student population. The results from the survey are then used to answer the research questions (chapters 5 and 6) and this is followed by a conclusion and recommendations for further study (chapter 7).

Chapter 2

Literature Review

2.1 Introduction

This chapter discusses the definition of financial literacy as well as the modifications of the definition which have been used in some of the major studies previously conducted. The next section discusses the growing importance of financial literacy and is followed by a critical review of various financial literacy studies conducted in the United Kingdom (UK), the United States (US) and Australia. What has been done to address financial literacy is then examined which leads into the development of the research questions.

2.1.1 The definition of financial literacy

As mentioned above, financial literacy was defined in the UK by the National Foundation for Education Research as ‘the ability to make informed judgments and to take effective decisions regarding the use and management of money’ (Noctor, Stoney and Stradling, 1992, p. 4). Many researchers of financial literacy have used this definition and some have added to it in order to reveal and incorporate a more detailed description of the components underlying the concept of what it means to be financially literate.

For example, the Commonwealth Bank of Australia’s (CBA) definition of financial literacy included ‘the ability to balance a bank account, prepare budgets, save for the future and learn strategies to manage or avoid debt’ (CBF, 2004, p. 2). The CBA also

stated that being financially literate requires being able to manage personal finances in a variety of changing contexts in life and society. It also included acquiring understandings, developing skills and exploring values in varying contexts about the impacts of ones financial decisions on self, others and the environment.

The ANZ Bank's research on adult financial literacy in Australia described the concepts of financial literacy in the following way: 'Financial literacy is about 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; ACN, 2005, p.6)

2.1.2 The growing importance of financial literacy

Financial literacy skills have become essential for Australians to be able to survive in modern society and cope with the increasing diversity and complexity of financial products and services available. Beal and Delpachitra explained that having financial skills has become more important over the last decade as '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). In addition, credit cards have become easier to obtain and are generally accepted as a means of payment for most goods and services. This, 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. A report from the Reserve Bank of Australia confirmed this rapid rise in debt as the ratio of household debt to disposable income in June 1990 was about 1:2 or

46% but, by June 1995 this ratio had risen to around 1:1.5 or 68% and by June 2005 this ratio has further risen to 1.5:1 or 150% (RBA, 2005, p. 10-11). Moreover, the development and marketing of financial products and services has grown rapidly and consumers have been encouraged to invest and purchase by means of the internet as well as to pay bills, make loan repayments and even apply for credit on line.

Another major issue that has highlighted the prominence of financial literacy skills is superannuation and the importance of planning for retirement. Beal and Delpachitra stated that '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). As a consequence, this shows that people today need to be more knowledgeable about superannuation funds and how they operate, and need to be aware of their employer's responsibility to contribute to their chosen superannuation fund, as well as their own responsibility to contribute, and the many options that are available to them. This is particularly so in the case of young people, as what they do now regarding superannuation will have a significant affect on their life well ahead (upon retirement). It is also important for young people to 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, 2004, 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). Results from an American survey on divorce showed that 32.9% of women and 28.7% of men indicated that financial problems were one of the main reasons for their divorce (Cleek and Pearson, 1985). Thus, it is possible that financial struggles over a long period of time can seriously undermine the foundations of a loving relationship. Managing money is often one of the things married couples struggle with, and as a result, levels of household debt are often raised to the point where couples wonder if they will ever be able to get out from under the pressure. In Australia, a report from the Australian Institute of Family Studies discusses finances, among other reasons, as a cause for divorce and stated that it is possible that couples may not recognise that concerns about income or insecure employment may underline some of the stresses and tensions that contribute to a relationship breakdown (Wolcott and Hughes, 1999). 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).

It is expected that the importance of having both personal financial literacy skills and knowledge will continue to grow. Both Roy Morgan and AC Nielsen's research for the ANZ bank stated that 'trends in work patterns, demography and service delivery suggest that it will become even more important in the years ahead' (RMR, 2003, p. 2; ACN, 2005, p.6). Financial literacy will continue to be a prominent research topic both in Australia and other countries 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, 2005; RMR, 2003). Several

researchers have identified that the abundance 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, 2004; RMR, 2003).

2.2 International Financial Literacy Studies

The definition of financial literacy began in the UK from the National Foundation for Education Research and was initially adopted across the UK with a view to international consistency (Noctor, Stoney and Stradling, 1992). Since then, financial literacy has become a prominent research topic in other countries, especially in the US and Australia, where this definition has been widely accepted and adopted by many studies.

2.2.1 UK Studies

Although financial literacy was defined in the UK by the National Foundation for Education Research, there have been few studies conducted that have actually attempted to investigate or measure financial literacy in the UK. The two prominent studies were Schagen and Lines (1996) and AdFLAG (2000).

2.2.1.1 Schagen and Lines (1996)

Schagen and Lines (1996) conducted a financial literacy survey of the general population on behalf of the NatWest Group Charitable Trust, but with a particular focus on four groups: young people in work or training (aged 16 to 21 years), students in higher education living away from home, single parents and families

living in subsidised housing. The survey questions focused on the respondents' attitudes to saving and borrowing, their use of financial institutions, money management in families and their confidence in dealing with financial issues. The survey also included questions which tested respondents' understanding and knowledge of financial markets, financial instruments, financial decision making and problem solving, and financial planning. The results indicated that, in general, most participants were confident in their financial dealings. The notable exceptions were single parents, who were less committed to saving, and students, who were the least confident group in dealing with financial matters, with very few keeping any financial records. This lack of confidence evidenced by students becomes particularly significant in the light of the rising debt levels of university students in the UK (Graduate Prospects, 2005).

2.2.1.2 AdFLAG (2000)

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) by collating relevant research, investigating areas of good practice, consulting with a variety of organisations across the public, private and voluntary sectors, and visiting organisations active in providing financial education programs to socially excluded people.

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. To this end,

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.

2.2.1.3 Comparison of the UK studies

Both of the above studies recognised that there are certain segments of the population in the UK that lack financial literacy. Schagen and Lines found that single parents and students were the least confident in their financial dealings and the AdFLAG study found that older and younger people, sole parents, ethnic minorities, people with disabilities and people living in social housing were particularly needy in terms of financial literacy. Hence, financial literacy education should focus on these particular groups and AdFLAG also recommended that the focus of such education be on employment, housing, financial services and communication.

2.2.2 US Studies

One of the first studies on financial literacy in the US was a national survey conducted by Cutler (1997), who concluded that the American public is not well informed about financial matters, particularly about insurance, social security and health care. Mandell (1997), Huddleston-Casas, Danes and Boyce (1999), Williams-Harold (1999) and the Jump\$tart Coalition (2005) all investigated financial literacy levels among US high school students and found a lack of both personal financial skills and knowledge among US high school students. The recently released results of the 2006 Jump\$tart survey revealed that there was almost no improvement in the

number of survey questions students answered correctly (around 52% in both 2004 and 2006), and growth has been extremely slow (Jump\$tart Coalition, 2006). The remainder of this section discusses the major US studies.

2.2.2.1 Moore (2003)

The Washington State Department of Financial Institutions (DFI) established and commissioned the Social and Economic Sciences Research Centre (SESRC) at the Washington State University to conduct a financial literacy study to investigate financial knowledge, behaviour, attitudes and experiences. The study focused on two groups: consumers who had borrowed with a lender that recently settled in a large predatory lending case (labelled the victim pool); and the general population (labelled the general pool) (Moore, 2003).

A telephone survey was conducted on a total of 1,423 adults (891 from the victim pool and 523 from the general pool). In addition to the survey, 31 participants from the victim pool were randomly chosen to take part in four focus group sessions. These participants had actually filed complaints with DFI (or the Office of Attorney General) regarding their recent mortgage transactions and these sessions were formed to allow a more in-depth understanding of these individuals' mortgage experiences, as well as to support the survey findings.

The results showed statistical significant differences between the two population pools and, in general, results were less positive for respondents in the victim pool compared to those in the general pool. In particular, the victim pool had less understanding of specific financial terms that were thought to have a critical impact

on decisions regarding loans. Respondents in the victim pool were less likely to invest in stocks, have long-term savings and financial plans, spread their investments, or invest in retirement plans. These respondents also showed higher tendencies towards risky behaviour. For example, 66% indicated taking advances on their credit cards and 22% indicated using payday lenders¹ (compared to 34% and 9% of respondents in the general pool respectively).

Respondents in the general pool were 1.6 times more likely to report paying credit card balances in full every month than respondents in the victim pool. They were also more likely to successfully obtain credit, with only 24% of respondents indicating that they had been turned down for credit compared to 57% of respondents in the victim pool.

It was recognised that financial literacy was a concern amongst Washington State residents and the main purpose of the study was to provide DFI with the information needed for them to develop an effective financial literacy program to educate, inform and assist consumers in making financial decisions. Although the results indicated that consumers would benefit from such a program, especially those in the victim pool, the major challenge identified was to motivate participation (Moore, 2003).

¹ A payday loan is commonly referred to as a paycheck, payday or cash advance and is a small, short-term loan that is intended to cover a borrower's expenses until their next payday. Typical loans are between \$100 and \$1500, on a two-week term and have high interest rates.

2.2.2.2 Hilgert, Hogarth and Beverly (2003)

Hilgert, Hogarth and Beverly (2003) used results from the University of Michigan's monthly Surveys of Consumers (conducted in November and December 2001) to explore the connection between financial knowledge and behaviours. A financial practice index was calculated for each of the four financial management activities: cash-flow management; credit management; saving; and investment. Each index comprised three categories, low, medium and high, and survey respondents were placed into these categories based on their participation in each activity.

In addition, a financial knowledge score was calculated across five sections: credit management; saving; investment; mortgages; and other. The average financial knowledge score was then examined by the financial practice index and index level. Differences were revealed between financial practice indexes and financial knowledge scores, indicating that there is a relationship between behaviour (as measured by the index) and knowledge (as measured by the score). In general, medium to high index levels were associated with higher scores across most sections of knowledge.

2.2.2.3 Joo and Garman (1998)

Joo and Garman (1998) developed a questionnaire in order to investigate the relationship between personal financial wellness and worker job productivity. A mail survey of 474 white collar clerical workers was conducted and it was found that personal financial wellness affected worker job productivity and this suggested that the potential effects of workplace financial education are positive for both workers and employers.

2.2.2.4 National Council on Economic Education (2003)

The National Council on Economic Education attempted to investigate personal finance education in schools across all states by running a biennial survey, the first survey being conducted in 1998 (NCEE, 2005). Results of the 2004 survey revealed that only 34 states had standards for personal finance and only 20 of these required that these standards be implemented. In addition, only six states required that students complete a course that covers personal finance before graduating from high school and only eight states actually tested students' personal finance knowledge. From the results of this survey, it was concluded that the vast majority of young people in the US were not being taught about personal finance in school. Similar conclusions were drawn from the recently released results of the 2007 survey, although there were some improvements noted, such as 40 states had standards for personal finance and 28 of these required that these standards be implemented. Seven states required that students complete a course that covers personal finance before graduating from high school and nine states actually tested students' personal finance knowledge (NCEE, 2007).

2.2.2.5 Chen and Volpe (1998)

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 survey involving 924 college students from thirteen colleges and found that personal finance skills and knowledge are inadequate, with the overall mean percentage of correct scores being just 52.9%. The survey attempted to examine the personal financial literacy of US college students across four main areas: general knowledge, savings and borrowing, insurance and investments. The study also attempted to examine the relationship between literacy

and the students' characteristics, and the impact of literacy on students' opinions and decisions. Results of the survey showed that the most poorly answered questions were those involving investments, while the best answered questions were those on general knowledge. The demographic variables that were used in the analysis were academic discipline (business or other), class rank, gender, race, nationality, years of work experience, age and income. It was found that those students with a non-business major and who were female, in a lower class rank, under the age of 30 and had little work experience have lower levels of knowledge. Those students with less knowledge were more likely to hold wrong opinions and make incorrect decisions.

Chen and Volpe (1998) used analysis of variance (ANOVA) techniques to show the variation in the levels of financial literacy among subgroups of students. In addition, logistic regression models were used to examine the financial literacy levels of students across different demographic characteristics. The participants were classified into two subgroups using the median percentage of correct answers. Students with scores higher than the median were classified as having relatively more knowledge and students with scores equal to or below the median were classified as having relatively less knowledge. This dichotomous variable was used as the dependent variable in the logistic model and the independent variables were represented by the demographic characteristic variables. This method of analysis was adopted by other researchers, including Beal and Delpachitra (2003).

2.2.2.6 Chen and Volpe (2005)

A recent study on the financial literacy of US workers found that they, too, had inadequate financial skills and knowledge (Chen and Volpe, 2005). A survey of 212

company human resource and benefits administrators was conducted, with a total of 68 questions focusing on the following:

- the importance of various personal finance topics;
- the level of knowledge possessed by employees;
- if inadequate personal finance knowledge leads to a decline in productivity;
- the use of a financial literacy test to screen new hires; and
- the most effective approach to improve employee's financial literacy in the workplace.

Company human resource and benefit administrators were selected because they are considered to be the most knowledgeable professionals about personal finance issues in the workplace.

The results of the survey showed that participants ranked all of the surveyed personal finance topics as important and that they believed that employees do 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. Respondents identified that the least knowledgeable areas among employees are financial planning basics and retirement planning.

More than 55% of respondents who answered a question about whether inadequate personal finance knowledge leads to a decline in productivity believed that this is the case, although few respondents recommended using a financial literacy test to screen

new hires. Results of the survey also showed that respondents believed that outsourcing to outside financial planners is the most effective approach to educating employees on personal finance.

Chen and Volpe (2005) asserted that the importance of personal financial literacy in the workplace results from 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 need to be financially knowledgeable in order to make informed investment decisions and to take advantage of the investment opportunities now available to them (Chen and Volpe, 2005, p. 12).

2.2.2.7 Lusardi and Mitchell (2006)

Lusardi and Mitchell (2006) developed a module on retirement planning and financial literacy as part of the 2004 Health and Retirement Study. The module aimed to explore the hypothesis that poor planning may be a primary result of financial illiteracy. In order to do this, the module measured how workers make their saving decisions, how they collect the information for making these decisions, and whether they possess the financial literacy needed to make these decisions.

A total of 1,269 adults aged over 50 years responded to the module and the results showed that there is a strong relationship between financial knowledge and planning in that those with financial knowledge were more likely to plan and to succeed in their planning. They found that, overall, financial literacy is poor among older

Americans and certain groups are particularly at risk. These groups included women, minorities, and those without a college degree. In addition, less than 20% of respondents believed that they engaged in successful retirement planning. These results highlighted the increasing concern regarding citizens becoming more and more responsible for securing their own retirement incomes and showed that financial literacy plays an important role in successful retirement planning.

2.2.2.8 Comparison of the US studies

All of the studies previously conducted in the US generally indicated that financial literacy is poor among the US population. Cutler (1997) concluded that the American public were particularly ill informed about insurance, social security and health care. Moore (2003) found that consumers who had borrowed from a lender that recently settled in a large predatory lending case had less financial knowledge than the general population. These results, together with those of Hilgert, Hogarth and Beverly (2003), highlighted the connections between financial knowledge and behaviours and experiences. In addition, Lusardi and Mitchell (2006) concluded that people with little financial knowledge are less likely to plan and to succeed in their planning. Both Joo and Garman (1998) and Chen and Volpe (2005) found that US employees would benefit from workplace financial education.

Results from US studies showed that there is also a poor level of financial literacy among students, both high school and college. Both the NCEE biennial surveys and the Jump\$tart Coalition surveys indicated that financial literacy is poor among US high school students and that there is a lack of financial literacy education in schools. Mandell (1997), Huddleston-Casas, Danes and Boyce (1999) and Williams-Harold

(1999) also concluded that financial literacy is poor among US high school students. US college students were also found to have poor financial knowledge, with Chen and Volpe (1998) and Volpe, Chen and Pavlicko (1996) concluding that financial literacy is poor among US college students.

These US studies showed that there is a definite lack of financial skills and knowledge among the American public, including children, students, adults and older people. This is a major concern and highlights the need for financial literacy education customised to suit Americans of all ages.

2.3 Australian Financial Literacy Studies

There are three published Australian studies on financial literacy. One study focused on financial literacy among a sample of first year university students from the University of Southern Queensland (Beal and Delpachitra, 2003). The other two have been comprehensive studies targeting financial literacy in the general population and were conducted by major banks; the first being the *ANZ Survey of Adult Financial Literacy in Australia* (RMR, 2003) and the second being the Commonwealth Bank's survey of financial literacy – *Improving Financial Literacy in Australia: Benefits for the Individual and the Nation* (CBF, 2004).

2.3.1 Beal and Delpachitra (2003)

The first Australian financial literacy survey was conducted in 2002 by Beal and Delpachitra (2003) on a sample of students from the University of Southern Queensland. The survey was targeted at first year students across five faculties: Arts,

Business, Education, Engineering and Surveying, and Sciences. In addition, students studying psychology as a major and some post-graduate psychology students were targeted. It was understood that many psychological problems in the community are connected with financial difficulties and so practising psychologists should have an understanding of personal finance issues, hence the interest in gaining an understanding of the levels of financial literacy among psychology students (Beal and Delpachitra, 2003; Fogarty and Beal, 2004).

The survey was distributed to students in paper form and a total of 837 forms were completed, resulting in 789 complete data sets. Five main skill areas were tested: basic concepts, markets and instruments of the financial markets, planning, analysis and decision making, and insurance.

Five technical four-option multiple choice questions were asked for each of the five main skill areas, giving a total of twenty five technical questions. In addition, there were nine questions which asked for demographic information and a tenth question investigated risk tolerance using four statements by means of five-point Likert scales.

The methodology used to analyse the survey responses was very similar to that of Chen and Volpe (1998), where responses were marked and the proportion of correct responses for each question and each main skill area calculated. The major analytical method used was logistic regression modelling, with a total of ten independent variables being used in the model. These variables were collected from the survey questions asking for demographic information and included faculty or major discipline of study, sex, type of household, age, education, occupation, employment status, workforce experience, income and risk preference. The dependent variable

used in the model was defined by classifying respondents into two groups, high achievers and low achievers. This was performed by dividing the data at the median (using the total score variable which was calculated as the number of questions answered correctly), giving two groups of almost equal numbers of respondents and this dichotomous variable was used as the dependent variable in the logistic model. The same methodology was used to analyse the responses for each of the five main skill areas.

Results for the first main area of skill, 'basic concepts', showed that the questions best answered asked about how saving is achieved, where students correctly answered in 97.1% of cases. The question that was worst answered in this area asked for the balance in a bank account where an initial \$100 had been deposited for one year at 12% simple interest versus at 1% per month compound interest, in which only 52.9% of respondents answered correctly. Another poorly answered question in this area asked for the reason for diversifying an investment portfolio, in which only 58.5% of students answered correctly. These results indicated that simple concepts in finance, such as the effect of compounding interest and the relationship between risk and return, are not well understood by university students.

Results for the second main area of skill, 'markets and instruments of the financial markets', showed that the question best answered was one that asked about the nature of the liability undertaken when guaranteeing a friend's loan. This question was correctly answered by 87.5% of respondents. The majority of the remaining questions for this main area of skill were poorly answered. Only 44.1% of students understood the role of the cash rate in the economy and only 36.7% of students were able to correctly identify which Australian asset class has given the best returns over

the last two decades. These results strongly indicated that many students are not aware of common financial information that is widely discussed on a regular basis by every news medium. This is of concern as the Australian economy is vastly influenced by this information, hence it is important for Australians to be up-to-date and have a good understanding of such information.

Results for the third main area of skill, 'financial planning', showed that the best answered questions asked about the advantages of keeping a daily track of expenditure (91.1% of students answered correctly) and about the awareness of bank statements allowing them to keep abreast of interest rates and bank charges (85% of students answered correctly). The worst answered question, in which only 27.9% of students answered correctly, asked respondents to indicate the correct method of subtracting outstanding cheques from the apparent balance on a bank statement to achieve the actual balance. These results indicate that the majority of participating students have a poor understanding about the method of effecting a bank reconciliation, which is a particular cause for concern in society today, where awareness of bank fraud has become more prominent.

Results for the fourth main area of skill examined, 'analysis and decision making', showed that solving financial problems together with knowledge of insurance matters were the areas which students generally answered least well. The best answered question, where 64.5% of respondents answered correctly, involved mortgage-buster or savings offset accounts. The best method to rectify a persistent credit card debt was able to be identified correctly by 58% of respondents and only 43.1% of respondents were able to correctly solve a simple present value problem. The worst two answered questions involved an asset-rich, cash-poor person getting

funds quickly for an urgent medical procedure (36.3% correctly answered) and a calculation of the best deal on a motor vehicle in which only 33% of respondents answered correctly. These results are of high concern as they showed that many students, when faced with real-life financial situations, were lacking the knowledge and skills to be able to make the best decisions regarding individual circumstances.

The final main skill area that was examined focused on insurance and results showed that 77% of respondents were correctly able to identify the determinants of vehicle insurance premiums. Approximately 57% understood the nature of insurance excesses, but only 42% were able to identify the risks covered by compulsory third party (CTP) vehicle insurance. The worst answered questions involved flood not normally being covered by householders' policies (31.6% answered correctly) and the nature of term life insurance, in which only 21.5% of respondents were able to answer correctly. These results indicated that, while students appear to have a reasonable knowledge about vehicle insurance, many are lacking knowledge about other types of insurance, such as household and life insurance.

Analysis of the full model showed that the significant demographic variables are sex, work experience, income and risk preference. 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. An analysis of the first of the five separate models 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. Overall, it was concluded that university students in Australia were not skilled nor knowledgeable in financial

matters and that this will tend to impact negatively on their future lives through incompetent financial management (Beal and Delpachitra, 2003).

Although the survey collected information regarding faculty of study, the results were only presented by whether the student was studying 'business' or 'non-business' and the survey was quite small and only focused on first year students, it was the first Australian financial literacy survey and the results highlighted the problem of low financial literacy among university students in Australia. The survey could have been extended to include students from all disciplines and from all years. The UOW survey attempts to extend and expand on the findings of Beal and Delpachitra.

2.3.2 ANZ Bank Study (2003)

In 2003, Roy Morgan Research conducted Australia's first national survey on financial literacy on behalf of the ANZ bank (RMR, 2003). There were two components to the study: a telephone survey of 3,548 adults and an in-depth survey of 202 people which included a self-completion component and an in-depth interview of around one to one and a half hours each. The telephone survey consisted of 145 finance and 25 demographic questions. The finance questions were split into four headline categories: mathematical and standard literacy, financial understanding, financial competence and financial responsibility. It was 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. For example, if a respondent answered "no" to "do you own or use a credit card?", then they were not

asked any questions relating to credit cards. One might question the validity of such a methodology, for several reasons.

First, it is important for all consumers to have an understanding of financial products and services, even if they are not exposed directly to such products or services. Simply because people do not have or use a credit card now, is not to say that they will not require the use of one some time in the future. Indeed, the primary reason that they do not have a credit card may be because they know little about credit cards, how to apply for one or how to use one. Secondly, a potential bias could be introduced into the results of the survey. In this particular scenario, a positive bias in the results of the survey would be expected, 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 the CBA survey, where the ANZ survey showed more positive results overall resulting in the appearance of higher financial literacy levels.

A third methodological weakness was that self-rating questions were used, which again may introduce biases in the results of the survey. For example, questions such as “How well do you understand what *this* means?” were asked and the respondent was required to choose from a scale, such as ‘very well’, ‘fairly well’, ‘not very well’, ‘not at all’, and ‘can’t say’. Rather than actually testing a respondent’s understanding, the survey assessed only their perceptions of their understanding. The problem arises in the differences in perceptions between respondents: one respondent may believe that they understand something ‘very well’, when in fact another respondent

who answered 'not very well' may actually have a better understanding than the first respondent. An alternative approach to test a respondent's level of understanding is to set a benchmark for the entire sample population by using 'exam-type' or 'testing' 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 as they related to the four categories mentioned previously, rather than simply measuring skills. In addition, the chosen sample was highly representative of the Australian population, with confidence intervals of less than $\pm 2\%$ at the 95% confidence level.

To undertake the analysis, ten levels of financial literacy were used which were combined to form financial literacy quintiles, where quintile one was the lowest level of financial literacy and quintile five was the highest. Correlations, averages and percentages were also used to summarise results. The survey results showed that Australians overall are a financially literate society, but that certain groups have particular challenges that need to be addressed. Those groups were identified as those having a lower level of education (year 10 or less), those not working or in unskilled work, those with lower incomes (household income under \$20,000), those with lower savings levels (under \$5,000), single people and people at both extremes of the age profile (18-24 yr olds and those 70 yrs and over). In contrast, respondents in the highest financial literacy quintile were males, people with tertiary degrees, professionals and business owners, couples with no children and people aged between 45 and 59 years. Thus, despite respondents only being tested on the issues relevant to their current circumstances, a strong correlation was found between financial literacy levels and socio-economic status.

The overall findings of the survey showed that 80% of respondents felt 'well informed' when making financial decisions. All respondents felt that they knew how to use cash, and almost 90% felt that they knew how to use other methods of payment such as ATMs, cheques, EFTPOS and credit cards. Ninety-eight percent appeared to understand that prioritising different needs is required to balance income and expenditure within financial capacity and most people could suggest a range of appropriate strategies for dealing with a sudden decrease in income. In addition, 97% of respondents indicated that they were aware that their employers were required to make superannuation contributions on their behalf, while 91% understood that they can make additional superannuation contributions. Generally, consumers also seemed to have a good appreciation of some of their responsibilities, with 91% understanding the importance of making honest and complete disclosure of their needs and circumstances on financial applications, and 89% appreciating the importance of PIN security and the consequences of breaching it.

Worthington's extension

The analysis of the ANZ survey data was extended by Worthington (2004), who attempted to build a statistical model to predict financial literacy on the basis of individual demographic, socioeconomic and financial characteristics. This was performed using 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.

According to this consumer behaviour model, attempts to model the distribution of financial literacy should take into account the different demographic, socioeconomic and financial backgrounds of consumers and thus two sets of characteristics were specified as explanatory variables in the ordered logit regression model: demographic/socioeconomic and financial. The overall findings of the analysis indicated that female, non-English speaking, unemployed and non-working respondents, farm workers and persons whose highest level of educational attainment is year 10, year 12 or technical education had a greater likelihood of a low level of financial literacy.

Marginal effects were also calculated and showed that the demographic characteristics having the greatest influence on the highest financial literacy quintile were being professional, a business owner, or an executive. In contrast, the demographic characteristics that had the greatest influence on the lowest financial literacy quintile were being unemployed, female, or having a highest level of education of year 10. Although the models specified satisfactorily predict financial literacy outcomes, they were most accurate at predicting the very lowest and the very highest levels of financial literacy (that is, predicting those respondents that fall into quintiles one and five).

Rather than using only descriptive statistics to examine the survey responses, Worthington used more sophisticated techniques and was able to discover particular groups who were statistically more likely to have lower levels of financial literacy and characteristics with greater influence on financial literacy. Hence focusing education towards people with particular characteristics can have a greater effect on improving financial literacy overall.

2.3.3 Commonwealth Bank Study (2004)

The CBA's survey on financial literacy was the first study that investigated the strength of any link between financial literacy and outcomes for both individuals and the Australian economy (CBF, 2004). This was achieved in three phases. The first phase was a national telephone survey of 5,000 Australians aged between 16 and 65; the second phase investigated the microeconomic effects of improving financial literacy, and the third phase investigated the macroeconomic effects of improving financial literacy.

The national telephone survey consisted of 20 multiple choice questions and averaged 18 minutes in length. The survey was designed to test each respondent's ability to make financial decisions, rather than testing knowledge of financial information. The survey also collected demographic information such as personal finances, whether the individual had ever owned a business, personal and health history, and sources of financial knowledge.

The results of the survey showed that those who were unemployed had poorer financial literacy skills. Also among this group were younger people (aged 16-20 years), males, students, people with lower levels of education, people with lower personal annual income (under \$10,000), people with lower annual household income (under \$50,000) and people who had never worked in paid employment. Participants with these demographic characteristics made up the 10% 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 was not merely a function of age or life experience.

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. This included 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% of respondents primarily learn about managing their finances through experience or 'trial and error', and a significant proportion of respondents (36%) specified financial institutions as a source of their financial knowledge.

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, 2004, p. 4). For those respondents who had the lowest levels of financial literacy, the expected probability of unemployment was 14.3%, compared to 1.7% for those who had the highest levels of financial literacy. Further, there was evidence that a modest improvement of the financial literacy of the 10% of respondents who had the lowest financial literacy scores would have resulted in these people having an average increase in annual income of \$3,204.

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, 2004, p. 3). Other anticipated macroeconomic effects of improving financial literacy includes the strengthening of national savings, a boost to both public and private consumption, and the creation of more successful small businesses.

2.3.4 Comparison of the Australian studies

If the phase one results of the CBA study are compared with those of the ANZ study, the overall results of the latter were more positive. In other words, while the ANZ survey indicated that Australians are generally financially literate with only certain groups of people lacking skills, the overall results of the CBA survey indicated that financial literacy in Australia is poor. The CBA results were consistent with the findings of Beal and Delpachitra (2003) who contended that financial literacy among Australian university students was poor. Despite these differences, the findings of all three surveys conducted in Australia, and several others conducted overseas, showed that there is a definite lack of financial skills and knowledge among people with certain demographic characteristics.

2.4 Attempts to address financial literacy

The importance of financial literacy and the need for financial education has been recognised and the UK, the US and Australia have taken on initiatives to address the issue. For example, the annual Jump\$tart Coalition surveys aim to measure and monitor the financial literacy levels of US high school students. The US government established the Financial Literacy and Education Commission (FLEC) in 2003 which aims to increase the financial literacy and education of the US population and provides information on a wide range of financial topics. Financial tools and resources are also available from the website and the FLEC also provides a free “My Money” tool kit which includes several publications on topics such as savings, investing, protecting and how to get more out of your money (FLEC, 2003).

In 2002, the UK Department for Education and Skills established the National Research and Development Centre (NRDC) for adult literacy and numeracy as part of the national strategy for improving adult literacy and numeracy skills. The NRDC is devoted to conducting research into adult literacy and numeracy in order to help improve the quality of teaching and learning across several areas, including financial literacy, through several programs, including the 'skills for life' program (NRDC, 2002).

In Australia, there have been several financial literacy programs implemented, many of which have been funded by financial institutions and Government agencies. In 2003, the Commonwealth Bank established the Commonwealth Bank Foundation with the aim of encouraging developments in financial education programs primarily targeting at young Australians. The Foundation also provides sponsorship for the GirlSavvy program, National Literacy and Numeracy Week, Nova: Science in the News, the University of Melbourne Chair of Finance, and the General Sir John Monash Awards. Some of the programs included in the Foundation are the Financial Literacy Grants Program², e-learning Grants program³, Financial Literacy Curriculum Resource⁴, Financial Literacy Assessment⁵, MoneySense⁶, financial literacy workshops and the Teacher Support Program⁷. In 2004, a total of \$700,000 worth of grants were awarded to Australian primary and secondary schools, as a direct result of the establishment of the Commonwealth Bank Foundation (CBF, 2004).

The ANZ bank has taken the lead in the development of several innovative financial literacy programs, including Saver Plus⁸, MoneyMinded⁹, Community Development Finance¹⁰ and MoneyBusiness¹¹.

The Association of Building Societies and Credit Union's (ABACUS) website¹² offers a range of free Consumer Education Booklets to help provide consumers with a basic understanding on a range of topical subjects from budgeting to credit cards to buying property. H&R Block¹² provide an interview service for their clients, offering financial education and advice, regarding taxation, retirement, saving for college and home ownership. They also provide an income tax course designed to teach individuals how to do their own tax returns².

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2. 100 grants are made available to Government, independent, and catholic schools across all states and territories to help them implement creative, engaging and sustainable financial literacy education programs for their students.
 3. This Grants program awards 70 grants worth \$5,000 each to primary schools across Australia, for online learning programs to enhance the literacy and numeracy skills of students.
 4. This Resource was developed in collaboration with a Steering Committee consisting of representatives from education departments, authorities and teaching associations from across Australia. The online resource features a cross-curricula focus which supports financial literacy education in years 7 to 10 and is available to all schools.
 5. The Financial Literacy Assessment is an annual financial literacy assessment for secondary students in years 9 and 10, providing teachers with a tool to assess and develop student skills and to assist students in identifying their individual financial literacy strengths and weaknesses.
 6. This program consists of 1-day workshops targeting young people aged 16 to 25 years and takes them through a series of modules and activities, learning about saving, budgeting, investing, managing debt, being entrepreneurial and making informed financial decisions.
 7. This program assisted primary and secondary mathematics teachers in regional, rural and remote areas to attend the AAMT 2005: Making Mathematics Vital conference which was held in Sydney, January 2005.
 8. This program targets families on low incomes and aims to provide them with financial knowledge, help them to build long-term good financial habits and to save for their children's education.

In 2005, the Educational Assessment Australia (EAA) introduced the Australian Financial Literacy Assessment (AFLA), an initiative of the Commonwealth Bank Foundation, which includes a wide range of tasks using practical and real-life situations, available to year 9 and year 10 students, and is designed to assess student learning covering a number of skills. These skills include recalling information, interpreting information, reasoning and problem solving. In addition, diagnostic reports will provide information for students, teachers and parents on students' financial literacy levels (AFLA, 2005).

The Australian government has established a Consumer and Financial Literacy Taskforce to develop the *National Strategy for Consumer and Financial Literacy* which aims to develop a national strategy to reduce poverty, increase economic opportunity, support national savings and create well-informed consumers (CFLT, 2004). In addition, the Collection House Foundation has supported financial literacy in Australia through the running of the *Operation Financial Literacy Program* which

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9. This program is Australia's first comprehensive adult financial education program delivered through community educators and financial counsellors and aims to help participants build their financial knowledge and make better decisions about their money.
 10. A \$3 million commitment to fund Community Development Finance programs to help improve financial literacy in Australia, focusing on the most vulnerable.
 11. A partnership with the Australian Government Department of Family and Community Services, to build the financial skills and confidence of Indigenous people across the Northern Territory and Western Australia.
 12. There are 12 booklets which make up a series called 'Take Control', which was designed to help consumers to build a secure financial future.
 13. The course commences each year in February, with enrolments beginning in December, and is conducted in several locations throughout Australia.

was launched in 13 secondary schools across Australia in early 2002 and focused on providing an understanding of the credit system and financial management practices (FBF, 2002). Furthermore, the Australian Bankers' Association has made financial literacy one of their key priorities by the establishment of their program, called *Broadening Financial Understanding*, which aims to help Australians to make informed and confident decisions regarding their own finances (ABA, 2004).

Not only have financial institutions and governments taken on initiatives to address financial literacy, but professional organisations such as CPA Australia have too. For example, CPA Australia partnered with the Financial Basics Foundation (FBF) (a registered charity) to help deliver Operation Financial Literacy programs which comprise free 10-module teaching resources to secondary schools throughout Australia. The main goal of the FBF is to educate secondary students about the credit system and responsible financial management in order to help them survive in modern society after they have completed their schooling.

In addition, CPA Australia's website is dedicated to educating viewers and provides a fact sheet 'Becoming financially literate' which contains information to improve their financial literacy with the aim to help them to acquire good money management skills (CPA Australia, 2006).

2.5 Research question development

Certain gaps have been identified in previous financial literacy studies and this research attempts to fill in some of these gaps by investigating several research

questions. This section discusses the development of these questions which have been derived from the literature above. There are two main questions, the first one is to determine how financially literate Australian university students are, and several sub-questions have been developed in order to attempt to answer this question. The second main research question involves comparing perceptions of financial literacy with the participant's actual knowledge and skills in this area.

2.5.1 How financially literate are Australian university students?

Financial literacy was defined earlier as 'the ability to make informed judgments and to take effective decisions regarding the use and management of money' (Noctor, Stoney and Stradling, 1992). The results of the ANZ survey of adult financial literacy in Australia showed that most Australians have a reasonable level of financial literacy (RMR, 2003). The results from the Beal and Delpachitra (2003) survey on first-year students from the University of Southern Queensland (USQ) showed that university students in Australia are not skilled, nor knowledgeable in financial matters (Beal and Delpachitra, 2003). The overall results of the Commonwealth Bank national survey indicated that financial literacy in Australia is poor (CBF 2004). These differing results highlight the need for clarification and thus lead to the first research question 'How financially literate are Australian university students?'.

In order to answer this question, students studying at the University of Wollongong (UOW) were used to form a case study. It was not possible to take a sample of students studying at all Australian universities (the ideal situation) and UOW was chosen to be a good case study both for data access and because of its strong national

reputation. In 2006, UOW was ranked as one the top 200 universities in the world by The Times Higher Education Supplement (AEN, 2007). In 2003 and 2004, the UOW received a maximum 5-star ranking for various categories from the Australian Good Universities Guide (an independent review of all universities across Australia). In addition, the UOW has approximately 23,000 enrolled students, 1,500 full-time staff members, and has other campuses in Sydney, Nowra, Batemans Bay, Bega, Moss Vale, Loftus and Dubai. The UOW receives approximately \$20 million annually in research grants, exports earnings in excess of \$90 million and has a direct economic benefit of over \$500 million per annum and continues to grow (UOW, 2007). All of the above add to the UOW's strong national reputation and it is for these reasons that the UOW was chosen to be a good case study for this research.

Six sub-questions were developed in order to determine how financially literate Australian university students are. The first three sub-questions examine the financial literacy levels of UOW students and compare them to the Australian population and to other university students. These questions are as follows:

(a) Are UOW students financially literate?

(b) How do UOW students compare to the Australian population?

(c) How do UOW students compare to USQ students?

Studies of financial literacy targeting higher education 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 examine business students' financial knowledge and skills as they move through to the completion of their studies. It has been assumed that these students will gain higher financial literacy

scores as they progress through to graduation, when in fact this may not be the case. In addition, there has been no attempt to examine the specific subjects or components that these students have studied, or to consider their marks obtained.

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 (business or other), but it may be valuable to examine exactly what students are studying and to make comparisons against several disciplines and years of study. This gives rise to the next two questions regarding the literacy of university students:

(d) Does financial literacy increase with progression to the completion of study?

(e) Does financial literacy differ between students studying different disciplines?

Financial literacy studies focusing on general populations have shown 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 (other than completion). Whether UOW students differ from USQ students has already been attempted (from question (c) above), but this also gives rise to another comparative question:

(f) Does financial literacy differ between types of educational attainment (that is, undergraduate versus postgraduate students)

As previously discussed, UOW students were chosen to represent all Australian university students and in order to investigate the financial literacy levels of Australian university students, the above six sub-questions were examined.

2.5.2 How do university students' perceptions of their financial knowledge/skill compare with their actual knowledge/skill?

The second major research question was to examine how students' perceptions of their financial knowledge/skill compare with their actual knowledge. Previous studies have heavily relied on respondents rating their own level of knowledge/skill and no attempt has been made to investigate the reliability of such an approach. For example, the ANZ survey contained 145 finance questions, of which many were 'self-rating' questions. In addition, it was 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 approach is questionable for several reasons. For example, it is not possible to know whether a respondent's perception of their knowledge and/or skill is entirely accurate and representative of their actual knowledge and/or skill. For this reason the survey used in this study was designed to obtain both respondents' perceptions of their knowledge/skills and to test their knowledge/skills in order to enable a comparison to be made.

2.6 Conclusion

The literature discussed above shows that financial literacy has become an increasingly important research topic and although there have been several studies

conducted which attempted to examine financial literacy levels and several programs developed to address the issue of low financial literacy, there is still a lot of work that needs to be done, especially in Australia where there has been very little financial literacy research conducted.

This research developed several research questions and, although these questions attempt to fill in some of the gaps in the current literature, several gaps remain and these form the basis of suggestions for further research. These will be discussed in more detail in chapter 7 but include: examining the individual marks obtained by students; comparisons between students from several different educational institutions; examining the individual components of financial literacy; gathering extensive details of financial experiences and characteristics; and focusing on the actual measurement of financial literacy. The next chapter discusses the methodology used to examine the research questions.

Chapter 3

Methodology

This chapter describes the methodology used to address the research questions developed in the previous chapter and is divided into three sections. First, the construction of the data collection instrument (online survey) is described in detail, followed by a discussion of the procedures used to collect the data. The third section provides a description of the statistical methods used to analyse the survey data.

3.1 Instrument construction

The survey was developed to investigate students' perceptions of their knowledge and skills as well as to test their knowledge and skills as they relate to four main categories: mathematics and standard literacy; financial understanding; financial competence; and financial responsibility. Table 3.1.1 outlines these four main categories and the specific areas of knowledge and/or skill within each category.

The survey was structured so that there were three main sections. The first section consisted of the demographic questions. These questions were followed by a set of self-rating questions, aimed at investigating students' perceptions of their understanding and confidence as they relate to the four main categories listed above, as well as their attitudes towards spending, budgeting, saving, debt, planning and retirement. The third section focused on testing students' knowledge and skills as

they relate to the four main categories and consisted of a total of 45 multiple choice questions, some of which were true/false questions.

Table 3.1 Four main categories of financial literacy and specific areas within each category.

Financial literacy category	Specific area of knowledge and/or skill
Mathematical and standard literacy	Addition
	Subtraction
	Division
	Multiplication
	Multiple operations
	Percentages
	Bank cheques
	Comprehension
	Direct debit
	Compound interest
	Mortgage insurance
	Averages
Financial understanding	Guarantors
	Methods of payment
	Advantaged and disadvantages of different payment methods
	Secured and unsecured debt
	How organisations are financed
Financial competence	Superannuation
	Mortgages
	Insurance
	CTP
	Relationship between risk and return
	Fees and charges
	Credit rating
	Investments
	Danger of predicting future returns based on past returns
	Diversification
Financial responsibility	Making personal life choices
	Accessing assistance if things go wrong
	Consumer rights and responsibilities

The first main section of the survey, the demographic questions, included the following variables: age; gender; country of birth; first language; study load; type of study; year of study; mature age student status; disability status; workforce participation; employment details; current living situation; major area of study; main source of income; total annual income and estimated total level of debt.

The second main section of the survey, the self-rating questions, included a series of questions regarding student's perceptions of their understanding (13 questions), their confidence (five questions) and their attitudes towards financial concepts (eight questions).

The third main section of the survey, the testing questions, included a total of 45 multiple choice questions used to test students' financial knowledge and skills across the four main categories of literacy. There were 12 questions in the mathematics and standards literacy category, eight questions in both the financial understanding and the financial responsibility categories, and 17 questions in the financial competence category.

3.2 Data collection procedures

An initial application for approval to undertake research involving human participants was submitted to the University of Wollongong/Illawarra Area Health Service Human Research Ethics Committee. The survey had to be attached to the application meaning that finalising the survey questions was the first task that needed to be completed as part of the procedures for the collection of the data.

As mentioned previously, the survey questions were designed to test students' knowledge and skills as they relate to four main categories to enable comparisons to be made with the ANZ Bank's research. The survey was tested using an observational study involving five participants. The only comment that was raised was that the overall survey was too long and that some of the individual questions were also too long. As a result, several questions were omitted from the final survey and several other questions were rephrased so as to shorten the question. For example, some questions were changed so that they became 'true or false' questions, rather than four-option multiple choice questions.

The ethics application also asked where potential participants will be approached to seek their participation in the research. The survey was administered to all UOW students studying at the Wollongong campus via an email sent on behalf of the researcher by the UOW IT Survey Administrator. A copy of this email was also attached to the ethics application and, once approved, approximately 13,000 emails were sent over two consecutive nights (during September 2006). The email is presented in Figure 3.1.

Figure 3.1 Initial email sent to students informing them of the survey and providing a link to the survey website.

Are you confident that you have the right knowledge and skills to **succeed** in today's complex society?

If not, why not help us to **help you**?

By increasing your financial knowledge and skills, you will become:

- more **employable**,
- more **confident** when making financial decisions and investment choices,
- less likely to be **fooled** by cunning advertising and marketing practices, and
- less likely to be **misled** on financial matters.

By participating in a voluntary Financial Literacy Survey, you can help us to investigate ways in which **we can help you**, as students, to succeed in today's **complex** society.

The survey is voluntary and participants will remain totally **anonymous** and results will be kept strictly **confidential**.

The survey should only take around 20 minutes of your time. Please click on the following link to complete the survey:

[SURVEY](#)

Your participation is highly appreciated. Thankyou!

Students were asked to logon to the survey website using their student number as their login and their date of birth as their password. This was to enable students to complete the survey in multiple sittings by saving their responses and returning to the survey at another time. It also allowed validation so that nobody else could complete the survey other than current UOW students. Furthermore, this authorisation logon method meant that students could only answer the survey once. This method caused distress for some students and there were also some concerns regarding the purpose of the survey, privacy and whether survey responses were truly anonymous. As a result, text was added to the front page of the survey website in attempt to address these concerns. In addition to this text, a sample of the survey

data extracted from the website was added to the bottom of the page to illustrate that survey respondents would remain completely anonymous and that responses were unidentifiable. The front page of the survey is presented in Figure 3.2.

The survey website was available to students for approximately four weeks before it was closed and the responses were sent to the researcher by the IT Survey Administrator in an Excel spreadsheet. All questions and answers were coded and a list of the codes was sent in a SAS formats file.

[illegible]

3.3 Statistical analysis

Each student was given a total score based on their answers to the testing questions. For example, a student who answered all of the testing questions correctly would have been given a total score of 45 or 100%. Correct responses were coded as '1', incorrect responses were coded as '0' and missing responses remained as missing. Missing values can affect the results of regression modelling and so dummy variables were added to the final data set in order to account for any non-responses. The responses to the testing questions were grouped into four sections based on the main financial literacy category being tested and four dummy variables (one for each section) were created. These dummy variables were given the value of '0' if the respondent answered all of the testing questions within the category and '1' if the respondent didn't answer one or more of the questions within the category.

Descriptive statistics such as frequencies, percentages and means were used to discuss the overall results of the survey. In order to compare the result with those of the ANZ Bank's results, the total score variable was divided into quintiles by calculating the 20th, 40th, 60th and 80th percentile. Quintile 1 consisted of students with a total score less than the 20th percentile and hence consisted of the students with the lowest level of financial literacy. Quintile 5 consisted of students with a total score greater than or equal to the 80th percentile and hence consisted of the students with the highest level of financial literacy.

To enable a comparison between UOW student's literacy and USQ student's literacy (as determined by Beal and Delpachitra 2003), the median score was calculated and students were divided into two groups: those with a total score below the median score; and those with a total score equal to or above the median score. These two

groups were classified as students with low literacy and students with high literacy respectively.

Students were also given a total score for each of the four main categories of financial literacy. For example, if a respondent answered 11 of the questions in the mathematics and standard literacy category correctly, then they would have had a total score for this category of 11 out of 12, or 92%. Similar calculations were made for the other three main categories.

Each of the demographic variables were tested for significance in determining the overall financial literacy score using both General Linear Models (GLMs) and Analysis of Variance (ANOVA) techniques. In addition, several multiple linear regression models were used to determine which combination of the demographic variables was significant in determining the overall total score.

Correlation analysis was used to determine and investigate any relationships between the demographic (independent) variables such as intercorrelations and multicollinearity. Based on the results of this analysis, logistic regression modelling was used to determine if any of the demographic variables were significant in determining high and low levels of financial literacy and these results were then compared to those of Beal and Delpachitra.

3.3.1 Research questions

This section describes the particular statistical methods used to specifically address each of the research questions described in the previous chapter and is split into two main sections, one for each of the main research questions.

3.3.1.1 How financially literate are Australian university students?

Several sub-questions were developed in chapter 2 in order to address this question, and students studying at the UOW were used as a case study. This section describes the methods used to address each of these sub-questions.

(a) How financially literate are UOW students?

The first sub-question was to determine how financially literate UOW students are and several outputs were considered. First, the overall total score for all students was examined, as well as the total score for each of the four main categories of literacy. Descriptive statistics such as the median and mean scores were considered and whether or not there were any particular areas of skill/knowledge where students scored particularly poorly or particularly well. The demographics of the students were also examined to determine if there were any particular groups of students that performed better or worse than others. This was performed by producing a cross-tabulation of the demographic variables and the total average score variable including the total average scores for each of the four main categories of literacy. The proportion of students within each financial literacy quintile across demographic characteristics was also examined.

(b) How do UOW students compare to the Australian population?

Another sub-question was to compare UOW student's literacy levels with those of the Australian population, as benchmarked by Roy Morgan's research for the ANZ bank. This question was addressed by performing similar descriptive analysis and comparing the two. A comparison of financial literacy quintiles was made, and quintiles were compared across demographics to determine any particular groups of students who scored particularly better or worse than other students. In addition, comparisons of actual scores across specific areas of financial literacy were also performed.

(c) How do UOW students compare to USQ students?

In order to compare literacy levels of UOW students with USQ students, the overall total score and the total scores across the major areas of financial literacy were examined. Results by demographics were also compared, including business versus non-business major students. A logistic regression model was used in order to determine which, if any, of the demographic variables were significant at determining high and low levels of literacy (as mentioned previously) and the results were compared with those of Beal and Delpachitra. This was also the same methodology used by Chen and Volpe (1998) and hence a further comparison was made between UOW students and US college students. The dichotomous variable representing high or low literacy was used as the dependent variable and selected demographic variables were used as the independent variables. These variables were chosen based on their significance levels as a result of performing several GLMs and ANOVAs using the total score variable rather than simply using the high/low dichotomous variable (as some degree of information is lost when categorising a student's score as simply high or low).

(d) Does financial literacy increase with progression to the completion of study?

The next sub-question was to investigate whether financial literacy increases towards the progression of completion of study. For example, do third year students have a higher level of financial literacy than first year students, or second year students? The total score variable was compared across the year of study variable. The survey asked for students to indicate their current full-time-equivalent (FTE) year of study and they were given four options to choose from (1st year, 2nd year, 3rd year, 4th year or higher). The proportion of students within each financial literacy quintile was compared across the year of study variable and statistical tests were also performed to further investigate the relationship between financial literacy and year of study.

General Linear Models (GLMs) were used to determine if there were any statistically significant differences in the financial literacy scores between students across year of study (these models were performed using the statistical software SAS). These models were used instead of ANOVAs due to unequal cell sizes (that is, the number of observations in each cell was not equal) and hence GLMs were considered to be more appropriate.

A total of six dependent (or response) variables were used which included financial literacy quintile, the overall total score and the total scores for each of the four main categories of literacy. Tukey's Studentized Range (HSD) test and Duncan's Multiple Range test were used to test if there were any statistically significant differences between the average scores of students across the different years of study and a statistical significance level of 5% was used.

(e) Does financial literacy differ between students studying different disciplines?

This sub-question arose because no other study had attempted to examine whether literacy differs between students studying specific disciplines, yet it might be expected that students studying particular disciplines (such as finance and accounting) have higher levels of financial literacy than other students. Beal and Delpachitra (2003) simply tested whether there was a difference between business students and non-business students but this study examined literacy across ten major areas of study and across all faculties of studies. In order to answer this question, the overall total score and the total score across financial literacy categories were compared between students studying different disciplines. The nine (or the most common/popular) major areas of study and business (included out of interest) were used. This included: Accounting and Finance; Education; Information Technology and Computer Science; Management and Marketing; Psychology; Biomedical Science; Nursing; Law; Civil, Mining and Environmental Engineering; and Business. The same methodology described above was used to determine if there were any statistically significant differences between the financial literacy of students studying each of the above disciplines and a 5% level of significance was used.

In addition to the major area of study (as indicated by the respondent), the actual course that each respondent was enrolled in was provided by the IT Survey Administrator as an extra variable in the final dataset. From this variable, the faculty that each respondent was enrolled in was able to be determined. Hence, comparisons between faculty of study were also performed using the same methodology.

(f) Does financial literacy differ between types of educational attainment (i.e. undergraduate versus postgraduate students)?

Students were asked about their type of study and were given three options ('undergraduate', 'postgraduate coursework', and 'postgraduate research'). Literacy scores were compared between these three groups of students using the methodology described above.

3.3.1.2 How do student's perceptions of their knowledge/skills compare with their actual knowledge/skills?

The second main question was to compare students' perceptions of their knowledge/skills with their actual knowledge/skills as no other research has attempted this before and it is questionable whether or not using self-perception alone is adequate for the measurement of financial literacy. In order to address this question, cross tabulations of the self-rating questions and the percentage of correct/incorrect answers (to all relevant testing questions) were performed and the results discussed. For each self-rating question, there were one or more relevant testing questions. In addition, Chi squared tests for contingency tables were used to examine the independence of the two variables in the cross tabulations and Spearman correlation analysis was performed to further investigate the relationships between students' perceptions and their actual scores.

3.4 Conclusion

This chapter provided a description of the survey construction and implementation. The survey was designed so that the responses would enable an exploration of the

research questions developed in the previous chapter and the statistical techniques used to analyse the survey data were described. The next chapter provides a discussion of the survey responses, including the survey response rate and the number of non-responses to the individual survey questions. The profile of the survey participants and their representation of the UOW student population is also included in the next chapter, which helps to provide a more detailed understanding of the reliability of the survey results.

Chapter 4

Survey Response

The survey was administered to all UOW students using the methodology described in chapter 3 and this chapter discusses the survey response in detail and is divided into five sections. The first section discusses the overall survey response in detail, including how many students logged on to the survey website, the number of blank, complete and incomplete survey records. The next three sections examine the most frequently and least frequently answered questions and the number of non-responses across all categories and variables. Finally, a discussion of the profile of the survey participants and their representation of the UOW student population is presented.

4.1 Overall response

Essentially the survey was a census, which was administered to all UOW students studying at the Wollongong campus. Non-response bias is possible as not all students chose to participate in the survey. Non-response bias occurs when the participants and the non-participants differ significantly with respect to the characteristic of interest, i.e. their financial literacy levels. For example, it could be that those students who did not participate chose not to because they couldn't answer the questions and hence their financial literacy levels would perhaps be lower than the respondents'. This type of bias is very difficult to determine or measure and has not been attempted in this study. Non-response bias can also occur when the survey fails to get a response to one or more of the individual questions

resulting in incomplete survey records. The number of responses to the survey questions and the number of incomplete survey records is discussed next.

There were a total of 1,963 students who logged onto the survey website. Of those students, 238 did not actually participate in the survey and hence there were 238 blank records. These records were deleted prior to the data analysis resulting in a data set of 1,725 records. Of the 1,725 students who participated there were 224 who did not answer any of the testing questions, resulting in a final data set of 1,501 records. These records contained respondents who answered at least one of the testing questions and all or most of the demographic questions. This represents a total response rate of 11.3% (1,501 students out of a total of 13,297 students). Considering the length of the survey and that it was an online student survey offering no incentives to participate (such as prizes, gifts or money), it was suggested in conversation by other researchers at the UOW that this response rate is very good. All students were sent a reminder email, approximately 2 weeks after the initial email was sent out, giving students an additional 2 weeks to complete the survey.

Of the final data set, there were a total of 1,081 respondents who answered every question, leaving 420 respondents who did not answer one or more of the questions and hence there were 420 incomplete survey records. By simply excluding these records from the analysis, a possible bias may be introduced due to differences between those respondents who answered all of the questions and those that did not. It is possible that respondents chose to answer only the questions that they knew the answer to or felt confident answering, or it could be that the survey was too long and respondents became bored, impatient or ran out of time and hence did not complete every question. It is difficult to calculate or determine the resulting impact of such

biases and it is beyond the scope of this research. However, as explained in the previous chapter, dummy variables were introduced when analysing the survey data to account for the non-responses throughout the survey. For example, four dummy variables (one for each financial literacy category) were created by assigning a value of '0' if the respondent answered all of the testing questions within the category and '1' if the respondent didn't answer one or more of the questions within the category. These four dummy variables were then added to the regression models as response variables (or independent variables) to identify if non-response significantly affected the results of the survey.

4.2 Least frequently answered questions

The question that was least frequently answered by the 1,501 respondents asked whether providers of professional advice about financial products are required to disclose if they are receiving commission as a result of their advice. A total of 214 (14.3%) respondents did not answer this question. This was closely followed by a question that tested students' knowledge of diversification, which 207 (13.8%) respondents did not answer. Overall, respondents were less likely to answer the financial competence and the financial responsibility questions. These questions were asked towards the end of the survey, after the mathematics and standard literacy and the financial understanding questions, which indicates that students may have found the survey too long and hence were less likely to answer the questions towards the end of the survey.

4.3 Most frequently answered questions

The most frequently answered question was a division question which asked how many televisions could be brought for \$4,000 if they cost \$1,200 each. Only 6 respondents (0.4%) did not answer this question. Other questions that were more frequently answered included a basic addition question and a basic subtraction question, which only 7 (0.5%) of respondents did not answer and a multiplication question which was not answered by 11 respondents (0.7%). All of these questions were part of the mathematics and standard literacy questions which were asked towards the beginning of the survey and hence it is not surprising that they were more frequently answered.

4.4 Non-response

4.4.1 Demographic questions

Most respondents provided all of the demographic information although there were several incomplete demographic records. There was one record that was missing year of birth and hence age could not be determined. In addition, there was one record with an age of 9 and nine records with an age over 70 years. As these ages are highly unlikely it was assumed that year of birth was incorrectly entered by the respondent and hence this information was assumed to be missing. This then gives a total of 11 records missing year of birth details and hence age.

In addition, there were two records missing country of birth and three missing first language. Five records were missing gender, 10 missing study load, five missing the type of study (undergraduate, postgraduate coursework or research), eight missing

the year of study (i.e. first year, second year) and 29 missing final year of study. There were 21 records where mature age student information was not answered and 25 where disability information was not answered. Eleven respondents did not answer whether they had ever been in the workforce and nine did not answer whether they were currently employed. There were 10 records that were missing information regarding current living situation, seven missing area of study information, 21 missing the main source of income and 39 missing income details. Forty-nine respondents did not provide their current level of debt.

4.4.2 Self-rating questions

There were a total of 26 questions that asked students about their own perceptions of their financial knowledge and understanding. These questions were divided into three main categories: understanding; confidence; and attitudes. Although most records were complete, there were several self-rating questions that were not answered. The following three tables summarise this information.

Table 4.4.2.1: Number of respondents who did not answer each of the ‘understanding’ self-rating questions

Question	Respondents who did not answer	
	Number	Percent
How well do you understand the term Bank Cheque?	5	0.3
How well do you understand the concept of compound interest?	6	0.4
How well do you understand the term direct debit?	12	0.8
How well do you understand the concept of mortgage insurance?	9	0.6
When applying for a personal loan, how well do you understand the rights and obligations of a personal guarantor?	7	0.4
How well do you understand the advantages and disadvantages of different forms of payment, such as: cash; credit cards; debit cards, and loans?	9	0.6
How well do you understand the difference between secured loans and unsecured loans?	9	0.6
How well do you understand how companies and other organisations are financed, including shares?	9	0.6
How well do you understand the concepts of superannuation?	12	0.8
How well do you understand the concepts of insurance?	19	1.3
How well do you understand fixed interest rates vs variable interest rates?	13	0.9
How well do you understand the relationship between risk and return?	9	0.6
In general, how well do you understand your rights and responsibilities as a consumer?	9	0.6

Table 4.4.2.2: Number of respondents who did not answer each of the ‘confidence’ self-rating questions

Question	Respondents who did not answer	
	Number	Percent
How confident are you at performing arithmetic calculations involving addition, subtraction, multiplication and division?	15	1.0
How confident are you at calculating percentages?	18	1.2
How confident are you at calculating averages?	25	1.7
How confident are you at general comprehension?	20	1.3
If you experienced difficulty with a financial institution that you were unable to resolve directly, how confident are you that you would know where to go to make an effective complaint?	21	1.4

Table 4.4.2.3: Number of respondents who did not answer each of the ‘attitude’ self-rating questions

Question	Respondents who did not answer	
	Number	Percent
I spend all of my money as soon as I get it and don't really plan for the future.	11	0.7
I always keep an eye on expenses and have a well-organised budgeting system.	13	0.9
I often have trouble setting money aside for major financial outlays.	23	1.5
Using a credit card to purchase a new TV is a good way to have something now, even if it costs interest.	12	0.8
I generally feel out of control when it comes to spending money and using credit or borrowing.	14	0.9
It is important to have both a long-term and a short-term financial plan.	16	1.1
Saving for retirement is not that important because the government will make up the gap.	13	0.9
When making financial decisions, I generally feel well-informed.	14	0.9

4.4.3 Testing questions

The questions that were designed to test students’ financial skills and knowledge were split into four main categories and were asked in the following order: mathematics and standard literacy; financial understanding; financial competence; and financial responsibility. As mentioned above, students were most likely to answer the mathematics and standard literacy questions and least likely to answer the financial responsibility questions. There were a total of 45 testing questions and a total of 1,081 respondents answered all of them. The remaining 420 respondents did not answer one or more of these questions. For a complete list of survey responses please see Appendix A.

4.5 Profile of participants

4.5.1 Age and gender

The youngest respondent was 17 years of age and the oldest was 63, giving a range of 46. The median age was 22 years and the average age was 24 years. The mode or the most common age of respondents was 20 years, with 241 (16%) of respondents being 20 years of age. The highest proportion (60%) of respondents were aged between 19 and 23 years of age. These results are summarised in Table 4.5.1.1 and Table 4.5.1.2 below.

Table 4.5.1.1 Descriptive statistics for variable age.

Minimum	Maximum	Range	Median	Mean	Mode
17	63	46	22	24	20

Approximately 40% of respondents were male and 60% were female. The oldest respondent, who was aged 63, was male and the two youngest respondents aged 17 were female. Overall, the distribution of age was consistent across gender, however there were some differences. Female respondents were more likely to be aged less than the median age, with 49.3% of females aged less than 22 years, compared to 44.3% of males aged less than 22 years. Females were also more likely to be aged 40 years or older, with 7.5% of female respondents within this age category, compared to 4.2% of male respondents.

Table 4.5.1.2 Age by gender for survey respondents.

Age (in years)	Male		Female		Total respondents		
	Number	Percent	Number	Percent	Number	Percent male	Percent female
Less than 22 years	266	44.3	435	49.3	701	37.9	62.1
22	68	11.3	80	9.1	148	45.9	54.1
23	50	8.3	65	7.4	115	43.5	56.5
24	46	7.7	50	5.7	96	47.9	52.1
25-29	107	17.8	110	12.5	217	49.3	50.7
30-39	38	6.3	77	8.7	115	33.0	67.0
40 years and older	25	4.2	66	7.5	91	27.5	72.5
Total respondents	600	100.0	883	100.0	1,483	40.5	59.5

There is a total of 6,454 (49%) male and 6,843 (51%) female students within the UOW student population. As mentioned above, approximately 40% of the students who responded to the survey were male and 60% were female. These figures imply that female students were more likely to respond than male students and hence females are slightly overrepresented in the survey data. However, this is still a good representation of the UOW student population in terms of gender.

Table 4.5.1.3 Comparison of gender between the UOW student population and the survey respondent population.

Gender	UOW population		Survey respondents	
	Number	Percent	Number	Percent
Male	6,454	49	604	40
Female	6,843	51	892	60
Total students	13,297	100.0	1,496	100.0

4.5.2 Course and study details

The details of the actual course that each respondent was enrolled in at the time of the survey were provided by the IT Survey Administrator by adding this variable to the dataset before it was received. In addition, respondents were asked to indicate their major area of study (they had 28 areas from which to choose which were drawn

from the university's faculty information website). The most common course studied by respondents was a Bachelor of Commerce, with a total of 220 (15%) of respondents enrolled in this course. This was followed by a Bachelor of Arts (10% of respondents), a Bachelor of Science (8% of respondents), a Bachelor of Engineering (6% of respondents) and a Doctor of Philosophy (5% of respondents). The most common major area of study which students indicated they were studying was Accounting and Finance, which 14% of students indicated was their major area of study. This was followed by Education (9%), Information Technology and Computer Science (7%), Management and Marketing (7%), and Psychology (6%).

Course enrolment was used to group respondents into faculties and Table 4.5.2.1 presents the number and proportion of respondents enrolled in each of the 10 faculties. Male respondents were far more likely to be studying within the Faculty of Engineering or the Faculty of Informatics than female respondents, with 16% and 24% of males enrolled in these faculties respectively, compared to just 3% and 4% of females. Female respondents however were more likely to be studying within the Faculty of Education or the Faculty of Health and Behavioural Sciences, with 12% and 21% of female respondents enrolled in these faculties respectively, compared to just 4% of males.

The majority of respondents (84%) were studying full-time. Seventy-seven percent indicated that they were undergraduates, 15% were postgraduate course work students and 8% were postgraduate research students. Thirty-four percent of participants were first year students. This was followed by second year students (27%), third year students (25%) and higher (14%). In addition, 75% of respondents

indicated that it was not their final year of study and 23% indicated that it was their final year of study.

Table 4.5.2.1 Faculty of study by gender of survey respondents.

Faculty	Male		Female		Total respondents	
	Number	Percent	Number	Percent	Number	Percent
Arts	33	5.5	106	11.9	139	9.3
Graduate School of Business	22	3.6	13	1.5	35	2.3
Commerce	162	26.8	182	20.4	344	23.0
Creative arts	17	2.8	61	6.9	78	5.2
Education	22	3.6	109	12.2	131	8.8
Engineering	98	16.2	22	2.5	120	8.0
Health & behavioral sciences	26	4.3	183	20.6	209	14.0
Informatics	143	23.7	37	4.2	180	12.0
Law	22	3.6	35	3.9	57	3.8
Science	53	8.8	139	15.6	192	12.9
Total respondents	604	100.0	890	100.0	1,494	100.0

The UOW student population consists of 9,791 (74%) undergraduate students and 3,506 (26%) postgraduate students. As mentioned above, approximately 77% of the students who responded to the survey were undergraduate students and 23% were postgraduate students. Overall, this is a good representation of the UOW student population in terms of the type of course studied, although undergraduate students are slightly overrepresented.

In terms of course enrolment, a total of 1,948 UOW students are enrolled in a Bachelor of Commerce, representing 15% of the total UOW student population. Of the students who responded to the survey, 220 (15%) were enrolled in this degree which is an excellent representation of the Commerce student population. Table 3.4.2.2 below presents a summary of the UOW student population by course name and compares this to that of the survey population. Although differences exist, the survey respondents are generally a good representation of the UOW student

population in terms of course enrolment. Only the top 10 courses of the UOW population are shown. A complete list of course enrolment by gender is presented in Appendix B.

Table 4.5.2.2 Comparison of course details between the UOW student population and the survey respondent population (top 10 courses enrolled in by UOW population).

Course details	UOW population		Survey respondents	
	Number	Percent	Number	Percent
Undergraduate	9,791	74	1,162	77
Postgraduate	3,506	26	335	22
Bachelor of Commerce	1,948	14.6	220	14.7
Bachelor of Arts	1,019	7.7	153	10.2
Bachelor of Engineering	870	6.5	84	5.6
Bachelor of Science	863	6.5	123	8.2
Doctor of Philosophy	703	5.3	72	4.8
Bachelor of Teaching	617	4.6	66	4.4
Bachelor of Nursing	425	3.2	61	4.1
Master of Professional Accounting	425	3.2	49	3.3
Bachelor of Creative Arts	401	3.0	36	2.4
Bachelor of Education	333	2.5	19	1.3

4.5.3 Disability and mature age students

There were a total of 43 (3%) respondents who indicated that they had a disability. Twenty-four respondents did not answer this question and the remaining 1,434 (96%) indicated that they did not have a disability. A large proportion of respondents indicated that they were a mature age student (570 or 38%), while 911 respondents (61%) indicated that they were not a mature age student. Twenty respondents did not answer this question.

4.5.4 Country of birth and first language

The majority (70%) of students who participated in the survey were born in Australia. Of the remainder, the most common country of birth was China (173 students or 12%). Other common countries of birth included India (27 students), the United Kingdom (25 students) and Hong Kong (19 students).

English was the most common first language (1,143 students or 76%). This was followed by Chinese languages, which students gave variously as Chinese, Cantonese and Mandarin (206 students or 14%).

4.5.5 Work experience

Only 10% of respondents had never been in the workforce. Of the remaining 1,348 students, 79% were currently employed. Of these students, the highest proportion (59%) were employed on a casual basis, followed by 26% who were employed on a part-time basis and the remaining 15% were employed full-time.

4.5.6 Income and debt

The most common source of income, which 697 (46%) students indicated, was salary and/or wages. This was followed by parental/family support (406 students or 27%), government allowance/payment (244 students or 16%), spouse/partner income (72 students or 5%) and other income source (62 students or 4%).

Students were also asked to indicate their total income and debt. The highest proportion (46%) of students indicated a total annual income of less than \$10,000.

Nineteen percent of students had a total annual income of between \$10,000 and \$14,999. This was followed by 11% of students indicating a total income between \$15,000 and \$19,999, 10% earned \$20,000 or more per annum, 8% earned between \$20,000 and \$29,999 and 4% of students indicated that their total annual income was between \$30,000 and \$39,000.

The highest proportion (56%) of students indicated having a total debt level of less than \$5,000. Fourteen percent of students had a total debt level of \$20,000 or more. This was followed by 13% of students with a total debt level between \$5,000 and \$9,999, 9% with debt between \$10,000 and \$14,999, and 5% of students indicated that their total debt was between \$15,000 and \$19,999.

4.5.7 Living situation

Respondents were more likely to be living at home with parents/family or be renting with other people, with 41% and 32% of respondents indicating these living situations respectively. Eight percent of students indicated that they were living in their own home and had a mortgage, and 7% were renting alone. Only 2% of respondents were living in their own home with no mortgage. Exposure to rental payments, mortgage repayments or other responsibilities due to living in your own home (whether owned or rented) such as utility bills, groceries and maintenance, may well impact on financial literacy levels.

4.6 Conclusion

This chapter provided an introduction to the results of the survey by discussing the overall survey response, including the least frequently answered questions and the most frequently answered questions. The number of non-responses throughout the survey was also examined, followed by the profile of the survey participants which included a discussion of their representativeness of the UOW student population. Overall, the number of respondents was considered to be good and it was concluded that the respondents were representative of the UOW student population. The next chapter presents the results from the survey questions in an attempt to answer the first research question. This includes discussions of how financially literate UOW students are and hence conclusions are drawn regarding how financially literate Australian university students are.

Chapter 5

Research question 1: Results and discussion

The first main research question, ‘How financially literate are Australian university students?’³ was divided into six sub-questions and this chapter presents the results and is divided into six main sections. Each section discusses the results of each of the six sub-questions and includes: an examination of overall financial literacy scores; responses to individual questions across financial literacy categories; how students within each quintile performed; how students with differing demographic characteristics performed; and comparisons with the results of previous financial literacy studies where applicable.

5.1 How financially literate are UOW students?

UOW students financial literacy levels were examined in order to determine how financially literate Australian university students were. This section presents several tables which summarise the results of the survey in attempt to answer this question and is split into four sub-sections: overall financial literacy scores; responses to questions within each financial literacy category; the average scores for students with different demographic characteristics, and an analysis of financial literacy quintiles by demographic characteristics.

³ As described previously, UOW students were chosen to form a case study to examine students studying at Australian universities.

5.1.1 Overall financial literacy scores

Table 5.1.1.1 shows the overall total financial literacy score and the total score for each of the four financial literacy categories for all participating UOW students. Overall, students scored reasonably well, with the overall average score being 68% and the median score 76%. When considering the distribution of the overall score, the lower quartile (25th percentile) score was 62%, which means that 25% of students scored below 62%. The upper quartile (75% percentile) score was 82% which means that a further 25% of students scored above 82%. This also means that 25% of students scored between 62% (the lower quartile) and 76% (the median score), and 25% of students scored between 76% (the median) and 82% (the upper quartile).

The best answered financial literacy category was mathematics and standard literacy and the worst answered was financial understanding, with average scores of 83% and 57% respectively. The results for both the financial competence and financial responsibility categories were very similar, with average scores of around 65% and median scores of 75% and 77% respectively. When considering the distribution of scores across the four main categories of literacy, an alarming result was that 25% of students scored below 50% (the lower quartile) in both the financial understanding category and the financial responsibility category. In other words, 25% of students failed these two categories. In addition, 25% of students scored below 59% in the financial competence category. More positively, 25% of students scored above 92% (the upper quartile) in the mathematics and standard literacy category and 25% of students scored above 88% in the financial responsibility category.

Table 5.1.1.1: Total score statistics for each financial literacy category for all participating students

Total score	Lower quartile	Median score	Upper quartile	Average score	Maximum possible score
Mathematics and standard literacy	9 (75.0%)	10 (83.3%)	11 (91.7%)	9.9 (82.5%)	12
Financial understanding	4 (50.0%)	5 (62.5%)	6 (75.0%)	4.6 (57.2%)	8
Financial competence	10 (58.8%)	13 (76.5%)	14 (82.4%)	11.1 (65.2%)	17
Financial responsibility	4 (50.0%)	6 (75.0%)	7 (87.5%)	5.2 (64.9%)	8
Overall	28 (62.2%)	34 (75.6%)	37 (82.2%)	30.8 (68.4%)	45

Although the overall results were positive, Table 5.1.1.1 shows that scores differed between financial literacy categories and students scored better in some categories than others. The following section presents results which attempted to identify any specific areas within each of the four categories where students scored particularly poor or particularly well.

5.1.2 Responses to questions within each financial literacy category

Table 5.1.2.1 summarises the results for the mathematics and standard literacy category and, as mentioned above, this was the category where students scored the best. All questions within this category were answered well, except one question which tested students' knowledge on mortgage insurance, where only 56% of respondents answered correctly. Sixty-nine percent of students correctly answered a question regarding compound interest and 70% were able to correctly answer a question which tested their knowledge of bank cheques. All other questions within this category were correctly answered by more than 85% of students.

Table 5.1.2.1: Survey questions within the mathematics and standard literacy category – Proportion of correct and incorrect responses

Area of knowledge or skill being tested	Correct responses		Incorrect responses	
	Number	Percent	Number	Percent
Addition	1,304	87.2	192	12.8
Subtraction	1,449	96.9	46	3.1
Division	1,479	98.9	16	1.1
Multiplication	1,440	96.6	50	3.4
Multiple operations	1,267	87.7	178	12.3
Percentages	1,357	93.5	95	6.5
Bank cheque	1,010	69.9	434	30.1
Comprehension	1,216	85.7	203	14.3
Direct debit	1,328	94.6	76	5.4
Compound interest	927	68.6	424	31.4
Mortgage insurance	762	55.7	606	44.3
Averages	1,271	92.4	105	7.6

Table 5.1.2.2 summarises the results for the financial understanding category which was the category in which students scored the least well. Only 29% showed an understanding of secured versus unsecured debt and only 44% of students were able to correctly answer a question which tested their knowledge of debit cards. Approximately 60% of students were able to correctly answer a question which tested their understanding of guarantors and a question which tested their knowledge of using ATMs. All other questions within this category were correctly answered by more than 75% of students.

Table 5.1.2.2: Survey questions within the financial understanding literacy category – Proportion of correct and incorrect responses

Area of knowledge or skill being tested	Correct responses		Incorrect responses	
	Number	Percent	Number	Percent
Guarantors	826	61.0	529	39.0
Debit cards	603	44.3	757	55.7
Money order	1,071	79.2	281	20.8
Credit cards & store cards	1,023	75.7	329	24.3
Unsecured loans	1,134	84.4	209	15.6
Using ATMs	809	59.9	541	40.1
Secured and unsecured debt	386	29.1	942	70.9
How organisations are financed	1,010	76.5	310	23.5

Table 5.1.2.3 summarises the results for the financial competence category. Most questions within this category were answered well although only 36% of students correctly answered a question that tested their knowledge of investments. However, there were three questions that tested students' knowledge of investments and over 80% of students were able to correctly answer the other two questions. The poorly answered investment question asked about term deposits. There were two questions that tested students' understanding of CTP Green Slip insurance and one of them was answered correctly by only 40% of students. The other one was correctly answered by 81% of students. The best answered question within this category tested students' understanding of consumer credit ratings, in which 90% of students answered correctly.

Table 5.1.2.3: Survey questions within the financial competence literacy category – Proportion of correct and incorrect responses

Area of knowledge or skill being tested	Correct responses		Incorrect responses	
	Number	Percent	Number	Percent
Superannuation contributions	1,013	77.0	302	23.0
Superannuation funds terms and conditions	983	74.7	333	25.3
Superannuation tax	1,104	83.6	217	16.4
Early termination of loans	951	72.4	363	27.6
First home owners grant	871	66.5	439	33.5
General insurance	847	64.8	460	35.2
Coverage of CTP Green Slip insurance	529	40.4	780	59.6
Home loans	1,054	80.8	251	19.2
Risk and return	1,149	87.6	163	12.4
Loan establishment fees	1,137	87.5	163	12.5
General fees and charges	990	75.6	319	24.4
Credit rating	1,178	90.1	130	9.9
Danger of predicting future returns based on past returns	1,059	81.4	242	18.6
Investments	1,171	89.5	138	10.5
Term deposit	475	36.3	832	63.7
Financial product sales	978	75.4	319	24.6
Diversification	1,144	88.4	150	11.6

Table 5.1.2.4 summarises the results for the financial responsibility category. The worst answered question within this category asked about a consumer's rights when cancelling a new insurance policy. Only 46% of students answered this question correctly. All other questions within this category were correctly answered by more than 64% of students.

Table 5.1.2.4: Survey questions within the financial responsibility literacy category – Proportion of correct and incorrect responses

Area of knowledge or skill being tested	Correct responses		Incorrect responses	
	Number	Percent	Number	Percent
PIN security	1,046	80.1	260	19.9
Responsibilities of financial advisors	827	64.3	460	35.7
Insurance policy disclosures	1,136	87.5	163	12.5
Secondary credit card holders	1,185	91.2	115	8.8
Insurance policy cancellations	601	46.1	702	53.9
Joint loan repayments	1,109	85.0	195	15.0
Likely cause of a bad credit rating	1,084	83.3	217	16.7
Accessing assistance if things go wrong	839	64.2	467	35.8

The following section presents average financial literacy scores across financial literacy categories for different demographic characteristics.

5.1.3 Average scores by demographic characteristics across financial literacy categories

Average scores across each of the four major categories of financial literacy were examined by demographic characteristics. This section presents the results of this analysis and contains eight tables. Table 5.1.3.1 presents the average score for each financial literacy category by the students' age group and gender. The total average score (across all categories) generally increased with age with the exception of students aged 23 to 25 years old, who had the lowest overall average score of just

63%. Older students, aged over 30 years, had the highest overall average score of approximately 77%. Similar patterns were found across each of the categories. There was very little difference in the average scores between male and female students.

Table 5.1.3.1: Average scores across financial literacy categories: Age and gender

Demographic category	Average score				Total
	Mathematics & standard literacy	Financial understanding	Financial competence	Financial responsibility	
Age group					
19 years or less	81.8	52.6	64.1	62.9	66.5
20 to 22 years	83.1	57.1	65.4	64.9	68.6
23 to 25 years	80.2	53.4	57.9	57.0	62.9
26 to 30 years	81.6	60.1	67.0	67.0	69.7
31 to 40 years	86.3	67.8	75.9	77.0	77.4
Over 40 years	86.3	65.5	75.2	78.1	77.0
Gender					
Female	81.9	57.3	65.5	65.8	68.5
Male	83.4	57.3	65.1	63.8	68.4

Table 5.1.3.2 presents the average score for each financial literacy category by the students' country of birth and first language spoken. The responses to these two characteristics were combined into two categories (Australia versus overseas and English versus other). This was because the majority of respondents indicated that they were born in Australia and that their first language spoken was English (70% and 76% respectively). Thirty-eight percent of students born overseas indicated that they were born in China and 58% of students whose first language was other than English spoke Chinese languages.

The total average score for students born in Australia was much higher (72%) than that of students born overseas (60%). Those who indicated English as their first language had a higher average score (72%) than other students (57%). This pattern was consistent across all financial literacy categories, with students born in Australia

and whose first language was English generally scoring much higher than other students.

Table 5.1.3.2: Average scores across financial literacy categories: Country of birth and first language

Demographic category	Average score				Total
	Mathematics & standard literacy	Financial understanding	Financial competence	Financial responsibility	
Country of birth					
Australia	84.6	60.5	69.3	69.6	71.9
Overseas	77.9	49.5	56.0	53.9	60.3
Fist language					
English	84.5	60.8	69.1	69.6	71.8
Other	76.2	45.6	52.7	49.6	57.1

Table 5.1.3.3 presents the average score for each financial literacy category by study load and type of study. Overall, students studying part-time had a higher average score (77%) than students studying full-time (67%). Postgraduate research students had a higher overall average score (74%) than undergraduate students (69%) and postgraduate coursework students (63%). It is surprising that postgraduate coursework students scored lower than undergraduate students, as they are of a higher rank than undergraduates (although this may be due to a higher enrolment of international students in postgraduate coursework degrees). The overall pattern was similar for the average scores across categories.

Table 5.1.3.3: Average scores across financial literacy categories: Type of study

Demographic category	Average score				Total
	Mathematics & standard literacy	Financial understanding	Financial competence	Financial responsibility	
Study load					
Part-time	87.0	66.6	75.2	76.9	77.1
Full-time	81.8	55.5	63.4	62.8	66.8
Study type					
Undergraduate	83.0	57.5	65.8	65.8	68.9
Postgraduate (Research)	86.3	65.5	70.5	70.8	73.9
Postgraduate (Course Work)	78.5	52.3	60.4	57.9	63.3

Table 5.1.3.4 presents the average score for each financial literacy category by current year of study and whether or not students were in their final year of study. The overall results showed that financial literacy increased with year of study, ranging from a total average score of 65% for first year students and 73% for fourth year or higher students. This pattern was similar across all financial literacy categories. There was little difference in average scores between final year students and students who were not in their final year.

Table 5.1.3.4: Average scores across financial literacy categories: Year of study and final year status

Demographic category	Average score				Total
	Mathematics & standard literacy	Financial understanding	Financial competence	Financial responsibility	
Current year of study					
First year	80.5	51.9	61.8	61.3	64.9
Second year	82.4	57.8	65.6	64.0	68.4
Third year	83.9	60.6	66.7	67.3	70.3
Fourth year or higher	85.4	63.0	70.4	71.1	73.2
Final year status					
Not final year student	82.8	57.1	65.5	65.0	68.5
Final year student	81.8	57.1	64.2	64.8	67.7

Table 5.1.3.5 presents the average score for each financial literacy category by area of study. There were many differences in the average scores across the different

disciplines but the more noticeable ones included: students studying librarianship scored very poorly, with a total average score of just 39%; those studying medicine scored poorly (total average score of 57%); and those studying music and drama also scored poorly, with a total average score of 58%. The higher scoring students were studying psychology and law (total average scores of 75% and 74% respectively), economics and information systems and physics (73%). Chemistry students and mechanical and materials engineering students scored exceptionally well in the mathematics and standard literacy category, with an average score of 88% and law students had the highest average score in the financial understanding category, with an average score of 67%.

Table 5.1.3.5: Average scores across financial literacy categories: Area of study

Area of study	Average score				Total
	Mathematics & standard literacy	Financial understanding	Financial competence	Financial responsibility	
Accounting and finance	82.9	57.9	63.9	62.4	67.6
Art and design	81.0	53.5	66.7	63.8	67.7
Biological sciences	82.6	51.8	61.0	66.6	66.1
Biomedical science	82.4	59.5	70.4	70.5	71.7
Business	73.3	50.4	63.9	58.6	63.0
Chemistry	87.7	53.0	66.4	63.8	69.2
Civil, mining and environmental engineering	84.0	58.1	67.5	65.4	69.9
Earth and environmental sciences	81.2	57.5	65.9	65.3	68.4
Economics and information systems	84.9	62.5	71.1	71.5	73.3
Education	82.8	58.6	68.5	69.8	70.8
Electrical, computer and telecommunications	83.2	52.0	61.8	59.5	65.3
English literatures, philosophy and language	83.6	55.3	65.6	63.3	68.2
History	81.2	56.8	67.4	68.6	69.4
Information technology and computer science	83.0	53.4	59.5	58.0	64.4
Journalism and creative writing	79.0	52.6	58.8	50.8	61.7
Law	85.3	67.1	68.4	73.3	73.5
Librarianship	62.5	25.0	32.4	31.3	38.9
Management and marketing	81.8	58.6	64.2	64.1	67.9
Mathematics and applied statistics	86.0	54.0	64.5	65.5	68.5
Mechanical and materials engineering	88.1	59.5	65.8	65.1	70.5
Medicine	76.4	54.1	49.0	45.9	56.7
Music and drama	72.4	43.0	55.5	53.9	57.5
Nursing	79.3	55.8	61.4	66.9	66.1
Physics	85.2	60.1	71.0	69.5	72.6
Politics	78.2	58.6	67.3	65.6	68.3
Psychology	85.3	64.3	74.1	72.5	75.0
Public health	78.7	51.1	56.7	60.0	62.2
Social sciences, media and communication	83.3	57.1	66.0	63.8	68.7

Table 5.1.3.6 presents the average score for each financial literacy category by whether or not the respondent had ever been in the workforce and their current employment status. As expected, those students who had never been in the workforce scored worse than those who had. It is possible that by being in the

workforce, exposure to things such as income, payslips, superannuation, financial statements and taxation may improve knowledge of certain financial concepts and influence financial skills.

Employed students also scored better than those who were unemployed. Of these students, those who were employed full-time generally had the highest average scores, and students employed part-time had the lowest. Students employed on a casual basis generally scored slightly higher than those employed part-time.

Table 5.1.3.6: Average scores across financial literacy categories: Employment details

Demographic category	Average score				Total
	Mathematics & standard literacy	Financial understanding	Financial competence	Financial responsibility	
Workforce participation					
Has been in the workforce	83.3	58.5	66.4	66.1	69.5
Has never been in the workforce	74.9	44.4	54.0	52.4	57.6
Current employment status					
Unemployed	79.0	52.3	60.9	60.8	64.2
Employed casual	83.6	57.8	66.4	66.1	69.4
Employed part-time	82.3	58.3	64.1	62.4	67.6
Employed full-time	88.3	66.6	74.2	75.5	76.9

Table 5.1.3.7 presents the average score for each financial literacy category by living situation and main source of income. Overall and across all financial literacy categories, students living in their own home, with or without a mortgage, had higher average scores than other students. Students with the lowest average scores were those living in a house or unit rent free.

Students whose main source of income was spouse or partner income also scored higher on average than other students. The lowest scoring students indicated parental or family support as their main source of income.

Table 5.1.3.7: Average scores across financial literacy categories: Living situation and main income source

Demographic category	Average score				Total
	Mathematics & standard literacy	Financial understanding	Financial competence	Financial responsibility	
Living situation					
Living at home with parents/family	83.3	57.6	66.3	66.0	69.2
Own home (with mortgage)	88.6	68.5	77.7	78.9	79.2
Own home (no mortgage)	87.7	63.4	77.4	82.4	78.5
Living in house/unit rent free	76.3	49.3	58.1	56.0	61.0
Renting alone	80.5	59.1	65.8	65.5	68.5
Renting with other(s)	81.3	54.1	61.4	60.5	65.2
Boarding with family/friends	83.5	58.9	65.7	62.8	68.7
Other living situation	76.3	50.8	58.1	57.9	61.6
Main source of income					
Salary/Wages	84.4	59.9	68.3	68.3	71.1
Government allowance/payments	82.1	59.9	66.9	69.3	70.1
Parental/family support	79.0	48.9	56.9	53.9	60.8
Spouse/Partner income	88.8	71.1	77.3	79.5	79.7
Other income source	80.3	54.6	67.5	65.1	68.2

Table 5.1.3.8 presents the average score for each financial literacy category by income and debt levels. Financial literacy scores increased with increased levels of both income and debt across all categories of literacy. It is possible that students with higher levels of income and debt have more exposure to the financial markets, including interest rates and knowledge of different financial products and services, and have more experience in financial management and investments than students with little or know income or debt. These results were consistent with Chen and Volpe's study on financial literacy among US college students that found higher levels of financial literacy were associated with higher levels of both income and debt

(Chen and Volpe, 1998). These results were also consistent with Beal and Delpachitra's study on financial literacy among USQ students that found students with higher levels of income were more likely to have higher levels of financial literacy (Beal and Delpachitra, 2003).

Table 5.1.3.8: Average scores across financial literacy categories: Income and debt

Demographic category	Average score				Total
	Mathematics & standard literacy	Financial understanding	Financial competence	Financial responsibility	
Income					
Under \$10,000	80.4	52.3	61.6	60.8	64.8
\$10,000 - \$14,999	81.5	57.6	62.9	62.9	66.9
\$15,000 - \$19,999	85.2	60.9	67.8	67.3	71.1
\$20,000 - \$29,999	86.7	61.4	70.0	70.5	73.0
\$30,000 - \$39,999	88.7	73.1	79.5	77.9	80.5
\$40,000 +	87.9	68.9	77.2	78.6	78.8
Debt					
Under \$5,000	81.3	54.4	62.8	62.0	66.1
\$5,000 - \$9,999	80.9	59.5	64.5	65.5	68.2
\$10,000 - \$14,999	86.4	59.5	69.6	69.1	72.2
\$15,000 - \$19,999	85.5	62.4	68.4	69.6	72.1
\$20,000 +	86.9	65.5	74.5	75.1	76.3

5.1.4 Financial literacy quintiles by demographic characteristics

Financial literacy quintiles were calculated in order to allow comparisons with the results of the ANZ study. Survey questions were designed to test several skills and areas of knowledge and students were given a total score based on their answers to these questions. Percentiles were calculated and the data were divided into five so that those students with a total score less than the value of the 20th percentile were placed in level 1 literacy (the lowest level) and those with a total score greater than the 80th percentile were placed in level 5 literacy (the highest level).

Table 5.1.4.1 below provides a summary of financial literacy quintiles by age group and gender. The results showed that older students (aged 31 years and over) were more likely to be in the highest quintile (quintile 5), with 42% of these students in this quintile. Approximately 40% of students aged less than 23 years and almost 50% of the students aged 23 to 25 years had low levels of financial literacy (quintiles 1 and 2). In contrast, less than 25% of the students aged 31 years or higher were in quintiles 1 and 2. These results are consistent with both the ANZ bank's research and the CBA's research that also found younger respondents had lower levels of financial literacy than older respondents (RMR, 2003; CBA, 2004). It is difficult to compare these results with those of Beal and Delpachitra (2003) as they did not discuss age in their findings as this variable was found to be insignificant and financial literacy quintiles were not calculated.

Overall, there was little difference between males and females across quintiles, although there were 6% more males than females in the higher quintiles (quintiles 4 and 5) and approximately 6% more females than males in the middle quintile (quintile 3). These results are not consistent with those of the ANZ bank that found females were over-represented in the lowest financial literacy quintile while males were over-represented in the highest quintile (RMR, 2003). Beal and Delpachitra (2003) also found that sex was a significant variable in their regression model and being male contributed to higher financial literacy scores. In contrast, the CBA's results showed that males were more likely to have lower financial literacy scores (CBA, 2004).

Table 5.1.4.1: Percentage of students in each financial literacy quintile by age group and gender.

Demographic category	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total (number)
Aged 19 years or less	19.3	19.7	20.1	27.0	13.9	259
Aged between 20 and 22 years	18.3	16.8	22.4	22.9	19.7	595
Aged between 23 and 25 years	29.2	19.9	16.0	17.8	17.1	281
Aged between 26 and 30 years	20.7	14.8	11.2	27.8	25.4	169
Aged between 31 and 40 years	8.5	13.2	8.5	25.5	44.3	106
Aged greater than 40 years	9.9	11.0	14.3	25.3	39.6	91
Total (number)	294	256	271	353	327	1,501
Female	18.9	17.8	20.3	22.7	20.3	890
Male	20.4	16.1	14.7	24.7	24.2	604
Total (number)	291	255	270	351	327	1,494

Table 5.1.4.2 below provides a summary of financial literacy quintiles by country of birth and first language. In quintile 1, students born overseas represented more than double the proportion of students born in Australia. This proportion was even higher for students whose first language was other than English. In contrast, students born in Australia and students whose first language was English represented a much higher proportion of students in quintile 5.

These results are consistent with the ANZ Bank's research that revealed respondents who spoke a language other than English at home were more likely to have lower levels of literacy (RMR, 2003). Chen and Volpe (1998) actually found that race and nationality were not significant and Beal and Delpachitra (2003) did not collect information on country of birth or languages spoken.

Table 5.1.4.2: Percentage of students in each financial literacy quintile by country of birth and first language.

Demographic category	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total (number)
Born in Australia	13.5	13.8	19.4	26.2	27.1	1,048
Born overseas	33.7	24.6	14.9	17.3	9.5	451
Total (number)	293	256	270	353	327	1,499
English first language	13.6	13.8	19.1	26.6	27.0	1,142
Other first language	39.0	28.0	14.7	13.0	5.4	354
Total (number)	293	256	270	350	327	1,496

Table 5.1.4.3 below provides a summary of financial literacy quintiles by study characteristics (that is, part-time/full-time and undergraduate/postgraduate status). These results were not directly comparable with other studies as Beal and Delpachitra (2003) only collected information about the area of study (business or non-business) and Chen and Volpe (1998) collected area of study and class rank. The information in this section and in the following section was collected to try to fill in some of the gaps by investigating particular details of study.

There was a much higher proportion of full-time students in the lower levels of literacy (quintiles 1 and 2) and a much higher proportion of part-time students in quintile 5. As mentioned above, this may be because students studying part-time might also be working part-time, meaning that they may be more exposed to financial concepts (as apposed to students studying full-time and not working). For example, being an employee is a major responsibility on its own, earning a salary and having more money (and possibly more debt), dealing with statements such as pay slips and superannuation all provide exposure that the unemployed may not obtain.

The percentage of undergraduate students was fairly evenly distributed across all quintiles although a high proportion (46%) were in the highest two levels (quintiles 4 and 5). Postgraduate research students had the highest proportion in quintile 5 (34%) and the lowest proportion in quintile 1 (14%). Postgraduate coursework students generally scored the least well, with 29% being in the lowest quintile and only 19% in the highest quintile.

In comparison, Chen and Volpe's survey of financial literacy among US college students found significant differences in literacy between students from different class ranks (that is, freshman, sophomore, junior, senior or graduate). Graduates generally scored better than undergraduates and both junior and senior students scored better than those from the lower ranks (Chen and Volpe, 1998).

Table 5.1.4.3: Percent of students in each financial literacy quintile by type of study.

Demographic category	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total (number)
Studying part-time	8.5	9.3	14.0	24.2	44.1	236
Studying full-time	21.6	18.6	18.8	23.4	17.6	1,255
Total (number)	291	255	269	351	325	1,491
Undergraduate student	18.2	16.4	19.3	25.1	21.1	1,161
Postgraduate coursework student	28.7	23.3	12.6	16.1	19.3	223
Postgraduate research student	14.3	12.5	16.1	23.2	33.9	112
Total (number)	291	256	270	353	326	1,496

Table 5.1.4.4 below provides a summary of financial literacy quintiles by year of study. It was anticipated that as students progressed through to completion of their degree that their literacy would improve. Generally, this appears to be the case, as the proportion of students in quintile 1 decreased with year of study, and the proportion of students in quintile 5 increased with year of study.

There was little difference between the literacy levels of final year students and non-final year students in terms of financial literacy quintiles. It was not possible to compare these results with the literature as this information was not collected in previous studies.

Table 5.1.4.4: Percentage of students in each financial literacy quintile by year of study and final year status

Demographic category	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total (number)
First year student	24.4	19.7	17.4	22.4	16.2	513
Second year student	20.1	20.1	17.6	23.3	19.1	404
Third year student	15.8	13.4	20.4	27.1	23.3	373
Fourth year or higher student	13.8	11.3	15.8	21.2	37.9	203
Total (number)	293	255	268	353	324	1,493
Final year student	20.6	16.3	17.2	24.4	21.5	344
Not final year student	19.2	17.3	18.4	23.4	21.6	1,128
Total (number)	288	251	267	348	318	1,472

Detailed information was collected regarding the area of study and Table 5.1.4.5 provides a summary of financial literacy quintiles by the nine most common areas of study and business students (included out of interest). Both Beal and Delpachitra (2003) and Chen and Volpe (1998) also collected information on area of study but results were only recorded at the broad level (that is, either 'business' or 'non-business' students). Hence direct comparisons were not possible.

Results from both of the above studies revealed that students studying business generally had higher literacy than students studying non-business. Interestingly, the results in Table 5.1.4.5 showed that students studying business were actually among those that had low literacy, with only 9% of these students having the highest level of literacy (quintile 5) and 34% having the lowest level of literacy (quintile 1). This contrast could be, however, due to the way in which other studies categorised

students into the two groups ('business' or 'non-business'). For example, the 'business' group could have comprised accounting and finance students, as well as business, economics and information technology students. As this composition was not available, no assumptions could be made and therefore no direct comparisons were made.

Table 5.1.4.5: Percentage of students in each financial literacy quintile by area of study: Nine most common areas

Demographic category	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total (number)
Accounting and finance			9.6	17.7	30.1	209
Education			20.6	22.9	22.9	131
Information technology and computer science			14.4	15.3	19.8	111
Management and marketing			22.1	21.2	24	104
Psychology			23	29.9	23	87
Biomedical science	8.3	22.2	26.4	27.8	15.3	72
Nursing			23.9	19.7	15.5	71
Law			17.5	31.6	33.3	57
Civil, mining and environmental engineering			9.6	34.6	26.9	52
Business	34.3	22.9	8.6	25.7	8.6	35

Table 5.1.4.6 provides a summary of financial literacy quintiles by employment details. Students who had been in the workforce had a much higher proportion in quintile 5 than students who had never been in the workforce. These results were consistent with Beal and Delpachitra (2003) as they collected information about workforce experience and found this variable was significant in their regression model and the model revealed that higher financial literacy was positively associated with workforce experience.

The ANZ Bank's survey collected information regarding the type of employment and found that professionals had higher levels of literacy and both unskilled workers and those looking for work had lower levels of literacy (RMR, 2003). The CBA's

research also found that those respondents who had never been in paid employment had lower financial literacy scores (CBA, 2004).

Students working full-time had a much higher proportion (45%) in quintile 5 than other students while unemployed students had a higher proportion in quintile 1 (27%).

Table 5.1.4.6: Percentage of students in each financial literacy quintile by employment characteristics

Demographic category	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total (number)
Has been in the workforce	17.6	15.9	18.5	24.8	23.2	1,347
Has never been in the workforce	38.5	28.7	14.0	13.3	5.6	143
Total (number)	292	255	269	353	321	1,490
Unemployed	27.3	20.3	17.3	21.5	13.8	429
Employed casual	16.5	15.7	20.7	26.2	20.9	623
Employed part-time	20.9	18.4	18.4	20.6	21.7	277
Employed full-time	9.4	11.9	9.4	24.4	45.0	160
Total (number)	294	256	271	351	326	1,498

Table 5.1.4.7 provides a summary of financial literacy quintiles by living situation and main source of income. Students who owned their own home, either with or without a mortgage, were more likely to be in quintiles 4 and 5 than other students. Students living rent-free, renting with others or boarding with family/friends were more likely to be in quintiles 4 and 5. The ANZ Bank (RMR, 2003) also found that renters had lower than average levels of literacy.

Students whose main source of income was parental/family support were more likely to have lower levels of literacy and students whose main income source was spouse/partner income were more likely to have higher levels of literacy.

Table 5.1.4.7: Percentage of students in each financial literacy quintile by living situation and main income source.

Demographic category	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total (number)
Living at home with parents/family	15.9	17.9	22.4	24.8	19.0	621
Own home (with mortgage)	7.0	6.1	8.8	29.8	48.3	114
Own home (no mortgage)	7.4	0.0	18.5	22.2	51.9	27
Living in house/unit rent free	32.3	19.4	3.2	38.7	6.5	31
Renting alone	17.8	21.8	16.8	17.8	25.7	101
Renting with other(s)	25.9	18.3	15.4	22.8	17.7	487
Boarding with family/friends	18.8	18.8	27.1	20.8	14.6	48
Other living situation	33.9	17.7	14.5	12.9	21.0	62
Total (number)	293	255	269	353	321	1,491
Salary/Wages	15.1	14.1	18.5	26.1	26.3	697
Government allowance/payments	15.6	16.4	19.7	25.4	23.0	244
Parental/family support	31.4	26.4	17.0	17.0	8.2	405
Spouse/Partner income	6.9	2.8	12.5	33.3	44.4	72
Other income source	21.0	12.9	16.1	24.2	25.8	62
Total (number)	288	255	265	352	320	1,480

Table 5.1.4.8 provides a summary of financial literacy quintiles by total amount of income and debt. Generally, as income and debt levels increased, so did literacy levels. This was consistent with previous studies including the ANZ Bank (RMR, 2003), Beal and Delpachitra (2003), the CBA (2004) and Chen and Volpe (1998).

In summary, the results were positive overall, indicating that UOW students had a good understanding of financial terms and concepts as well as good levels of skill across the four main categories of literacy. However, when examining the average scores across the four categories, some were answered better than others. In particular, the financial understanding category was answered the least well, with an overall average score of just 58% and a median score of 63%. The financial competence and responsibility categories were the next best answered, with average scores of around 65% and the mathematics and standard literacy category was the best answered, with an overall average and median score of 83%.

Table 5.1.4.8: Percentage of students in each financial literacy quintile by income and debt.

Demographic category	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total (number)
Income under \$10,000	23.6	22.9	19.3	21.6	12.5	694
\$10,000 - \$14,999	20.4	16.1	20.4	25.5	17.6	279
\$15,000 - \$19,999	16.2	12.0	18.6	29.3	24.0	167
\$20,000 - \$29,999	14.9	10.7	15.7	24.0	34.7	121
\$30,000 - \$39,999	1.9	13.2	13.2	28.3	43.4	53
\$40,000 +	8.1	6.1	10.1	22.3	53.4	148
Total (number)	279	253	263	347	320	1,462
Debt under \$5,000	22.4	18.9	19.7	21.8	17.2	834
\$5,000 - \$9,999	20.4	16.8	18.4	24.5	19.9	196
\$10,000 - \$14,999	10.2	18.3	20.4	29.9	21.2	137
\$15,000 - \$19,999	16.2	12.2	17.6	28.4	25.7	74
\$20,000 +	9.0	11.9	10.9	27.0	41.2	211
Total (number)	272	250	264	349	317	1,452

Questions were developed to test students' knowledge or skills regarding several areas of financial literacy and, when considering the actual scores for each individual question, particular areas of knowledge or skill were highlighted as being answered very poorly. For example, students showed very little understanding of the difference between secured and unsecured debt, with only 29% of respondents answering this question correctly. Other questions that were answered particularly poorly included a question about term deposits and a question about CTP Green Slip insurance, where only 36% and 40% of students (respectively) answered correctly.

The results also highlighted that students with certain demographic characteristics scored poorly compared to other students. For example, one of the largest differences was found in country of birth and first language spoken, where students born in Australia had an overall average score of 72% compared to just 60% for those born Overseas. Students who indicated English as their first language had an overall average score of 72% whilst students whose first language was not English had an

overall score of just 57%. Older students (more than 30 years old) scored better on average than younger students and students studying part-time scored better than those studying full-time. Financial literacy scores increased with year of study and there were also differences in average financial literacy scores between students studying different disciplines. Students studying librarianship, medicine and music and drama generally scored poorly whilst students studying psychology, law and economics and information systems scored well. In addition, employed students scored better than unemployed students and average financial literacy scores tended to improve as levels of income and debt increased.

5.1.5 Summary

The overall results showed that UOW students have a good level of financial literacy. In particular, students were competent at performing arithmetic calculations and also showed a high level of understanding of certain concepts such as direct debit payments, credit ratings and responsibilities regarding secondary credit card holders.

However, there are certain areas where students lack understanding, knowledge or skills and there are also certain groups of students where financial literacy is poor. For example, the financial understanding category was poorly answered overall and 25% of students failed this category and 25% of students also failed the financial responsibility category. Some of the highlighted specific areas of literacy where students scored poorly included: secured versus unsecured debt; debit cards; investments and CTP Green Slip insurance. In addition, a major highlight was that students born overseas and/or whose first language was other than English scored particularly poorly.

The next section compares the results in more detail with Roy Morgan's research for the ANZ Bank (RMR, 2003) that investigated the financial literacy levels of the Australian adult population.

5.2 How do UOW students compare to the Australian population?

As mentioned above, financial literacy quintiles were calculated by dividing students into five groups based on their total score. This methodology was consistent with the ANZ Bank's research and enabled comparisons between the two studies to be made. It should also be noted that the ANZ Bank's research used only descriptive statistics to present their results and hence only descriptive statistics were used to compare the UOW results with the ANZ results.

5.2.1 Comparison of demographic characteristics by quintiles

One of the major objectives of this research was to examine financial literacy levels across different groups of students to identify any groups that had particular socio-demographic characteristics that appeared to be experiencing financial literacy challenges. Hence an examination of demographic characteristics by financial literacy quintiles was performed and these results were compared to those of the ANZ Bank's.

Table 5.2.1.1 presents the results across each of the five financial literacy quintiles by selected demographic characteristics (those that were directly comparable between the UOW study and the ANZ study). The overall total percentage of students in each

quintile was not able to be compared to the Australian population as the ANZ survey results by quintiles were only recorded as percentages. Hence it was not possible to calculate the overall individual numbers within each quintile. Caution should be taken when interpreting the results in the following table as the numbers within individual cells may be small.

The ANZ survey results showed that females had lower financial literacy levels than males, with 24% of females in the lowest quintile compared to 15% of males. The highest quintile contained 25% of males compared to just 15% of females. The UOW survey results revealed little difference between the literacy levels of males and females.

Table 5.2.1.1: Proportion of respondents in each financial literacy quintile by selected demographic characteristics – UOW survey results and ANZ Bank survey results

	Quintile 1		Quintile 2		Quintile 3		Quintile 4		Quintile 5	
	UOW	ANZ	UOW	ANZ	UOW	ANZ	UOW	ANZ	UOW	ANZ
Female	19	24	18	22	20	21	23	18	20	15
Male	20	15	16	18	15	20	25	22	24	25
Aged 18-24	21	31	18	20	21	22	22	16	18	10
Aged 45-59	7	13	11	19	13	20	22	22	46	27
Aged 70 and over	25	31	13	23	25	19	25	13	13	14
Renting	24	29	19	22	16	22	22	15	19	12
Overall total	20		17		18		24		22	

5.2.2 Comparisons between specific areas of financial literacy

Several differences were found when comparing the results of specific areas of financial literacy between the two studies. As mentioned previously, the ANZ survey relied heavily on respondents rating their own knowledge or understanding of particular financial concepts. Hence it was suggested that the ANZ survey results

were more positive than other studies that did not rely heavily on respondents rating themselves but instead *tested* their knowledge or ability. Table 5.2.2.1 compares the results between specific areas of financial literacy and showed that this was the case for several of the areas although results for some of the areas were actually more negative for the ANZ survey. Some of the more prominent differences included arithmetic such as subtraction, division and multiplication where the UOW results were more positive, and understanding of bank cheques, mortgage insurance, guarantors, debit cards, CTP Green Slip insurance and term deposits, where the ANZ results were more positive.

Both surveys also attempted to investigate respondents' attitudes and perceptions towards different financial concepts and Table 5.2.2.2 presents a comparison of the results. UOW students were less likely to keep an eye on expenses as only 61% agreed that they always kept an eye on expenses whereas 76% of ANZ respondents agreed to this statement. UOW students were also less likely to feel well informed when making financial decisions (66% compared to 80%). Only 40% of ANZ respondents felt confident about making effective complaints against a financial institution compared to 59% of UOW students.

Table 5.2.2.1: Percentage of correct responses for each individual area of financial literacy – Comparison of UOW results and ANZ results

Specific area of financial literacy	Percentage of correct responses	
	UOW results	ANZ results
Addition	87	89
Subtraction	97	81
Division	99	84
Multiplication	97	59
Multiple operations	88	81
Percentages	93	87 to 89*
Bank cheque	70	94
Comprehension	86	90
Direct debit	95	88
Compound interest	70	67
Mortgage insurance	56	76
Averages	92	81
Guarantors	61	94
Debit cards	44	90
Credit cards & store cards	76	90
Using ATMs	60	90
Secured and unsecured debt	29	68
Superannuation contributions	77	91 to 97*
Superannuation tax	84	54
Early termination of loans	72	79
General insurance	65	83
Coverage of CTP Green Slip insurance	40	76
Risk and return	88	85
Danger of predicting future returns based on past returns	81	73
Investments	90	63
Term deposit	36	92
Financial product sales	75	59
Diversification	88	89
PIN security	80	89
Responsibilities of financial advisors	64	72
Insurance policy disclosures	88	91
Secondary credit card holders	91	75
Joint loan repayments	85	81
Likely cause of a bad credit rating	83	56

* There were 2 questions on this specific area in the ANZ survey.

Table 5.2.2.2: Percentage of respondents who agreed to certain statements regarding their attitudes and perceptions towards financial concepts – Comparison of UOW results and ANZ results

Attitudes and perceptions towards financial concepts	Percentage who agreed	
	UOW results	ANZ results
Always keep an eye on expenses	61	76
Have trouble setting money aside for major financial outlays	30	26
Spend all income as soon as received and don't really plan for the future	23	16
Felt out of control with borrowing and credit	17	7
Using a credit card is a convenient way to have something now, even if it costs interest	13	8
Both short and long term financial plans are important	92	80
Generally felt well informed when making financial decisions	66	80
Confident with ability to make effective complaints against a financial institution	59	40

5.2.3 Summary

The results showed that UOW students differ from the Australian population in terms of their level of financial literacy. Although the results of financial literacy quintiles by demographic characteristics were not directly comparable between the two studies (in many cases), the results showed however that there was little difference in literacy levels between male and female UOW students whereas females in the general Australian population were found to have lower literacy than males.

The results also compared specific areas of financial literacy between the two studies as well as attitudes and perceptions and it was found that many of the ANZ results were more positive than the UOW results although some were less positive. The next section compares UOW students with USQ students.

5.3 How do UOW students compare to USQ students?

This section compares the results of this study with Beal and Delpachitra's study of financial literacy amongst USQ students (Beal and Delpachitra, 2003). All respondents were categorised into two groups, those with low literacy and those with high literacy, based on their overall total score. This dichotomous variable was then used as the dependent variable in a logistic regression model and the demographic characteristics were used as the independent variables. This is the same method used by Chen and Volpe (1998) and was used to determine if any of the demographic characteristics were significant at predicting low and high levels of literacy.

Five models were individually tested: one for each of the four main categories of literacy and one full model that used the overall results across all categories. Only the full model can be compared to the results of Beal and Delpachitra as they used five main literacy categories that differed from the four main literacy categories used in the UOW study.

In addition, the demographic variables were tested for significance at predicting the overall financial literacy score by using a General Linear Model (GLM) with the total score variable as the dependent variable. This analysis was performed in addition to the logistic regression analysis as some degree of information is lost when categorising scores into a dichotomous variable (that is, low and high literacy). Hence it was considered to be valuable to further examine the demographic characteristics using the respondents' actual scores.

Table 5.3.1 summarises and compares the results of the analysis performed on the full model. Note that not all of the demographic characteristics (explanatory variables) are directly comparable between the two studies although all of the variables used in both studies have been included in the table. The results showed some similarities and some differences between the two studies. Both studies found workforce experience to be a significant variable in the logistic regression model and both studies found that employment status and major (business or other) were not significant variables. Age was found to be significant for UOW students but was not significant for USQ students. Both gender and income were found to be significant for USQ students but not for UOW students.

Differences were also found when comparing the results of the UOW study for both of the statistical models described above. When using a GLM instead of a logistic model, more variables were found to be significant. For example study load, year of study and area of study were significant at predicting the overall literacy score but were not significant at predicting low or high literacy. Interestingly, workforce experience was significant at predicting low or high literacy but was not significant at predicting the overall literacy score.

Table 5.3.2 compares the results across particular areas of financial literacy that were directly comparable between the two studies. The results indicated that USQ students had a better understanding of early loan withdrawal penalties, loan guarantees and CTP Green Slip insurance. In contrast, UOW students showed a better understanding of compound interest, risk and return, diversification and fixed and variable interest rates.

Table 5.3.1: Statistical results for the full model

Explanatory (independent) variable	Significant variables at 0.05 level (indicated by *****)		
	UOW – Using GLM and total score	UOW – Using logistic regression model	USQ – Using logistic regression model
Age	****	****	
Country of birth	****	****	Not tested
First language	****	****	Not tested
Gender			****
Study load	****		Not tested
Study type			Not tested
Year of study	****		Not tested
Education	Not tested	Not tested	
Workforce		****	****
Employment			
Usual occupation	Not tested	Not tested	
Living situation			Not tested
Household type	Not tested	Not tested	
Faculty	****	****	Not tested
Area of study	****		Not tested
Major (business or other)			
Income source	****	****	Not tested
Income			****
Debt			Not tested
Risk preference	Not tested	Not tested	****

Table 5.3.2: Comparison of results across particular areas of literacy

Area of financial literacy	Percentage of correct responses	
	UOW study	USQ study
Compound interest	68.6	52.9
Risk and return	87.6	74.2
Diversification	88.4	58.5
Early withdrawal penalty	72.4	80.4
Loan guarantee	61.0	87.5
Fixed and variable rates	80.8	58.1
CTP Green Slip insurance	40.4	42.3

5.3.1 Summary

The results showed that there were some similarities and some differences in financial literacy between UOW and USQ students. In terms of predicting low and high levels of literacy, both studies found that workforce experience was significant

and that employment status and major were not significant. Results were compared between seven areas of financial literacy and UOW students scored better than USQ students in four of these areas. The next section examines financial literacy amongst UOW students across year of study to determine if financial literacy increases with progression to the completion of study.

5.4 Does financial literacy increase with progression to the completion of study?

This section examines whether financial literacy increases with progression to the completion of study. It may be that, as students progress through to completion of their degree, they become more knowledgeable and skilled in areas of financial literacy⁴. The overall financial literacy score and financial literacy quintiles are examined by year of study. In addition, statistical tests were performed to determine if the overall total score and the total scores for each of the four main categories of literacy differed significantly between students across year of study.

5.4.1 Results across financial literacy quintiles

Table 5.4.1.1 presents the overall average score by year of study and the proportion of students in each financial literacy quintile by year of study. The overall average score increased with year of study ranging from 65% for first year students to 73% for fourth year or higher students. The results across quintiles differed although a reversed pattern can be seen between quintile 1 and quintile 5, with the proportion of

⁴ However, this increase could be due to increased maturity and/or life experience but it is difficult to determine the exact causation.

students in quintile 1 decreasing with year of study and the proportion of students in quintile 5 increasing with year of study.

Table 5.4.1.1: Overall average score and average score for each financial literacy quintile by year of study

Year of study	Overall average score (%)	Percentage of students in each financial literacy quintile				
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
First year	65	24.4	19.7	17.4	22.4	16.2
Second year	68	20.1	20.1	17.6	23.3	19.1
Third year	70	15.8	13.4	20.4	27.1	23.3
Fourth year of higher	73	13.8	11.3	15.8	21.2	37.9

5.4.2 Statistical test results

As described earlier, GLMs were used to determine if there were any statistically significant differences in the financial literacy scores between students across year of study. A total of six dependent (or response) variables were used which included financial literacy quintile, the overall total score and the total scores for each of the four main categories of literacy. Table 5.4.2.1 summarises the results of this analysis and shows that each of these six models were significant, indicating that there were differences in scores between students across years of study. The p-value for the first model (using quintile as the dependent variable) was $<.0001$ which strongly indicated a statistically significant difference in financial literacy quintiles by year of study. Duncan's Multiple Range test (Duncan) indicated that the average scores for first and second year students were not significantly different from each other but the average scores for both third and fourth year students were significantly different from the average scores of all other students. On the other hand, Tukey's Studentized Range (HSD) test (Tukey) indicated that the average scores for first and second year students were not significantly different from each other, the average scores for second and third year students were not significantly different from each other, and

the average score for fourth year students was significantly different from the average scores of all other students.

From these results, it was concluded that there was a statistically significant difference in the number of students in each quintile across year of study and, in addition, the results of both Duncan and Tukey tests showed that the average scores between first and third year students were significantly different, as well as the average scores between first and fourth year students, second and fourth year students, and third and fourth year students. The actual average quintile scores increased with year of study which indicated that financial literacy increased with progression to the completion of study.

The results from the other five models also showed that there were statistically significant differences in the total scores for each of the four main categories of literacy (including the overall total score) across year of study. Both the Duncan and Tukey tests showed differing results although, as a general conclusion, both tests indicated that the average scores of first year students differed from fourth year students and the average scores of second year students different from fourth year students both overall and across all financial literacy categories. The actual average scores across categories and the overall average score increased with year of study which indicated once again that financial literacy increased with progression to the completion of study.

Table 5.4.2.1: Statistical results – Differences in scores between years of study

Dependent variable	P-value	Duncan test ^(a)	Tukey test ^(a)	Year of study	Average ^(b)	N
Financial literacy quintile	<.0001	A	A	4	3.58	203
		B	B	3	3.29	373
		C	B C	2	3.01	404
		C	C	1	2.86	513
Total score for mathematics & standard literacy	0.0008	A	A	4	10.25	203
		A B	A	3	10.07	373
		B C	A B	2	9.89	404
		C	B	1	9.66	513
Total score for financial understanding	<.0001	A	A	4	5.04	203
		A B	A B	3	4.85	373
		B	B	2	4.62	404
		C	C	1	4.15	513
Total score for financial competence	0.0009	A	A	4	11.97	203
		A B	A B	3	11.34	373
		B C	A B	2	11.15	404
		C	B	1	10.5	513
Total score for financial responsibility	0.0003	A	A	4	5.69	203
		A B	A B	3	5.38	373
		B C	B	2	5.11	404
		C	B	1	4.90	513
Overall total score	<.0001	A	A	4	32.96	203
		A B	A B	3	31.64	373
		B	B C	2	30.77	404
		C	C	1	29.22	513

(a) Averages with the same letter are not significantly different

(b) Refers to the average score of the dependant variable

5.4.3 Summary

The overall average financial literacy score and financial literacy quintiles were examined by year of study and the results showed that there were statistically significant differences in scores and quintiles between students in different years of study. In general, the results indicated that financial literacy increased with year of study, meaning that student's financial literacy increased with progression to the completion of study. The next section examines whether financial literacy differs between students studying different disciplines.

5.5 Does financial literacy differ between students studying different disciplines?

This section examines whether financial literacy differs between students studying different disciplines. The overall financial literacy score and financial literacy quintiles were examined by both area of study and faculty of study. In addition, statistical tests were performed to determine if the overall total score and financial literacy quintiles differed significantly between students studying different disciplines.

5.5.1 Results across financial literacy quintiles

Table 5.5.1.1 presents the overall average score by area of study and the proportion of students in each financial literacy quintile by area of study. The overall average score differed between students studying different areas, ranging from 63% for students studying business to 75% for students studying psychology. The results across quintiles differed across areas of study with a higher proportion of both business and accounting and finance students in quintile 1 (the lowest level) and a higher proportion of both law and accounting and finance students in quintile 5 (the highest level). These results indicated that students studying accounting and finance either scored very poorly or scored very well. In contrast, biomedical and nursing students were more likely to have mid-range levels of financial literacy, with a higher proportion of these students in quintile 3 (the middle level).

Table 5.5.1.1: Overall average score and average score for each financial literacy quintile by area of study

Area of study	Overall average score	Percentage of students in each financial literacy quintile				
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Accounting and finance	68	26.3	16.3	9.6	17.7	30.1
Education	71	13.7	19.9	20.6	22.9	22.9
Information technology and computer science	64	27	23.4	14.4	15.3	19.8
Management and marketing	68	19.2	13.5	22.1	21.2	24
Psychology	75	8.1	16.1	23	29.9	23
Biomedical science	72	8.3	22.2	26.4	27.8	15.3
Nursing	66	21.1	19.7	23.9	19.7	15.5
Law	74	12.3	5.3	17.5	31.6	33.3
Civil, mining and environmental engineering	70	21.2	7.7	9.6	34.6	26.9
Business	63	34.3	22.9	8.6	25.7	8.6

Students were also grouped into faculties based on their major area of study and Table 5.5.1.2 presents the overall average score by faculty of study and the proportion of students in each financial literacy quintile by faculty of study. The overall average score differed between students studying in different faculties, ranging from 63% for students studying in the Faculty of Business or the Faculty of Creative Arts to 74% for students studying in the Faculty of Law. The results across quintiles differed across faculties with a higher proportion of both Business and Informatics students in quintile 1 (the lowest level) and a higher proportion of both Commerce and Law students in quintile 5 (the highest level).

Table 5.5.1.2: Overall average score and average score for each financial literacy quintile by faculty of study

Faculty of study	Overall average score	Percentage of students in each financial literacy quintile				
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Arts ^(a)	68.3	16.5	18.7	20.9	25.9	18
Business ^(b)	63.0	34.3	22.9	8.6	25.7	8.6
Commerce ^(c)	68.2	22.9	14.5	14.8	20.3	27.5
Creative Arts ^(d)	63.0	24.4	20.5	23.1	21.8	10.3
Education ^(e)	70.8	13.7	19.8	20.6	22.9	22.9
Engineering ^(f)	70.7	15.7	14	14.9	32.2	23.1
Health & Behavioural Sciences ^(g)	68.7	17.7	17.2	21.5	24.9	18.7
Informatics ^(h)	65.2	26.5	20.4	13.8	17.1	22.1
Law ⁽ⁱ⁾	73.5	12.3	5.3	17.5	31.6	33.3
Science ^(j)	69.2	16	18.6	21.6	26.3	17.5

(a) Includes: 'English literatures, philosophy and language', 'History', 'Librarianship', 'Politics', and 'Social sciences, media and communication'.

(b) Includes: 'Business'.

(c) Includes: 'Accounting and finance', 'Economics and information systems', and 'Management and marketing'.

(d) Includes: 'Art and design', 'Journalism and creative writing', and 'Music and drama'.

(e) Includes: 'Education'.

(f) Includes: 'Civil, mining and environmental engineer', 'Mechanical and materials engineering', and 'Physics'.

(g) Includes: 'Medicine', 'Nursing', 'Psychology', and 'Public health'.

(h) Includes: 'Electrical, computer and telecommunications', 'Information technology and computer science' and 'Mathematics and applied statistics'.

(i) Includes: 'Biological sciences', 'Biomedical science', 'Chemistry' and 'Earth and environmental sciences'.

(j) Includes 'Law'.

5.5.2 Statistical test results

Table 5.5.2.1 summarises the results of the GLM analyses which were used to determine if there were any statistically significant differences in the total financial literacy scores and financial literacy quintiles between students studying different disciplines. Two models were analysed with the dependent variables being financial literacy quintile and overall total financial literacy score. Both models were found to be statistically significant and students studying law, psychology and civil, mining and environmental engineering had the top average quintile scores although both Duncan's and Tukey's tests indicated that there was no statistically significant difference in scores between these students.

When looking at the overall total score, psychology students had the highest average score and business students had the lowest. Both Duncan's and Tukey's tests indicated a significant difference in the average scores between these students.

Table 5.5.2.1: Statistical results – Differences in scores between areas of study

Dependent variable	P-value	Duncan test ^(a)	Tukey test ^(a)	Area of study	Average ^(b)	N
Financial literacy quintile	0.0005	A	A	Law	3.68	57
		A B	A B	Psychology	3.44	87
		A B C	A B	Civil, mining and environmental engineering	3.38	52
		A B C D	A B C	Education	3.21	131
		A B C D	A B C	Biomedical science	3.19	72
		A B C D	A B C	Management and Marketing	3.17	104
		B C D	A B C	Accounting & Finance	3.09	209
		C D E	B C	Nursing	2.89	71
		D E	B C	Information Technology & Computer Science	2.77	111
		E	B C	Business	2.51	35
Overall total score	0.007	A	A	Psychology	33.77	87
		A B	A B	Law	33.09	57
		A B C	A B	Biomedical science	32.26	72
		A B C D	A B	Education	31.85	131
		A B C D	A B	Civil, mining and environmental engineering	31.44	52
		A B C D	A B	Management and Marketing	30.54	104
		A B C D	A B	Accounting & Finance	30.43	209
		B C D	A B	Nursing	29.76	71
		C D	A B	Information Technology & Computer Science	28.98	111
		D	B	Business	28.37	35

(a) Averages with the same letter are not significantly different

(b) Refers to the average score of the dependant variable

Analyses were also performed to test if there were any significant differences in quintiles and overall total scores between students studying in different faculties and Table 5.5.2.2 summarises the results. The overall model using financial literacy quintile as the dependent variable indicated that there were statistically significant differences in scores between students studying in different faculties, with a p-value of just 0.0004. Students studying in the Faculty of Law, the Faculty of Engineering

and the Faculty of Education had the top three higher average quintile scores and both Duncan's and Tukey's tests indicated no significant difference in quintiles between these students. Students studying in the Faculty of Business scored the lowest on average and both tests indicated a significant difference in quintiles between these students and students studying law (the highest scoring students).

Table 5.5.2.2: Statistical results – Differences in scores between faculties of study

Dependent variable	P-value	Duncan test ^(a)	Tukey test ^(a)	Faculty of study	Average ^(b)	N
Financial literacy quintile	0.0004	A B	A B	Law	3.68	57
		A B C	A B C	Engineering	3.33	121
		B C	A B C	Education	3.21	131
		B C	A B C	Commerce	3.15	345
		B C	A B C	Science	3.11	194
		B C	A B C	Arts	3.10	139
		B C	A B C	Health & Behavioural Sciences	3.10	209
		C D	B C	Informatics	2.88	181
		C D	C	Creative Arts	2.73	78
		D	C	Business	2.51	35
Overall total score	0.042	A B	A	Law	33.09	57
		A B C	A	Education	31.85	131
		A B C	A	Engineering	31.82	121
		A B C	A	Science	31.15	194
		A B C	A	Health & Behavioural Sciences	30.92	209
		A B C	A	Arts	30.73	139
		A B C	A	Commerce	30.70	345
		B C	A	Informatics	29.34	181
		C	A	Creative Arts	28.37	78
		C	A	Business	28.37	35

(a) Averages with the same letter are not significantly different

(b) Refers to the average score of the dependant variable

The overall model using the total score as the dependent variable also indicated that there were statistically significant differences in scores between students studying in different faculties, with a p-value of 0.042. However, when examining the results of

Tukey's test, these results showed no significant difference in scores between all faculties, although Duncan's test indicated several differences.

5.5.3 Summary

The results showed that there were statistically significant differences in financial literacy between students studying different disciplines and also between students studying in different faculties within the university. Financial literacy quintiles and the total score variable were used as the dependant variables and all of the models tested were significant, with p-values being less than 0.05 (the chosen level of significance). Students studying business had the lowest overall average score and students studying psychology had the highest. Financial literacy did not differ between students studying certain disciplines or between students studying in certain faculties and both Duncan and Tukey tests were used to summarise these results. The next section examines whether financial literacy differed between different types of educational attainment.

5.6 Does financial literacy differ between types of educational attainment (that is, undergraduate versus postgraduate students)?

5.6.1 Results across financial literacy quintiles

Table 5.6.1.1 presents the overall average score by type of study and the proportion of students in each financial literacy quintile by type of study. Postgraduate research students had the highest overall average score (74%), followed by undergraduate students (69%) and postgraduate coursework students (63%). Postgraduate coursework students were more likely to be in the lower two quintiles while

undergraduates and postgraduate research students were more likely to be in the two higher quintiles.

Table 5.6.1.1: Overall average score and average score for each financial literacy quintile by type of study

Type of study	Overall average score	Percentage of students in each financial literacy quintile				
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Undergraduate	68.9	18.2	16.4	19.3	25.1	21.1
Postgraduate Coursework	63.3	28.7	23.3	12.6	16.1	19.3
Postgraduate research	73.9	14.3	12.5	16.1	23.2	33.9

5.6.2 Statistical test results

GLM models were also used to determine if there were any statistically significant differences in the financial literacy scores between undergraduate and postgraduate students (both coursework and research). A total of six dependent (or response) variables were used which included financial literacy quintile, the overall total score and the total scores for each of the four main categories of literacy. Table 5.6.2.1 summarises the results of this analysis and all of the six models were found to be significant. Both Duncan's and Tukey's tests indicated a significant difference between all three types of students across financial literacy quintiles and overall total score. Results differed between the two tests for the other four models (scores across financial literacy categories), although generally, it was found that there was no significant difference in scores between postgraduate research and undergraduate students and there was a significant difference in scores between postgraduate coursework students and other students (with the latter students scoring the lowest on average).

Table 5.6.2.1: Statistical results – Differences in scores between type of educational attainment

Dependent variable	P-value	Duncan test ^(a)	Tukey test ^(a)	Type of study	Average ^(b)	N
Financial literacy quintile	<.0001	A	A	Undergraduate	3.15	1,161
		B	B	Postgraduate Coursework	2.74	223
		C	C	Postgraduate Research	3.50	112
Total score for mathematics & standard literacy	<.0001	A	A	Undergraduate	3.15	1,161
		B	B	Postgraduate Coursework	2.74	223
		C	A	Postgraduate Research	3.50	112
Total score for financial understanding	<.0001	A	A	Undergraduate	3.15	1,161
		B	A	Postgraduate Coursework	2.74	223
		C	B	Postgraduate Research	3.50	112
Total score for financial competence	0.0026	A	A B	Undergraduate	3.15	1,161
		B	B	Postgraduate Coursework	2.74	223
		A	A	Postgraduate Research	3.50	112
Total score for financial responsibility	0.0002	A	A	Undergraduate	3.15	1,161
		B	B	Postgraduate Coursework	2.74	223
		A	A	Postgraduate Research	3.50	112
Overall total score	<.0001	A	A	Undergraduate	3.15	1,161
		B	B	Postgraduate Coursework	2.74	223
		C	C	Postgraduate Research	3.50	112

(a) Averages with the same letter are not significantly different

(b) Refers to the average score of the dependant variable

5.6.3 Summary

The results indicated that there was a statistically significant difference in financial literacy between undergraduate and postgraduate (both research and course work) students, both in terms of financial literacy quintiles and scores across categories of literacy. Generally, postgraduate research students had higher average scores than other students and postgraduate course work students had lower averages scores. The next section provides a summary of this chapter.

5.7 Conclusion

This chapter investigated the financial literacy of UOW students in order to make a conclusion as to how financially literate Australian university students are. There were six specific sub-questions used to investigate the financial literacy of UOW students and hence address the overall question 'How financially literate are Australian university students'.

The first sub-question was 'How financially literate are UOW students?'. To answer this question, overall financial literacy scores and scores across each of the four major categories of literacy were examined. In addition average scores and financial literacy quintiles were examined by student's demographic characteristics. In general, the results were quite positive revealing that many UOW students have a good level of financial literacy. However, there were several areas highlighted where literacy was poor and also certain groups of students with low literacy. The overall average score was 68% and scores across literacy categories revealed that students scored best at mathematics and standard literacy (average score of 83%) and worst at financial understanding (average score of just 57%). An alarming result is that 25% of students scored below 50% in the financial understanding and the financial responsibility categories. Specific areas of knowledge and/or skill where students scored poorly included: mortgage insurance; secured versus unsecured debt; debit cards; investments; CTP Green Slip insurance, and consumer's rights when cancelling a new insurance policy. When examining literacy scores across demographic characteristics, the major highlight was that students born overseas and/or whose first language was other than English scored far worse than students born in Australia and/or whose first language was English. This was the case across

all major areas of financial literacy and also when looking at financial literacy quintiles.

The second question was 'How do UOW students compare to the Australian population?' and this included comparing the results of the UOW study with the ANZ bank's study which consisted of a comparison of demographic characteristics by financial literacy quintiles and between specific areas of financial literacy (where a comparison was possible). Some differences in the results between the two studies were noted. For example, the ANZ results showed that females were over represented in the lowest financial literacy quintile while males were over represented in the highest quintile. The UOW study however showed very little difference between the literacy levels of female and male students. When comparing the results across specific areas of financial literacy, the ANZ results were more positive across several areas including; bank cheques; mortgage insurance; guarantors; debit cards; CTP Green Slip insurance, and term deposits. The UOW results were more positive for arithmetic including subtraction, division and multiplication. Results also revealed that UOW students were less likely to keep an eye on expenses than the general Australian population and were also less likely to feel well informed when making financial decisions whereas Australians were less likely to feel confident about making effective complaints against financial institutions.

The next question was 'How do UOW students compare to USQ students?' and included a comparison between the UOW study and the USQ study (Beal and Delpachitra, 2003). The results showed that there were some similarities and some differences in financial literacy between UOW and USQ students. Statistical tests

were performed and in terms of predicting low and high levels of literacy, both studies found that workforce experience was significant and that employment status and major were not significant. The results were compared between seven specific areas of financial literacy and revealed that UOW students scored better than USQ students in four of these areas.

The fourth question was 'Does financial literacy increase with progression to the completion of study?' and included examining the scores for students in different years of study across financial literacy quintiles and performing statistical tests to further investigate the relationship between financial literacy and year of study. The results showed that there were statistically significant differences in scores and quintiles between students in different years of study. In general, the results indicated that financial literacy increased with year of study, meaning that student's financial literacy increased with progression to the completion of study.

The next question was 'Does financial literacy differ between students studying different disciplines?' and included the same methodology as above. The results showed that there were statistically significant differences in financial literacy between students studying different disciplines and also between students studying in different faculties within the university. Students studying business had the lowest overall average score and students studying psychology had the highest. Both business students and accounting and finance students were more likely to be in the lowest financial literacy quintile and students studying law and accounting and finance were more likely to be in the highest quintile. In addition, students studying in the Faculty of Business or the Faculty of Arts scored had the lowest average scores

while students studying in the Faculty of Law, the Faculty of Education or the Faculty of Engineering had the highest average scores.

The final question was 'Does financial literacy differ between types of educational attainment (that is, undergraduate versus postgraduate students)?' and once again, included the same methodology as above. The results indicated that there was a statistically significant difference in financial literacy between undergraduate and postgraduate (both research and course work) students, both in terms of financial literacy quintiles and scores across categories of literacy. Generally, postgraduate research students had higher average scores than other students and postgraduate course work students had lower averages scores.

Overall, the results to the above six questions indicated that UOW students have a good level of financial knowledge and skills although there were several specific areas of financial literacy where students scored poorly. By expanding their knowledge and improving their skills in these particular areas, could better prepare students for success in life after graduation. For example, the CBA found that improving financial literacy would lower the probability of unemployment, mean better health, being able to pay bills on time and mean higher annual income (CBA, 2004). This could be achieved through the development of a financial literacy educational program made available to all UOW students to complete prior to graduation and could focus on the specific areas where a lack of understanding and/or skill was found. Ideally, over time, all universities across Australia would follow the UOW's lead and implement a similar program, preparing all Australian university students for success after graduation. The need for such a program is becoming more and more urgent in modern society where the availability and

diversity of financial products and services is growing rapidly and technological advancements are rapidly occurring.

The results in this chapter also revealed that students with certain demographic characteristics have lower levels of literacy than other students. The most prominent being that students born overseas and/or whose first language was other than English scored much lower than other students. It was suggested that this may be partly due to communication barriers due to a poor understanding of English and of Australian products, services and policies. It may be worthwhile developing a separate learning module for International students to help overcome these barriers.

The next chapter discusses the results of the second main research question to investigate how students' perceptions of the knowledge and skills compare to their actual demonstrated knowledge and skills.

Chapter 6

Research question 2: Results and discussion

The previous chapter examined how financially literate UOW students were in attempt to answer the first research question. This chapter presents the results of the analyses performed in attempt to answer the second research question 'How do university students' perceptions of their financial knowledge/skill compare with their actual knowledge/skill?'.

One of the criticisms of the ANZ Bank's national survey of financial literacy is that it relied heavily on respondents assessing their own levels of financial knowledge and skill, rather than actually testing them based on a pre-determined standard or benchmark. In recognising the possible anomalies of using such methodology, the UOW survey was designed not only to test students' level of financial knowledge and skills but also to compare their own perceptions with their actual scores. In addition, the survey examined respondents' attitudes towards certain financial concepts such as planning, budgeting, savings, borrowing, debt, retirement and investing. Survey questions 1 and 2 related to students own perceptions of their understanding and confidence respectively and question 3 related to attitudes.

This chapter examines the responses to these three questions and is divided into three sections. First, the responses to question 1 of the survey (how well students understood specific concepts) are presented, including a comparison with their actual scores for all relevant 'testing' questions. This is followed by a discussion of the responses to question 2 (how confident they were at performing specific tasks)

and also includes a comparison with their actual scores. Both of these sections present the results of Spearman's correlation analysis between the responses to survey questions 1 and 2 and the responses to the corresponding 'testing' questions. The final section of this chapter presents a discussion of students' attitudes (their responses to survey question 3).

6.1 Student's perceptions of their understanding

Table 6.1.1 presents the results for those respondents who indicated that they understood each area of knowledge/skill that was asked. Eighty-two percent of students indicated that they understood the term 'direct debit'. Of these, only 3% answered the corresponding question incorrectly which indicated that students' perception of their understanding of 'direct debit' was very similar to their actual understanding.

Conversely, 80% of students indicated that they had an understanding of different methods of payments but their actual scores showed a lack of understanding. For example, there were three questions that tested students understanding of payment methods and of those students who indicated that they understood, 55%, 22% and 19% were actually incorrect. These results indicated that a high proportion of students felt that they understand different payment methods when in fact they did not.

Only 58% of students indicated that they understood the relationship between risk and return, yet 92% of these students actually answered the corresponding question correctly.

Table 6.1.1: Responses to question 1 – Proportion of students who indicated that they understood the particular area of knowledge/skill and the corresponding proportion of correct and incorrect responses to all relevant testing questions

Area of knowledge/skill	Understand very well	Understand	% of total respondents	Incorrect	Correct	Total number who understood
Bank cheque	51	29	80	28	72	1,154
Compound interest	44	25	69	21	79	962
Direct debit	64	18	82	3	97	1,147
Mortgage insurance	24	24	48	40	60	654
Personal guarantor	28	27	56	32	68	750
Payment methods	43	37	80	55	45	1,083
	43	37	80	19	81	1,076
	43	37	80	22	78	1,077
Secured and unsecured debt	23	19	42	12	88	559
	23	19	42	61	39	551
How companies are financed	20	27	47	22	78	616
Superannuation	29	37	66	19	81	863
	29	38	66	23	77	868
	28	38	66	15	85	867
Insurance	42	39	81	59	41	1,046
	41	39	81	32	68	1,046
Fixed vs variable rates	47	29	76	20	80	987
Risk and return	30	28	58	8	92	752
Rights and responsibility	24	44	68	27	73	888
	24	44	68	31	69	884
	24	44	68	11	89	878
	24	44	68	18	82	882
	24	44	68	12	88	879
	24	44	68	8	92	880
	24	44	68	52	48	883
	24	44	68	13	87	881

Notes:

1. Each row in the table only includes those respondents who answered the self-rating question AND the corresponding testing question(s).
2. The total number of respondents should be considered when interpreting proportions as numbers may be relatively small.
3. All percentages are rounded to the nearest whole number.

Table 6.1.2 presents the results for those respondents who indicated that they didn't understand each area of knowledge/skill that was asked. Fifty-eight percent of students indicated that they didn't understand secured versus unsecured debt. There were two questions that tested students' understanding of this concept and of the 58% of students who indicated that they didn't understand this concept, 82% and 22% answered the corresponding question correctly.

Table 6.1.2: Responses to question 1 – Proportion of students who indicated that they did not understand the particular area of knowledge/skill and the corresponding proportion of correct and incorrect responses to all relevant testing questions

Area of knowledge/skill	Mildly understand	Don't understand at all	% of total respondents	Incorrect	Correct	Total number who didn't understand
Bank cheque	14	6	20	38	62	288
Compound interest	18	13	31	52	48	430
Direct debit	10	8	18	16	84	249
Mortgage insurance	30	22	52	48	52	708
Personal guarantor	22	23	44	47	53	601
Payment methods	15	5	20	59	41	271
	15	5	20	27	73	270
	15	5	20	35	65	270
Secured and unsecured debt	23	35	58	18	82	778
	23	35	58	78	22	771
How companies are financed	29	24	53	25	75	698
Superannuation	24	10	34	30	70	445
	24	10	34	31	69	441
	24	10	34	20	80	446
Insurance	17	2	19	61	39	248
	17	2	19	45	55	247
Fixed vs variable rates	16	8	24	18	82	308
Risk and return	23	20	42	19	81	555
Rights and responsibility	25	7	32	29	71	420
	25	8	32	38	62	421
	24	8	32	16	84	416
	25	7	32	23	77	419
	25	7	32	13	87	415
	25	7	32	11	89	415
	24	8	32	59	41	415
	25	8	32	20	80	418

Notes:

1. Each row in the table only includes those respondents who answered the self-rating question AND the corresponding testing question(s).
2. The total number of respondents should be considered when interpreting proportions as numbers may be relatively small.
3. All percentages are rounded to the nearest whole number.

In addition, there were two questions that tested students' understanding of insurance and only 19% of students indicated that they didn't understand this concept. Of these, 61% and 45% answered the questions incorrectly, showing a higher level of non-understanding. The above results showed that students' perceptions of their understanding often differed from their actual demonstrated

level of understanding, with some differences being positive while others were negative. This meant that students either thought they understood the concept but demonstrated that they didn't understand, or they didn't think they understood the concept but they demonstrated that they did understand.

As described in Chapter 3, Chi squared tests for contingency tables were performed to investigate whether or not students' perceptions of their understanding were independent of their actual demonstrated understanding. This was performed by producing a 2X2 contingency table for each area of knowledge/skill by comparing the percentage who answered correctly between the two categories of 'understand or understand very well' with those that 'mildly understand or do not understand at all'. The statistical significance of the association between these two variables was then tested using a Chi squared test. Table 6.1.3 shows the Chi squared statistic and the associated p-value and significance for each of the knowledge/skill areas presented above. Six tests were not significant at the 5% level of significance, showing no relationship (or independence) between students' perceptions of their understanding and their actual scores. Once again, this analysis provides evidence that there are differences between what students think they understand and what they actually demonstrate that they understand.

Table 6.1.3: Chi squared tests– Independence between student’s perceptions of their understanding (answers to question 1) and their scores for all relevant testing questions

Area of knowledge/skill	Chi squared statistic	P value	Significance (at 5% level)
Bank cheque	10.673	0.001	✓
Compound interest	135.294	0.000	✓
Direct debit	69.940	0.000	✓
Mortgage insurance	8.737	0.003	✓
Personal guarantor	31.333	0.000	✓
Payment methods	1.412	0.235	
	8.617	0.003	✓
	19.863	0.000	✓
Secured and unsecured debt	8.976	0.003	✓
	44.837	0.000	✓
How companies are financed	1.586	0.208	
Superannuation	20.387	0.000	✓
	9.850	0.002	✓
	5.215	0.022	✓
Insurance	0.300	0.584	
	14.744	0.000	✓
Fixed vs variable rates	0.662	0.416	
Risk and return	34.649	0.000	✓
Rights and responsibility	0.582	0.446	
	6.312	0.012	✓
	6.524	0.011	✓
	4.301	0.038	✓
	0.298	0.585	
	3.387	0.066	✓
	5.660	0.017	✓
	90.992	0.000	✓

In addition, Spearman correlation analysis was performed to further investigate the relationship between students’ perceptions of their understanding and their actual scores and Table 6.1.4 summarises the results of this analysis. There was a strong relationship between students’ perceptions and their actual scores, with all but five out of 22 correlations statistically significant at the 5% level of significance.

Spearman correlation is used as apposed to Pearson correlation as it is a non-parametric correlation method which is useful for categorical data. A correlation coefficient of -1 represents a perfectly negative relationship which would indicate that students were correct in their judgement. For example, if they indicated that they didn't understand and they answered the corresponding testing question(s) incorrectly or they indicated that they did understand and they answered the corresponding testing question(s) correctly. Conversely, a correlation coefficient of +1 represents a perfectly positive relationship which would indicate that students were wrong in their judgement. For example, if they indicated that they didn't understand and they answered the corresponding testing question(s) correctly or they indicated that they did understand and they answered the corresponding testing question(s) incorrectly. Alternatively, a correlation coefficient of zero would indicate that there is no relationship between students' perceptions and their actual scores. These concepts are best understood graphically and Figure 6.1.1 presents a graph which summarises the relationships between student's perceptions and their actual scores.

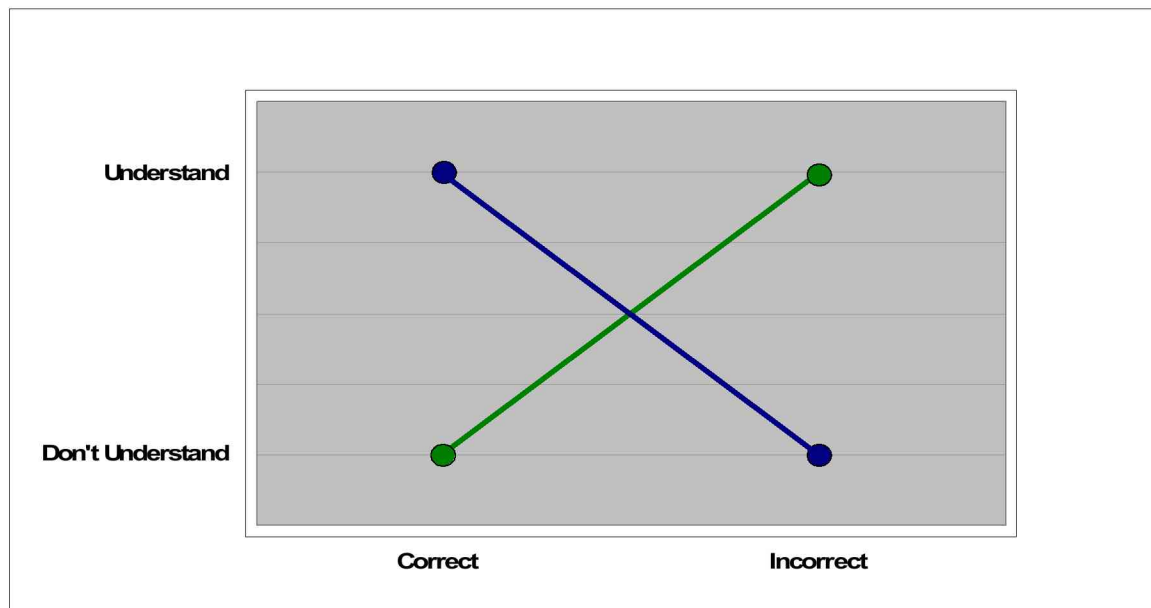
Although many of the correlation coefficients in Table 6.1.3 are relatively close to zero, the associated p-values indicated that there was a strong relationship between students' perceptions of their understanding and their actual scores to all relevant testing questions (in 21 out of 26 cases). A higher proportion of these correlations were negative although some were positive. When considering this analysis together with the descriptive analysis in Table 6.1.1 and Table 6.1.2 and the Chi squared tests, it was concluded that students' perceptions of their understanding differed to their actual demonstrated understanding (as determined by their responses to all relevant testing questions) to some degree.

These results highlight that it is not adequate to simply rely on respondents' rating their own levels of understanding when attempting to measure financial literacy. A combination of both self-rating and testing questions may be the better approach. This would enable an investigation of respondents' attitudes and perceptions as well as a more robust method of assessing financial literacy levels.

Table 6.1.3: Spearman Correlation analysis- Correlation between student's perceptions of their understanding (answers to question 1) and their scores for all relevant testing questions

Area of knowledge/skill	Spearman correlation coefficient	P value	Significant at 5% level
Bank cheque	-0.063	0.017	✓
Compound interest	-0.354	0	✓
Direct debit	-0.226	0	✓
Mortgage insurance	-0.094	0.001	✓
Personal guarantor	-0.174	0	✓
Payment methods	-0.073	0.007	✓
	-0.094	0.001	✓
	-0.115	0	✓
Secured and unsecured debt	-0.085	0.002	✓
	-0.183	0	✓
How companies are financed	-0.032	0.253	
Superannuation	-0.151	0	✓
	-0.087	0.002	✓
	-0.067	0.015	✓
Insurance	-0.056	0.043	✓
	-0.106	0	✓
Fixed vs variable rates	0.013	0.639	
Risk and return	-0.189	0	✓
Rights and responsibility	-0.041	0.135	
	-0.077	0.006	✓
	-0.068	0.015	✓
	-0.055	0.047	✓
	-0.021	0.443	
	-0.044	0.111	
	-0.092	0.001	✓
	-0.097	0.001	✓

Figure 6.1.1: Spearman correlation analysis: Example of the relationship between students' perceptions of their understanding and their actual scores



6.2 Students' perceptions of their confidence

Table 6.2.1 presents the results for those respondents who indicated that they were confident at performing particular tasks. Overall, students' perceptions of their confidence were reasonably consistent with their actual scores. For example, 90% of students indicated that they felt confident at performing arithmetic calculations. There were five questions that tested students' ability to perform arithmetic calculations. Of the 90% of students who indicated that they felt confident with arithmetic, 89%, 98%, 99%, 98% and 89% answered the corresponding testing questions correctly. In addition, 89% of students indicated that they felt confident with comprehension and of these, 87% answered the corresponding testing question correctly.

Table 6.2.1: Responses to question 2 – Proportion of students who indicated that they were confident performing the particular task and the corresponding proportion of correct and incorrect responses to all relevant testing questions

Particular task	Very confident	Confident	% of total respondents	Incorrect	Correct	Total number who were confident
Arithmetic	73	17	90	12	88	1,331
	73	17	90	2	98	1,331
	73	17	90	1	99	1,331
	73	17	90	2	98	1,327
	73	17	90	11	89	1,287
Percentages	71	20	90	5	95	1,297
Averages	74	17	91	6	94	1,235
Comprehension	60	30	89	13	87	1,250
Making effecting complaints	23	36	59	31	69	767

Notes:

1. Each row in the table only includes those respondents who answered the self-rating question AND the corresponding testing question(s).
2. The total number of respondents should be considered when interpreting proportions as numbers may be relatively small.
3. All percentages are rounded to the nearest whole number.

Table 6.2.2 presents the results for those respondents who indicated that they were not confident at performing specific tasks. Only 9% of students indicated that they were not confident at performing calculations involving averages, yet 80% of these students actually answered the corresponding testing question correctly.

Students were also asked if they felt confident at being able to make an effective complaint if they were unhappy with the service they received from their financial institution. Forty-one percent indicated that they did not feel confident and of these, 58% answered the corresponding question correctly.

Chi squared tests and Spearman correlation analysis were not performed between students' perceptions of their confidence and their actual ability as the descriptive analysis above showed little difference between the two and so it was concluded that students' perceptions of their confidence were consistent with their demonstrated abilities.

Table 6.2.2: Responses to question 2 – Proportion of students who indicated that they were not confident performing the particular task and the corresponding proportion of correct and incorrect responses to all relevant testing questions

Particular task	Mildly confident	Not confident at all	% of total respondents	Incorrect	Correct	Total number who were not confident
Arithmetic	6	4	10	21	79	150
	6	4	10	9	91	150
	6	4	10	5	95	150
	6	4	10	11	89	150
	6	4	10	20	80	145
Percentages	6	3	10	20	80	140
Averages	6	3	9	20	80	122
Comprehension	7	3	11	19	81	151
Making effecting complaints	29	11	41	42	58	524

Notes:

1. Each row in the table only includes those respondents who answered the self-rating question AND the corresponding testing question(s).
2. The total number of respondents should be considered when interpreting proportions as numbers may be relatively small.
3. All percentages are rounded to the nearest whole number.

6.3 Students' attitudes towards financial concepts

Table 6.3.1 presents students' attitudes towards several financial concepts and some alarming results were revealed. For example, 31% of students agreed that they often have trouble setting money aside for major financial outlays. Although the reason was unknown, it could be that they did not have the skills to enable them to plan and budget for expenses and this could have serious implications resulting in high levels of debt and financial stress related illness.

In addition, 24% of students agreed that they spend all of their money as soon as they get it and don't really plan for the future. More positively, 62% of students agreed that they always keep an eye on expenses and have a well-organised budgeting system. Ninety-three percent of students also agreed that it is important to

have both a long-term and a short-term financial plan, and 66% agreed that they generally felt well-informed when making financial decisions.

Table 6.3.1: Responses to survey question 3

Actual statement/question asked	Strongly agree (%)	Agree (%)	Disagree (%)	Strongly disagree (%)	Total number of respondents
I spend all of my money as soon as I get it and don't really plan for the future.	6	18	35	41	1,630
I always keep an eye on expenses and have a well-organised budgeting system.	21	41	30	9	1,627
I often have trouble setting money aside for major financial outlays.	10	21	35	34	1,616
Using a credit card to purchase a new TV is a good way to have something now, even if it costs interest.	4	10	22	65	1,628
I generally feel out of control when it comes to spending money and using credit or borrowing.	5	13	28	54	1,625
It is important to have both a long-term and a short-term financial plan.	66	27	4	3	1,623
Saving for retirement is not that important because the government will make up the gap.	4	8	29	60	1,626
When making financial decisions, I generally feel well-informed.	18	48	28	6	1,624
If you were presented with an investment which offered rates well above the market at no apparent risk, would you choose to invest?	Yes: 24	No, appears too good to be true: 76			1,324

The above results revealed that students generally had positive attitudes towards budgeting, planning and saving, but the results also revealed that many students have difficulty with spending and being able to cope with expenses.

6.4 Conclusion

This chapter revealed that students' perceptions of their knowledge/skill as they related to several financial concepts differed from their actual demonstrated knowledge/skill (as indicated by their scores to relevant testing questions). Some of these differences were positive while others negative, and Spearman correlation analysis confirmed these results. Conversely, students' perceptions of their ability to

perform particular tasks (such as arithmetic calculations) were generally consistent with their actual demonstrated ability. In addition, students' attitudes towards several concepts were examined and results showed that although students generally had positive attitudes towards budgeting, planning and saving, they also had difficulty with spending and being able to cope with expenses.

The above results illustrated that it is not best practice to simply rely on respondents' own judgement when measuring financial literacy. As mentioned earlier, more work needs to be undertaken in order to establish accurate and realistic benchmarks for the ongoing measurement of financial literacy and should include a framework consisting of perceptions, attitudes and testing rather than simply perceptions (or self-rating questions).

The following chapter summarises the overall findings of the study, discusses the limitations and provides some suggestions for further research into the measurement of financial literacy and educational programs in Australia.

Chapter 7

Conclusion

7.1 Concluding remarks

This research provides insight into the financial literacy levels of Australian university students by examining financial literacy among students studying at the UOW. It also attempts to fill in some of the gaps in the current literature by the administration of an extensive online financial literacy survey. The survey collected extensive details regarding study characteristics, demographic characteristics, attitudes and perceptions, as well as testing knowledge and skills across a range of specific areas of financial literacy. In addition, the survey results were compared to those of previous studies where possible and students' own perceptions of their knowledge and/or skills were compared against their actual demonstrated level of knowledge and/or skills.

A discussion of the literature showed that financial literacy has become an increasingly important research topic and although there have been several studies conducted which attempted to examine financial literacy levels and several programs developed to address the issue of low financial literacy, there is still a lot of work that needs to be done, especially in Australia where there has been very little financial literacy research conducted. The definition of financial literacy which has been used consistently in the literature is 'the ability to make informed judgments and to take effective decisions regarding the use and management of money', and was developed in the UK by the National Foundation for Education Research (Noctor, Stoney and Stradling, 1992, p.4).

Two studies conducted in the UK were discussed and both recognised that there are certain segments of the population in the UK that lack financial literacy. Schagen and Lines (1996) found that single parents and students were the least confident in their financial dealings and the AdFLAG (2000) study found that older and younger people, sole parents, ethnic minorities, people with disabilities and people living in social housing were particularly needy.

Several studies were conducted in the US and all generally indicated that financial literacy is poor among the US population. Cutler (1997) concluded that the American public were particularly ill informed about insurance, social security and health care. Moore (2003) found that consumers who had borrowed with a lender that recently settled in a large predatory lending case had less financial knowledge than the general population. In addition, Lusardi and Mitchell (2006) concluded that people with little financial knowledge are less likely to plan and to succeed in their planning. Both Joo and Garman (1998) and Chen and Volpe (2005) found that US employees would benefit from workplace financial education. Both high school and college students were also found to have poor levels of financial literacy, with both the NCEE (2005) biennial surveys and the Jump\$tart Coalition surveys indicating that financial literacy is poor among US high school students and also that there is a lack of financial literacy education in schools. Mandell (1997), Huddleston-Casas, Danes and Boyce (1999) and Williams-Harold (1999) also concluded that financial literacy is poor among US high school students. US college students were also found to have poor financial knowledge, with Chen and Volpe (1998) and Volpe, Chen and Pavlicko (1996) concluding that financial literacy is poor among US college students.

Only three financial literacy studies have been conducted in Australia (prior to this research) and the results differed between them. The ANZ survey results were

generally positive indicating that Australians are financially literate with only certain groups of people lacking skills, while the overall results of the CBA survey indicated that financial literacy of Australians is low. The CBA results were consistent with the findings of Beal and Delpachitra (2003) who concluded that financial literacy among Australian university students was low. Despite these differences, the findings of all three surveys showed that there is a definite lack of financial skills and knowledge among people with certain demographic characteristics.

There have been several attempts to address financial literacy including the annual Jump\$tart Coalition surveys and the FLEC in the US, and also the NRDC in the UK. Several financial literacy programs have also been established in Australia, most of which have been funded by financial institutions and Government agencies. Also in Australia was the Commonwealth Bank's establishment of the CBF, consumer education booklets offered by the ABACUS, the AFLA introduced by the EAA, the CFLT and CPA Australia together with the FBF. Although initiatives have been taken to address financial literacy there is still work to be done and it is expected that the focus will lean towards educational programs and the actual measurement of financial literacy.

In this study, two main research questions were developed from identifying several gaps in the literature. The first question was to investigate the level of financial literacy of Australian university students, with students studying at UOW being used as a case study. This research question was divided into six sub-questions to give a more extensive insight into financial literacy among Australian university students. The second main research question investigated the relationship between student's perceptions of their knowledge and/or skills and their actual demonstrated

abilities which added some insight into the way in which financial literacy is measured and information collected.

From the survey results, it was concluded that, while in general Australian university students have a good level of financial literacy, there are particular areas of financial literacy where students scored weakly and there are students with certain demographic characteristics who demonstrated low literacy. For example, areas where students scored weakly overall included: mortgage insurance; secured versus unsecured debt; debit cards; investments; CTP Green Slip insurance, and consumer's rights when canceling a new insurance policy. The overall average score was 68% and scores across financial literacy categories revealed that students scored best at mathematics and standard literacy (average score of 83%) and worst at financial understanding (average score of just 57%). An alarming result is that 25% of students failed the financial understanding and the financial responsibility categories. When examining literacy scores across demographic characteristics, the major highlight was that students born overseas and/or whose first language was other than English scored far worse than students born in Australia and/or whose first language was English.

In addition, the survey results were compared in detail to those of the ANZ Bank's national survey and Beal and Delpachitra's survey of USQ students. In general, the ANZ Bank's results were more positive and some differences in the results between the two studies were noted. For example, the ANZ results showed that females were over represented in the lowest financial literacy quintile while males were over represented in the highest quintile. The UOW study however showed very little difference between the literacy levels of female and male students. When comparing the results across specific areas of financial literacy, the ANZ results were more

positive across several areas including; bank cheques; mortgage insurance; guarantors; debit cards; CTP Green Slip insurance, and term deposits. The UOW results were more positive for arithmetic including subtraction, division and multiplication and UOW students were more likely to feel confident about making effective complaints against financial institutions. Results also revealed that UOW students were less likely to keep an eye on expenses than the general Australian population and were also less likely to feel well informed when making financial decisions.

There were both similarities and differences in financial literacy between UOW and USQ students. Statistical tests were performed and, in terms of predicting low and high levels of literacy, both studies found that workforce experience was significant and that employment status and major were not significant. The results were compared between seven specific areas of financial literacy and revealed that UOW students scored better than USQ students in four of these areas.

The methodology included examining students' scores across financial literacy quintiles in terms of their current year of study, their major area of study and their type of study and statistical tests were performed to further investigate the relationship between financial literacy and these study characteristics. The results showed that there were differences in scores and the proportions in quintiles between students in different years of study. In general, the results indicated that financial literacy increased with year of study, meaning that students' financial literacy increased with progression to the completion of study. However, it remains unknown how much, if any, of this improvement is due to increased maturity and/or life experience.

Statistically significant differences in financial literacy were also found between students studying different disciplines. Students studying business had the lowest overall average score and students studying psychology and law had the highest. Accounting and finance students were more likely to be either in the lowest financial literacy quintile or in the highest quintile. In addition, students studying in the Faculty of Business or the Faculty of Arts had the lowest average scores while students studying in the Faculty of Law, the Faculty of Education or the Faculty of Engineering had the highest average scores.

The results also indicated that there was a statistically significant difference in financial literacy between undergraduate and postgraduate (both research and course work) students, both in terms of financial literacy quintiles and scores across categories of literacy. Generally, postgraduate research students had higher average scores than other students and postgraduate course work students had lower average scores. It is important to note however that these results may be influenced by the higher proportion of postgraduate coursework students from a non-English speaking background as these students generally scored much lower than students from an English speaking background. For example, 40% of students from a non-English speaking background were postgraduate coursework students compared to just 7% of students from an English speaking background. Similar proportions were found with students' country of birth, with 35% of students born overseas being postgraduate coursework students compared to 6% of students born in Australia.

Results for the second research question revealed that students' perceptions of their knowledge/skill as they related to several financial concepts differed from their actual demonstrated knowledge/skill (as indicated by their scores to relevant testing

questions). Some of these differences were positive while others negative, and spearman correlation analysis confirmed these results. Conversely, student's perceptions of their ability to perform particular tasks (such as arithmetic calculations) were generally consistent with their actual demonstrated ability. In addition, students' attitudes towards several concepts were examined and results showed that although students generally had positive attitudes towards budgeting, planning and saving, they also had difficulty with spending and being able to cope with expenses. These results illustrated that it is not best practice to simply rely on respondents own judgement when measuring financial literacy and it was concluded that more work needs to be undertaken in order to establish accurate and realistic benchmarks for the ongoing measurement of financial literacy and this should include a framework consisting of perceptions, attitudes and testing rather than simply perceptions (or self-rating questions).

7.2 Limitations

Although this research was extensive and attempted to fill in some of the gaps in the current literature, some limitations were identified. First, an ethics approval had to be submitted before the online survey could proceed and, in addition, approvals for two consecutive emails to be sent out to all students were also required. The approval processes were very time-consuming and tedious and the desired outcomes were not entirely met. For example, no incentives such as prizes, gifts or cash were allowed to be offered to students for their participation which is believed may have impacted on the overall response rate. In addition, it was not possible to perform any data analysis such as student's scores via the survey website and several students wanted to obtain their scores. As individual student's responses were not able to be

identified, students remained unable to obtain their scores. As an alternative, these students were sent a list of the multiple choice questions and the correct answers after the survey period had expired.

The desired method of delivering the survey information to students was to place a generic message on the University's Student Online Services (SOLS) mail board but this was also not allowed. Instead, a personalised email was sent out to all students on the researcher's behalf by the survey administrator and this caused some major concerns for many students regarding privacy and whether or not their responses would remain anonymous. Several students were concerned about how their email addresses and names were known and why they had to use their student number to log on to the survey website. In order to address their concerns and rectify the situation, an explanation via email was then sent out directly by the survey administrator and some extra explanatory text was added to the front page of the survey website. A sample of the unidentifiable data obtained from the survey responses was also added to the bottom of the survey website for students viewing. These processes were successful in clarifying student's concerns, based on feedback from several students.

Ideally, students from universities across Australia would have been used to form a survey sample population to represent all Australian universities, however this was not possible. This would have required many more ethics applications and approvals and was beyond the time available for research. However, this research could be used in future research as a large pilot study.

Another limitation of the survey, as with most surveys, is the issue of incomplete responses. For example, not all students answered all of the questions and it is difficult to make any assumptions as to why they did not answer all of the questions. It could be that the survey was too long or it could be that students did not know how to answer certain questions (particularly the 'testing' questions). When calculating average scores and percentages, non-responses were simply excluded from the analysis and dummy variables were used in the regression analyses to account for these non-responses.

A final limitation identified was that no statistical tests were performed to examine how well the survey respondents represented the actual UOW student population. This was because any statistical tests considered to be appropriate are highly influenced by N (the number of students) and, as the number of respondents (1,501) was far less than the number in the population (13,297), the reliability of the results would be questionable. Alternatively, descriptive statistics were used to make comparisons between the two groups in terms of gender and course enrolment.

7.3 Recommendations for further study

Previous studies have identified segments of the population that have poor financial literacy, however, there are some limitations which suggest further areas of research. Studies have shown 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 has attempted to investigate individual marks obtained, nor has any attempt being made to make comparisons between students from different educational institutions. One area of research could then focus on

gathering more detailed information on higher education courses studied 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 and essential for the economic wellbeing of the nation's future (CBF, 2004b), it is important that financial literacy can be explicitly linked with financial behaviour, and hence financial success and sustainability. There has been no attempt in any financial literacy study to do this, although the CBA study made a preliminary attempt to investigate the strength of any link between financial literacy and outcomes for both individuals and the Australian economy. 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. 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. Demographic information such as income, savings and debt have been included in most studies, although little is known about their structure and complexity and whether this contributes differently to financial literacy acquired over time. 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 modeling financial literacy among general populations.

Finally, another extension to the research could focus on the actual measurement of financial literacy. In depth research and testing is required to determine consistency and more realistic benchmarks for the ongoing measurement of financial literacy. This is needed, especially in Australia, as changes and advancements in technology will continue as well as people's short-term and long-term needs regarding saving, borrowing, investing, retirement, medical and insurance will also continue to change in the years ahead.

Financial literacy research will continue to grow as a result of the increasing importance of having both personal financial literacy skills and knowledge in modern societies. Both Roy Morgan and AC Nielsen's research for the ANZ Bank stated that 'trends in work patterns, demography and service delivery suggest that it will become even more important in the years ahead' (RMR, 2003, p. 2; ACN, 2005, p.6).

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Appendix A

Complete list of survey responses

Table A1: Responses to demographic questions

Country of birth	Frequency	Percent
Australia	1,048	69.8
China	174	11.6
India	27	1.8
United Kingdom	25	1.7
Hong Kong	19	1.3
Indonesia	16	1.1
United States	16	1.1
New Zealand	14	0.9
Thailand	14	0.9
Taiwan	10	0.7
Malaysia	8	0.5
South Africa	7	0.5
Canada	6	0.4
Germany	6	0.4
Japan	6	0.4
Iran	5	0.3
Philippines	5	0.3
Singapore	5	0.3
Vietnam	5	0.3
Brazil	4	0.3
Croatia	4	0.3
Mexico	4	0.3
Chile	3	0.2
Fiji	3	0.2
Korea	3	0.2
Macedonia	3	0.2
Nepal	3	0.2
Pakistan	3	0.2
Saudi Arabia	3	0.2
Scotland	3	0.2
Austria	2	0.1
Bangladesh	2	0.1
Bosnia	2	0.1
Botswana	2	0.1
Colombia	2	0.1
Egypt	2	0.1
France	2	0.1
Ireland	2	0.1
Nigeria	2	0.1

Poland	2	0.1
Russia	2	0.1
Sri Lanka	2	0.1
The Netherlands	2	0.1
Wales	2	0.1
Belgium	1	0.1
Bhutan	1	0.1
Brunei	1	0.1
Denmark	1	0.1
Isle of Man	1	0.1
Italy	1	0.1
Jordan	1	0.1
Kenya	1	0.1
Latvia	1	0.1
Lebanon	1	0.1
Lesotho	1	0.1
Mauritius	1	0.1
Norway	1	0.1
Papua New Guinea	1	0.1
Romania	1	0.1
Syria	1	0.1
United Arab Emirates	1	0.1
Zambia	1	0.1
Zimbabwe	1	0.1
Not answered	2	0.1
Area of study		
Accounting and finance	209	13.9
Education	131	8.7
Information technology and computer science	111	7.4
Management and marketing	106	6.9
Psychology	89	5.8
Biomedical science	72	4.8
Nursing	71	4.7
Law	57	3.8
Civil, mining and environmental engineer	52	3.5
Earth and environmental sciences	50	3.3
Social sciences, media and communication	49	3.3
Electrical, computer and telecommunications	45	3.0
Public health	45	3.0
Biological sciences	43	2.9
Mechanical and materials engineering	42	2.8
History	39	2.6
Business	35	2.3
English literatures, philosophy and language	33	2.2
Journalism and creative writing	33	2.2
Economics and information systems	32	2.1

Art and design	29	1.9
Chemistry	29	1.9
Physics	27	1.8
Mathematics and applied statistics	25	1.7
Music and drama	16	1.1
Politics	16	1.1
Medicine	6	0.4
Librarianship	2	0.1
Not answered	7	0.7
Total level of debt		
Under \$5,000	834	55.6
\$20,000 +	211	14.1
\$5,000 - \$9,999	196	13.1
\$10,000 - \$14,999	137	9.1
\$15,000 - \$19,999	74	4.9
Not answered	49	3.3
Disability status		
No	1,433	95.5
Yes	43	2.9
Not answered	25	1.7
Employment status		
Casual	623	41.5
Not applicable	438	29.2
Part time	277	18.5
Full time	160	10.7
Not answered	3	0.2
Currently employed		
Yes	1,063	70.8
No	429	28.6
Not answered	9	0.6
First language spoken		
English	1,142	76.1
Chinese	162	10.8
Cantonese	23	1.5
Mandarin	20	1.3
Indonesian	16	1.1
Thai	11	0.7
Arabic	9	0.6
Hindi	9	0.6
Spanish	8	0.5
German	7	0.5
Vietnamese	7	0.5

Japanese	6	0.4
French	5	0.3
Macedonian	5	0.3
Farsi	4	0.3
Gujarati	4	0.3
Malaysian	4	0.3
Portuguese	4	0.3
Serbian	4	0.3
Croatian	3	0.2
Greek	3	0.2
Nepali	3	0.2
Polish	3	0.2
Urdu	3	0.2
Bengali	2	0.1
Filipino	2	0.1
Italian	2	0.1
Marathi	2	0.1
Russian	2	0.1
Setswana	2	0.1
Afrikaans	1	0.1
Azeri	1	0.1
Bahasa	1	0.1
Bonnie	1	0.1
Bosnian	1	0.1
Danish	1	0.1
Dutch	1	0.1
Norwegian	1	0.1
Punjabi	1	0.1
Sesotho	1	0.1
Singhalese	1	0.1
Sinhala	1	0.1
Tagalog	1	0.1
Taiwanese	1	0.1
Tamil	1	0.1
Telugu	1	0.1
Turkish	1	0.1
Yiddish	1	0.1
Yoruba	1	0.1
Not answered	3	0.3
Main source of income		
Salary/Wages	697	46.4
Parental/family support	405	27.0
Government allowance/payments	244	16.3
Spouse/Partner income	72	4.8
Other	62	4.1
Not answered	21	1.4

Total annual income		
Under \$ 10,000	694	46.2
\$10,000 - \$ 14,999	279	18.6
\$15,000 - \$ 19,999	167	11.1
\$40,000 +	148	9.9
\$20,000 - \$29,999	121	8.1
\$30,000 - \$39,999	53	3.5
Not answered	39	2.6
Current living situation		
Living at home with parents/family	621	41.4
Renting with other(s)	487	32.5
Own home (with mortgage)	114	7.6
Renting alone	101	6.7
Other	62	4.1
Boarding with family/friends	48	3.2
Living in house/unit rent free	31	2.1
Own home (no mortgage)	27	1.8
Not answered	10	0.7
Are you a mature age student?		
No	910	60.6
Yes	570	38.0
Not answered	21	1.4
Gender		
Female	892	59.4
Male	604	40.2
Not answered	5	0.3
Are you in your final year of study		
No	1,128	75.2
Yes	344	22.9
Not answered	29	1.9
Study load		
Full-time	1,255	83.6
Part-time	236	15.7
Not answered	10	0.7
Type of study		
Undergraduate	1,162	77.4
Postgraduate (Course Work)	223	14.9
Postgraduate (Research)	112	7.5
Not answered	5	0.3

Year of study		
First year	513	34.2
Second year	404	26.9
Third year	373	24.9
Higher	203	13.5
Not answered	8	0.5
Have you ever been in the workforce?		
Yes	1,347	89.7
No	143	9.5
Not answered	11	0.7

Table A2: Responses to self rating questions

Question	Frequency	Percent
How well do you understand the term bank cheque?		
Strongest feeling/ability	760	50.6
Next to strongest	434	28.9
Next to weakest	213	14.2
Weakest feeling/ability	89	5.9
Not answered	5	0.3
How well do you understand the concept of compound interest?		
Strongest feeling/ability	640	42.6
Next to strongest	381	25.4
Next to weakest	272	18.1
Weakest feeling/ability	202	13.5
Not answered	6	0.4
How well do you understand the term direct debit?		
Strongest feeling/ability	941	62.7
Next to strongest	273	18.2
Next to weakest	143	9.5
Weakest feeling/ability	132	8.8
Not answered	12	0.8
How well do you understand the concept of mortgage insurance?		
Strongest feeling/ability	343	22.9
Next to strongest	366	24.4
Next to weakest	452	30.1
Weakest feeling/ability	331	22.1
Not answered	9	0.6

When applying for a personal loan, how well do you understand the rights and obligations of a personal guarantor?		
Strongest feeling/ability	415	27.7
Next to strongest	403	26.9
Next to weakest	323	21.5
Weakest feeling/ability	353	23.5
Not answered	7	0.5
How well do you understand the advantages and disadvantages of different forms of payments, such as: cash; credit cards; debit cards, and loans?		
Strongest feeling/ability	638	42.5
Next to strongest	551	36.7
Next to weakest	224	14.9
Weakest feeling/ability	79	5.3
Not answered	9	0.6
How well do you understand the difference between secured and unsecured loans?		
Strongest feeling/ability	328	21.9
Next to strongest	283	18.9
Next to weakest	355	23.7
Weakest feeling/ability	526	35.0
Not answered	9	0.6
How well do you understand how companies and other organisations are financed, including shares?		
Strongest feeling/ability	295	19.7
Next to strongest	397	26.5
Next to weakest	440	29.3
Weakest feeling/ability	360	24.0
Not answered	9	0.6
How well do you understand the concepts of 'superannuation'?		
Strongest feeling/ability	422	28.1
Next to strongest	553	36.8
Next to weakest	344	22.9
Weakest feeling/ability	170	11.3
Not answered	12	0.8
How well do you understand the concepts of 'insurance'?		
Strongest feeling/ability	607	40.4
Next to strongest	588	39.2
Next to weakest	247	16.5
Weakest feeling/ability	40	2.7
Not answered	19	1.3

How well do you understand fixed interest rates vs variable interest rates?		
Strongest feeling/ability	683	45.5
Next to strongest	434	28.9
Next to weakest	240	16.0
Weakest feeling/ability	131	8.7
Not answered	13	0.9
How well do you understand the relationship between risk and return?		
Strongest feeling/ability	431	28.7
Next to strongest	418	27.9
Next to weakest	344	22.9
Weakest feeling/ability	299	19.9
Not answered	9	0.6
In general, how well do you understand your rights and responsibilities as a consumer?		
Very confident	354	23.6
confident	656	43.7
slightly confident	367	24.5
Not at all confident	115	7.7
Not answered	9	0.6
How confident are you at performing arithmetic calculations involving addition, subtraction, multiplication and division?		
Very confident	1,083	72.2
confident	252	16.8
slightly confident	93	6.2
Not at all confident	58	3.9
Not answered	15	1.0
How confident are you at calculating percentages?		
Very confident	1,044	69.6
confident	294	19.6
slightly confident	94	6.3
Not at all confident	51	3.4
Not answered	18	1.2
How confident are you at calculating averages?		
Very confident	1,079	71.9
confident	260	17.3
slightly confident	87	5.8
Not at all confident	50	3.3
Not answered	25	1.7

How confident are you at general comprehension?		
Very confident	876	58.4
confident	441	29.4
slightly confident	114	7.6
Not at all confident	50	3.3
Not answered	20	1.3
If you experienced difficulty with a financial institution that you were unable to resolve directly, how confident are you that you would know where to go to make an effective complaint?		
Strongly agree	348	23.2
Agree	533	35.5
Disagree	436	29.1
Strongly disagree	163	10.9
Not answered	21	1.4
I spend all of my money as soon as I get it and don't really plan for the future.		
Strongly agree	84	5.6
Agree	268	17.9
Disagree	524	34.9
Strongly disagree	614	40.9
Not answered	11	0.7
I always keep an eye on expenses and have a well-organised budgeting system.		
Strongly agree	311	20.7
Agree	605	40.3
Disagree	449	29.9
Strongly disagree	123	8.2
Not answered	13	0.9
I often have trouble setting money aside for major financial outlays		
Strongly agree	145	9.7
Agree	309	20.6
Disagree	525	35.0
Strongly disagree	499	33.2
Not answered	23	1.5
Using a credit card to purchase a new TV is a good way to have something now, even if it costs interest		
Strongly agree	52	3.5
Agree	136	9.1
Disagree	326	21.7
Strongly disagree	975	65.0
Not answered	12	0.8

I generally feel 'out of control' when it comes to spending money and using credit or borrowing.		
Strongly agree	79	5.3
Agree	183	12.2
Disagree	411	27.4
Strongly disagree	814	54.2
Not answered	14	0.9
It is important to have both a long-term and a short-term financial plan.		
Strongly agree	979	65.2
Agree	404	26.9
Disagree	64	4.3
Strongly disagree	38	2.5
Not answered	16	1.1
Saving for retirement is not that important because the government will make up the gap		
Strongly agree	52	3.5
Agree	114	7.6
Disagree	424	28.3
Strongly disagree	898	59.8
Not answered	13	0.9
When making financial decisions, I generally feel well-informed		
Strongly agree	263	17.5
Agree	730	48.6
Disagree	409	27.3
Strongly disagree	85	5.7
Not answered	14	0.9

Table A3: Responses to testing questions (the correct response is indicated in *italics*)

Question	Frequency	Percent
If Jane brought one kilo of apples for \$4.99 and a loaf of bread for \$2.99, how much did she spend?		
\$7.95	185	12.3
\$9.50	1	0.1
<i>\$8.00</i>	1,303	86.8
\$8.05	5	0.3
Not answered	7	0.5
If your petrol bill cost you a total of \$43.60, how much change would you receive from a \$50 note?		
\$7.40	30	2.0
<i>\$6.40</i>	1,448	96.5

\$7.60	1	0.1
\$6.50	15	1.0
Not answered	7	0.5
If a TV costs \$1,200, how many could you buy with \$4,000?		
3	1,478	98.5
4	9	0.6
5	1	0.1
2	6	0.4
Not answered	7	0.5
What is 20 X \$350?		
\$61,000	7	0.5
\$6,100	27	1.8
\$7,200	16	1.1
\$7,000	1,440	95.9
Not answered	11	0.7
Suppose you have 100 shares that you purchased at \$30 per share and then you sell them one year later at \$26 a share, after a dividend of \$2 per share is paid. What is your total gain or loss from this investment?		
\$4,000 (loss)	38	2.5
\$200	91	6.1
\$200 (loss)	1,267	84.4
\$400	49	3.3
Not answered	56	3.7
If you have a weekly income of \$400 and you save \$120, what proportion of your weekly income have you saved?		
30%	1,357	90.4
25%	40	2.7
20%	41	2.7
15%	14	0.9
Not answered	49	3.3
Which statement about a Bank cheque is most accurate?		
A Bank cheque is a cheque written from your own personal cheque account	266	17.7
<i>A Bank cheque is written by the bank on your behalf, using funds from your personal bank account and incurs a fee</i>	1,010	67.3
Bank cheques are equivalent to cash	138	9.2
Bank cheques are usually only available for corporate use	30	2.0
Not answered	57	3.8
Please read the following product disclosure statement from the XYZ Bank about providing your tax file number (TFN):		
<i>"It is not compulsory for you to provide your TFN. However, if you choose not to do</i>		

so, XYZ is required to deduct withholding tax from any interest earned unless you are in an exempt category. Withholding tax is calculated at the highest marginal tax rate plus Medicare Levy."

What do you think is the key information from this statement?

Providing your TFN is optional	140	9.3
Medicare Levy is compulsory	25	1.7
<i>If you don't provide your TFN then any interest will be taxed at the highest rate</i>	1,216	81.0
Withholding tax is compulsory	38	2.5
Not answered	82	5.5

Suppose that your fortnightly rental payment of \$280 is automatically deducted from your bank account each fortnight by your landlord's real estate agent. This type of payment system is an example of:

An automatic savings plan	36	2.4
<i>A direct debit payment</i>	1,328	88.5
A personal cheque payment	26	1.7
A charge-back on your credit card	14	0.9
Not answered	97	6.5

Which of the following would be the best option in order to maximize the amount of interest earned on a sum of money?

16% pa simple interest, calculated monthly	102	6.8
16% pa simple interest, calculated daily	160	10.7
15% pa compound interest, calculated bi-annually	162	10.8
<i>15% pa compound interest, calculated daily</i>	972	64.8
Not answered	105	7.0

Which of the following statement(s) about mortgage insurance is correct?

Mortgage insurance covers the lender in case the borrower defaults on the loan and the property is sold for less than the amount outstanding on the loan.	198	13.2
Most lenders require mortgage insurance if you are borrowing more than 90% of the valuation of the property.	80	5.3
Mortgage insurance is required by all first home buyers regardless of the amount borrowed.	34	2.3
<i>Both (1) and (2) are correct</i>	762	50.8
Both (1) and (3) are correct	294	19.6
Not answered	133	8.9

What is the average return on the following investment over the 3 year period?

Year	Return (\$)		
2003	16		
2004	24		
2005	20		
\$19		25	1.7
\$22		49	3.3
\$20		1,271	84.7
\$18		31	2.1

Not answered	125	8.3
Which of the following statements about personal guarantors is false?		
The guarantor is fully responsible for repayments if the borrower defaults	282	18.8
The guarantor must be assessed and approved by the lender before a loan is approved	180	12.0
The guarantor can not be a relative of the borrower	826	55.0
<i>The guarantor must be over the age of 18 years</i>	67	4.5
Not answered	146	9.7
Which of the following is an advantage of using a debit card?		
An interest-free period of usually around 30 days	241	16.1
Ability to pay for goods via the internet (i.e. Bpay)	427	28.5
<i>PIN security</i>	603	40.2
No need to check bank statement for reconciliation against personal records	89	5.9
Not answered	141	9.4
Which of the following is a disadvantage of using a money order to pay for goods?		
<i>There is always a fee incurred when purchasing a money order</i>	1,071	71.4
Eliminates the risks involved when sending cash in the post	99	6.6
If the money order exceeds \$10 then proof of ownership is required	86	5.7
Only a selected few post offices are able to cash money orders	96	6.4
Not answered	149	9.9
Credit cards and store cards usually have an interest free period		
<i>True</i>	1,023	68.2
False	329	21.9
Not answered	149	9.9
If a loan is unsecured, the interest rate is likely to be higher so as to cover the lender in case of borrower default		
<i>True</i>	1,134	75.6
False	209	13.9
Not answered	158	10.5
Which of the following is NOT a benefit of using an ATM?		
Convenient 24-hour access	25	1.7
Lower fees than over the counter	493	32.8
<i>Able to access as little or as much cash as you want, in one quick and easy transaction</i>	809	53.9
Quicker than going into a branch	23	1.5
Not answered	151	10.1
Which of the following statements is correct?		
If a loan is unsecured, the interest rate is likely to be lower	92	6.1
<i>If your car loan is secured, the bank has full ownership of the car until the final repayment</i>	386	25.7

<i>is made</i>		
If your car loan is unsecured, the bank has the right to sell the car in the case of loan default	703	46.8
If a loan is secure, the interest rate is likely to be higher	147	9.8
Not answered	173	11.5
Private organisations are primarily financed through Government and public organisations are primarily financed through shareholders		
True	310	20.7
False	1,010	67.3
Not answered	181	12.1
Which of the following statements is correct?		
Employees are required by law to make superannuation payments in addition to their employer's contribution	176	11.7
The maximum allowable contribution by the employee is 20%	66	4.4
<i>Employers are required by law to make superannuation payments on behalf of their employees</i>	1,013	67.5
The maximum allowable contribution by the employer is 20%	60	4.0
Not answered	186	12.4
Care should be taken when considering how much money to put into your superannuation fund because once you have put money in, it is likely that you are unable to take it out again until you retire		
True	983	65.5
False	333	22.2
Not answered	185	12.3
Superannuation is taxed at a lower rate than other investments		
True	1,104	73.6
False	217	14.5
Not answered	180	12.0
If your car loan is to be repaid over a period of 5 years and you happen to win the lottery and pay out the loan after 3 months, you would most probably be required to pay an early termination fee		
True	951	63.4
False	363	24.2
Not answered	187	12.5
If you have just purchased your first house and you intend to rent it out for 2 years before you actually move in, then you are entitled to receive the first home owners grant of \$7,000		
True	439	29.3
False	871	58.0
Not answered	191	12.7
Compulsory Third Party (CTP) Green Slip insurance does not cover damage to property or other vehicles		

<i>True</i>	529	35.2
<i>False</i>	780	52.0
Not answered	192	12.8
A home loan can have both a fixed interest rate component and a variable interest rate component		
<i>True</i>	1,054	70.2
<i>False</i>	251	16.7
Not answered	196	13.1
An investment with a high return is likely to have lower than average risks?		
<i>True</i>	163	10.9
<i>False</i>	1,149	76.6
Not answered	189	12.6
When applying for a loan, if your application is successful, you will most likely have to pay an establishment fee		
<i>True</i>	1,137	75.8
<i>False</i>	163	10.9
Not answered	201	13.4
A credit rating is an estimation of a person's suitability to be granted credit		
<i>True</i>	1,178	78.5
<i>False</i>	130	8.7
Not answered	193	12.9
The danger of using past returns to predict future returns on the stock market is that share prices reflect current economic conditions and are thus unpredictable using past returns		
<i>True</i>	1,059	70.6
<i>False</i>	242	16.1
Not answered	200	13.3
Short-term market fluctuations can be expected even with good investments		
<i>True</i>	1,171	78.0
<i>False</i>	138	9.2
Not answered	192	12.8
A term deposit is usually used as a long-term investment		
<i>True</i>	832	55.4
<i>False</i>	475	31.7
Not answered	194	12.9
The primary reason for diversifying an investment portfolio is to avoid excessive exposure to any one source of risk		
<i>True</i>	1,144	76.2

False	150	10.0
Not answered	207	13.8
Which of the following statements is false?		
Most insurance products are optional	111	7.4
Comprehensive motor vehicle insurance is usually compulsory for a secured personal car loan	190	12.7
Insurance is used as a 'safety net' in case something of value is lost, stolen or damaged	159	10.6
<i>Home and contents insurance is used to increase the value of the property</i>	847	56.4
Not answered	194	12.9
Which of the following statements is false?		
There are usually no transaction fees when using internet banking services	120	8.0
There are usually no transaction fees when using telephone banking services	92	6.1
Superannuation accounts usually charge an annual account keeping fee	107	7.1
<i>Credit cards do not incur any fees or charges</i>	990	66.0
Not answered	192	12.8
Only licensed financial businesses are allowed to sell financial products		
<i>True</i>	978	65.2
False	319	21.3
Not answered	204	13.6
If your wallet is stolen and your PIN was on a piece of paper inside your wallet, then you are fully responsible for any unauthorised withdrawals from your bank account		
<i>True</i>	1,046	69.7
False	260	17.3
Not answered	195	13.0
Providers of professional advice about financial products are not required to disclose if they are receiving commission as a result of their advice		
True	460	30.7
<i>False</i>	827	55.1
Not answered	214	14.3
When renewing a comprehensive car insurance policy, you must tell the insurance company about the new car stereo that you had installed last week		
<i>True</i>	1,135	75.6
False	163	10.9
Not answered	203	13.5
If you have a credit card and you are the primary card holder then you are responsible for any debt incurred by a secondary card holder		
<i>True</i>	1,179	78.6
False	114	7.6
Not answered	208	13.9

After taking out a new insurance policy, you change your mind 2 days later and cancel the contract. Can you have your premium fully refunded?		
Yes	598	39.8
No	697	46.4
Not answered	206	13.7
If two people jointly take out a loan, which one of the following most accurately describes the responsibility for repayment of the loan?		
Each person is responsible for repayment of half the loan	87	5.8
<i>Both persons are responsible for repayment of the entire loan</i>	1,103	73.5
The older of the two persons is responsible for repayment of the entire loan	61	4.1
Only one person must be responsible for repayment of the entire loan	44	2.9
Not answered	206	13.7
Thinking about debts and borrowing money, which one of the following is most likely to give someone a bad credit rating?		
Asking the bank for an increased overdraft	97	6.5
Borrowing from an organization other than a bank	65	4.3
Borrowing money from a family member to make mortgage repayments	55	3.7
<i>Being more than 60 days late with the minimum payment on a credit card</i>	1,074	71.6
Not answered	210	14.0
Which of the following do you think would be the most appropriate course of action if you were not happy with the service that you received from your financial institution?		
Call the Department of Fair Trading and lodge an official complaint	200	13.3
Send a letter of complaint to the Banking Ombudsman	115	7.7
<i>Ask to speak to the Branch Manager to discuss your concerns</i>	823	54.8
Close your existing account(s) with this financial institution and change over to a different financial institution.	148	9.9
Not answered	215	14.3

Appendix B

Course enrolment by gender

Course Name	Population data							Survey data						
	Male			Female			Total	Male			Female			Total
	No.	Row%	Col%	No.	Row%	Col%	No. %	No.	Row%	Col%	No.	Row%	Col%	No. %
Bachelor of Commerce	1050	53.9	16.3	898	46.1	13.1	1948 14.6	107	48.6	17.7	112	50.9	12.6	220 14.7
Bachelor of Arts	281	27.6	4.4	738	72.4	10.8	1019 7.7	30	19.6	5.0	123	80.4	13.8	153 10.2
Bachelor of Engineering	800	92.0	12.4	70	8.0	1.0	870 6.5	75	89.3	12.4	9	10.7	1.0	84 5.6
Bachelor of Science	393	45.5	6.1	470	54.5	6.9	863 6.5	43	35.0	7.1	79	64.2	8.9	123 8.2
Doctor of Philosophy	377	53.6	5.8	326	46.4	4.8	703 5.3	29	40.3	4.8	41	56.9	4.6	72 4.8
Bachelor of Teaching	84	13.6	1.3	533	86.4	7.8	617 4.6	9	13.6	1.5	57	86.4	6.4	66 4.4
Bachelor of Nursing	44	10.4	0.7	381	89.6	5.6	425 3.2	6	9.8	1.0	55	90.2	6.2	61 4.1
Master of Professional Accounting	201	47.3	3.1	224	52.7	3.3	425 3.2	20	40.8	3.3	29	59.2	3.3	49 3.3
Bachelor of Creative Arts	173	43.1	2.7	228	56.9	3.3	401 3.0	10	27.8	1.7	26	72.2	2.9	36 2.4
Bachelor of Education	106	31.8	1.6	227	68.2	3.3	333 2.5	3	15.8	0.5	16	84.2	1.8	19 1.3
Bachelor of Computer Science	296	92.5	4.6	24	7.5	0.4	320 2.4	24	92.3	4.0	2	7.7	0.2	26 1.7
Bachelor of Information and Communication Technology	223	83.5	3.5	44	16.5	0.6	267 2.0	18	69.2	3.0	8	30.8	0.9	26 1.7
Bachelor of Arts - Bachelor of Laws	70	28.0	1.1	180	72.0	2.6	250 1.9	11	37.9	1.8	18	62.1	2.0	29 1.9
Bachelor of Commerce - Bachelor of Laws	120	51.1	1.9	115	48.9	1.7	235 1.8	12	57.1	2.0	9	42.9	1.0	21 1.4
Graduate Diploma in Education	65	29.7	1.0	154	70.3	2.3	219 1.6	1	14.3	0.2	6	85.7	0.7	7 0.5
Non-Award : Study Abroad	63	38.4	1.0	101	61.6	1.5	164 1.2	5	45.5	0.8	6	54.5	0.7	11 0.7
Bachelor of Internet Science and Technology	140	89.7	2.2	16	10.3	0.2	156 1.2	13	100.0	2.2	0	0.0	0.0	13 0.9
Bachelor of Communication and Media Studies	38	25.2	0.6	113	74.8	1.7	151 1.1	2	13.3	0.3	13	86.7	1.5	15 1.0
Master of Education	31	23.3	0.5	102	76.7	1.5	133 1.0	4	30.8	0.7	9	69.2	1.0	13 0.9
Bachelor of Arts - Bachelor of Commerce	44	33.8	0.7	86	66.2	1.3	130 1.0	5	31.3	0.8	11	68.8	1.2	16 1.1
Bachelor of Medical Science	40	35.7	0.6	72	64.3	1.1	112 0.8	4	21.1	0.7	15	78.9	1.7	19 1.3
Bachelor of Business Administration	53	52.5	0.8	48	47.5	0.7	101 0.8	5	71.4	0.8	2	28.6	0.2	7 0.5
Master of Information and Communication Technology	80	79.2	1.2	21	20.8	0.3	101 0.8	6	75.0	1.0	1	12.5	0.1	8 0.5
Bachelor of Psychology	16	16.2	0.2	83	83.8	1.2	99 0.7	2	18.2	0.3	9	81.8	1.0	11 0.7
Bachelor of Laws	31	35.6	0.5	56	64.4	0.8	87 0.7	2	22.2	0.3	7	77.8	0.8	9 0.6
Bachelor of Science - Bachelor of Commerce	39	48.1	0.6	42	51.9	0.6	81 0.6	3	37.5	0.5	5	62.5	0.6	8 0.5
Master of Public Health	30	39.5	0.5	46	60.5	0.7	76 0.6	2	40.0	0.3	3	60.0	0.3	5 0.3
Master of Science	25	34.7	0.4	47	65.3	0.7	72 0.5	1	16.7	0.2	5	83.3	0.6	6 0.4
Bachelor of Creative Arts - Bachelor of Arts	19	28.4	0.3	48	71.6	0.7	67 0.5	0	0.0	0.0	8	100.0	0.9	8 0.5
Bachelor of Communication and Media Studies - Bachelor of Arts	5	7.7	0.1	60	92.3	0.9	65 0.5	1	12.5	0.2	7	87.5	0.8	8 0.5
Master of Engineering Practice	57	90.5	0.9	6	9.5	0.1	63 0.5	4	100.0	0.7	0	0.0	0.0	4 0.3
Postgraduate Diploma in Psychology	14	22.2	0.2	49	77.8	0.7	63 0.5	0	0.0	0.0	13	100.0	1.5	13 0.9
Non-Award : Exchange	27	45.0	0.4	33	55.0	0.5	60 0.5	1	50.0	0.2	1	50.0	0.1	2 0.1

Bachelor of Mathematics and Finance	43	72.9	0.7	16	27.1	0.2	59	0.4	6	85.7	1.0	1	14.3	0.1	7	0.5
Bachelor of Engineering / Bachelor of Commerce	51	91.1	0.8	5	8.9	0.1	56	0.4	9	100.0	1.5	0	0.0	0.0	9	0.6
Bachelor of Exercise Science and Rehabilitation	19	33.9	0.3	37	66.1	0.5	56	0.4	0	0.0	0.0	6	100.0	0.7	6	0.4
Bachelor of Communication and Media Studies - Bachelor of Laws	12	21.8	0.2	43	78.2	0.6	55	0.4	0	0.0	0.0	5	100.0	0.6	5	0.3
Bachelor of Nutrition and Dietetics	2	3.7	0.0	52	96.3	0.8	54	0.4	0	0.0	0.0	7	100.0	0.8	7	0.5
Master of Science - Research	31	60.8	0.5	20	39.2	0.3	51	0.4	2	33.3	0.3	4	66.7	0.4	6	0.4
Master of Finance	30	61.2	0.5	19	38.8	0.3	49	0.4	4	80.0	0.7	1	20.0	0.1	5	0.3
Bachelor of Mathematics	26	56.5	0.4	20	43.5	0.3	46	0.3	4	50.0	0.7	4	50.0	0.4	8	0.5
Graduate Diploma in Legal Practice	24	54.5	0.4	20	45.5	0.3	44	0.3	2	40.0	0.3	3	60.0	0.3	5	0.3
Master of Information and Communication Technology (Advanced)	36	81.8	0.6	8	18.2	0.1	44	0.3	4	100.0	0.7	0	0.0	0.0	4	0.3
Bachelor of Arts (Honours)	16	37.2	0.2	27	62.8	0.4	43	0.3	0	0.0	0.0	7	100.0	0.8	7	0.5
Master of Computer Science	37	86.0	0.6	6	14.0	0.1	43	0.3	1	100.0	0.2	0	0.0	0.0	1	0.1
Doctor of Education	18	42.9	0.3	24	57.1	0.4	42	0.3	1	20.0	0.2	4	80.0	0.4	5	0.3
Bachelor of Medical Radiation Physics	21	51.2	0.3	20	48.8	0.3	41	0.3	2	33.3	0.3	4	66.7	0.4	6	0.4
Master of Science (Population Health)	27	65.9	0.4	14	34.1	0.2	41	0.3	6	100.0	1.0	0	0.0	0.0	6	0.4
Master of Forensic Accounting	17	43.6	0.3	22	56.4	0.3	39	0.3	2	40.0	0.3	3	60.0	0.3	5	0.3
Bachelor of Commerce (Dean's Scholar)	16	43.2	0.2	21	56.8	0.3	37	0.3	2	28.6	0.3	5	71.4	0.6	7	0.5
Master of Computer Studies	35	97.2	0.5	1	2.8	0.0	36	0.3	4	100.0	0.7	0	0.0	0.0	4	0.3
Bachelor of Communication and Media Studies - Bachelor of Creative Art	9	25.7	0.1	26	74.3	0.4	35	0.3	1	16.7	0.2	5	83.3	0.6	6	0.4
Master of Psychology	3	8.6	0.0	32	91.4	0.5	35	0.3	0	0.0	0.0	1	100.0	0.1	1	0.1
Bachelor of Engineering - Scholars	29	87.9	0.4	4	12.1	0.1	33	0.2	2	50.0	0.3	2	50.0	0.2	4	0.3
Bachelor of Environmental Science	13	39.4	0.2	20	60.6	0.3	33	0.2	3	33.3	0.5	6	66.7	0.7	9	0.6
Bachelor of Science (Honours) - Advanced	14	42.4	0.2	19	57.6	0.3	33	0.2	2	40.0	0.3	3	60.0	0.3	5	0.3
Bachelor of Engineering - Bachelor of Science	29	90.6	0.4	3	9.4	0.0	32	0.2	2	66.7	0.3	1	33.3	0.1	3	0.2
Bachelor of Marine Science	17	54.8	0.3	14	45.2	0.2	31	0.2	0	0.0	0.0	3	100.0	0.3	3	0.2
Master of Engineering Studies	30	96.8	0.5	1	3.2	0.0	31	0.2	1	100.0	0.2	0	0.0	0.0	1	0.1
Master of Engineering Management	27	90.0	0.4	3	10.0	0.0	30	0.2	4	80.0	0.7	1	20.0	0.1	5	0.3
Doctor of Creative Arts	14	53.8	0.2	12	46.2	0.2	26	0.2								
Master of Internet Technology	25	96.2	0.4	1	3.8	0.0	26	0.2	3	100.0	0.5	0	0.0	0.0	3	0.2
Bachelor of Health Science in Indigenous Health Studies	5	20.0	0.1	20	80.0	0.3	25	0.2	1	12.5	0.2	7	87.5	0.8	8	0.5
Bachelor of Information Technology	19	76.0	0.3	6	24.0	0.1	25	0.2	3	75.0	0.5	1	25.0	0.1	4	0.3
Bachelor of Science - Bachelor of Laws	9	36.0	0.1	16	64.0	0.2	25	0.2	2	66.7	0.3	1	33.3	0.1	3	0.2
Master of Nursing	9	36.0	0.1	16	64.0	0.2	25	0.2	0	0.0	0.0	3	100.0	0.3	3	0.2
Bachelor of Biotechnology	12	50.0	0.2	12	50.0	0.2	24	0.2	2	33.3	0.3	4	66.7	0.4	6	0.4
Master of Engineering - Research	24	100.0	0.4	0	0.0	0.0	24	0.2	8	100.0	1.3	0	0.0	0.0	8	0.5
Master of Information Technology Management	18	75.0	0.3	6	25.0	0.1	24	0.2	3	75.0	0.5	1	25.0	0.1	4	0.3

Master of Strategic Human Resource Management	8	33.3	0.1	16	66.7	0.2	24	0.2	0	0.0	0.0	1	100.0	0.1	1	0.1
Master of Transnational Crime Prevention	19	79.2	0.3	5	20.8	0.1	24	0.2	1	50.0	0.2	1	50.0	0.1	2	0.1
Bachelor of Communication and Media Studies - Bachelor of Commerce	3	13.0	0.0	20	87.0	0.3	23	0.2	0	0.0	0.0	4	100.0	0.4	4	0.3
Master of Arts - Research	9	39.1	0.1	14	60.9	0.2	23	0.2	0	0.0	0.0	4	100.0	0.4	4	0.3
Master of Electronic Commerce	16	69.6	0.2	7	30.4	0.1	23	0.2	2	50.0	0.3	2	50.0	0.2	4	0.3
Master of Information Systems	16	69.6	0.2	7	30.4	0.1	23	0.2	3	75.0	0.5	1	25.0	0.1	4	0.3
Master of Strategic Marketing	8	34.8	0.1	15	65.2	0.2	23	0.2	1	100.0	0.2	0	0.0	0.0	1	0.1
Bachelor of Creative Arts - Bachelor of Commerce	15	68.2	0.2	7	31.8	0.1	22	0.2	3	60.0	0.5	2	40.0	0.2	5	0.3
Master of Applied Finance (Banking)	12	54.5	0.2	10	45.5	0.1	22	0.2	1	25.0	0.2	3	75.0	0.3	4	0.3
Bachelor of Medical Science - Bachelor of Commerce	8	40.0	0.1	12	60.0	0.2	20	0.2	2	100.0	0.3	0	0.0	0.0	2	0.1
Master of Computer Science -Research	17	85.0	0.3	3	15.0	0.0	20	0.2								
Master of Strategic Management and Marketing	11	55.0	0.2	9	45.0	0.1	20	0.2	1	50.0	0.2	1	50.0	0.1	2	0.1
Bachelor of Mathematics - Bachelor of Computer Science	18	94.7	0.3	1	5.3	0.0	19	0.1	2	100.0	0.3	0	0.0	0.0	2	0.1
Bachelor of Medicinal Chemistry	8	42.1	0.1	11	57.9	0.2	19	0.1	0	0.0	0.0	2	100.0	0.2	2	0.1
Bachelor of Psychology - Bachelor of Commerce	4	21.1	0.1	15	78.9	0.2	19	0.1	0	0.0	0.0	5	100.0	0.6	5	0.3
Master of Education - Research	7	36.8	0.1	12	63.2	0.2	19	0.1	1	50.0	0.2	1	50.0	0.1	2	0.1
Master of Physical and Health Education	9	47.4	0.1	10	52.6	0.1	19	0.1								
Master of Science (Occupational Health and Safety)	8	42.1	0.1	11	57.9	0.2	19	0.1	0	0.0	0.0	2	100.0	0.2	2	0.1
Bachelor of Arts (Dean's Scholars) Advanced Degree	4	22.2	0.1	14	77.8	0.2	18	0.1	1	12.5	0.2	7	87.5	0.8	8	0.5
Bachelor of Mathematics (Advanced)	12	70.6	0.2	5	29.4	0.1	17	0.1								
Master of Computer Science (Advanced)	17	100.0	0.3	0	0.0	0.0	17	0.1	4	100.0	0.7	0	0.0	0.0	4	0.3
Master of Environmental Science	12	70.6	0.2	5	29.4	0.1	17	0.1								
Master of Science (Midwifery)	0	0.0	0.0	17	100.0	0.2	17	0.1	0	0.0	0.0	2	100.0	0.2	2	0.1
Bachelor of Environmental Science (Advanced)	8	50.0	0.1	8	50.0	0.1	16	0.1	1	33.3	0.2	2	66.7	0.2	3	0.2
Bachelor of Medical and Radiation Physics	9	56.3	0.1	7	43.8	0.1	16	0.1	1	50.0	0.2	1	50.0	0.1	2	0.1
Graduate Diploma in Internet Technology	12	80.0	0.2	3	20.0	0.0	15	0.1								
Graduate Diploma in Science	10	66.7	0.2	5	33.3	0.1	15	0.1	1	33.3	0.2	2	66.7	0.2	3	0.2
Master of Accountancy	6	40.0	0.1	9	60.0	0.1	15	0.1	1	50.0	0.2	1	50.0	0.1	2	0.1
Master of International Relations	6	40.0	0.1	9	60.0	0.1	15	0.1	2	100.0	0.3	0	0.0	0.0	2	0.1
Bachelor of Medical Science - Bachelor of Laws	3	21.4	0.0	11	78.6	0.2	14	0.1	0	0.0	0.0	2	100.0	0.2	2	0.1
Bachelor of Nanotechnology	12	85.7	0.2	2	14.3	0.0	14	0.1	1	100.0	0.2	0	0.0	0.0	1	0.1
Bachelor of Science / Bachelor of Arts	3	21.4	0.0	11	78.6	0.2	14	0.1	0	0.0	0.0	3	100.0	0.3	3	0.2
Bachelor of Commerce (Honours)	9	69.2	0.1	4	30.8	0.1	13	0.1	0	0.0	0.0	2	100.0	0.2	2	0.1
Bachelor of Creative Arts - Bachelor of Science	5	38.5	0.1	8	61.5	0.1	13	0.1	0	0.0	0.0	1	100.0	0.1	1	0.1
Bachelor of Engineering - Bachelor of Mathematics	11	84.6	0.2	2	15.4	0.0	13	0.1								
Cross-Institutional	2	15.4	0.0	11	84.6	0.2	13	0.1								

Doctor of Philosophy (Clinical Psychology)	3	23.1	0.0	10	76.9	0.1	13	0.1	0	0.0	0.0	1	100.0	0.1	1	0.1
Graduate Certificate in Transnational Crime Prevention	10	76.9	0.2	3	23.1	0.0	13	0.1	2	50.0	0.3	2	50.0	0.2	4	0.3
Bachelor of Biotechnology (Advanced)	4	33.3	0.1	8	66.7	0.1	12	0.1	0	0.0	0.0	3	100.0	0.3	3	0.2
Bachelor of Creative Arts - Bachelor of Laws	2	16.7	0.0	10	83.3	0.1	12	0.1								
Doctor of Business Administration	9	75.0	0.1	3	25.0	0.0	12	0.1	1	100.0	0.2	0	0.0	0.0	1	0.1
Graduate Diploma in TESOL	2	16.7	0.0	10	83.3	0.1	12	0.1								
Master of Creative Arts	3	25.0	0.0	9	75.0	0.1	12	0.1	0	0.0	0.0	1	100.0	0.1	1	0.1
Master of Creative Arts - Research	4	33.3	0.1	8	66.7	0.1	12	0.1	0	0.0	0.0	1	100.0	0.1	1	0.1
Master of Information and Communication Technology - Research	7	58.3	0.1	5	41.7	0.1	12	0.1								
Bachelor of Creative Arts - Bachelor of Computer Science	8	72.7	0.1	3	27.3	0.0	11	0.1	2	100.0	0.3	0	0.0	0.0	2	0.1
Bachelor of Education (Honours)	1	9.1	0.0	10	90.9	0.1	11	0.1								
Bachelor of Nanotechnology (Advanced)	10	90.9	0.2	1	9.1	0.0	11	0.1	3	100.0	0.5	0	0.0	0.0	3	0.2
Graduate Certificate in Occupational Health and Safety	4	36.4	0.1	7	63.6	0.1	11	0.1								
Graduate Diploma in Education (Technology)	6	54.5	0.1	5	45.5	0.1	11	0.1								
Graduate Diploma in Information Systems	9	81.8	0.1	2	18.2	0.0	11	0.1	1	50.0	0.2	1	50.0	0.1	2	0.1
Master of Journalism	6	54.5	0.1	5	45.5	0.1	11	0.1	1	100.0	0.2	0	0.0	0.0	1	0.1
Master of Nursing - Research	2	18.2	0.0	9	81.8	0.1	11	0.1								
Master of Strategic Management	3	27.3	0.0	8	72.7	0.1	11	0.1	1	25.0	0.2	3	75.0	0.3	4	0.3
Bachelor of Engineering - Bachelor of Arts	5	50.0	0.1	5	50.0	0.1	10	0.1	0	0.0	0.0	1	100.0	0.1	1	0.1
Bachelor of Information and Communication Technology-Bachelor of Laws	5	50.0	0.1	5	50.0	0.1	10	0.1	0	0.0	0.0	1	100.0	0.1	1	0.1
Bachelor of Mathematics and Economics	8	80.0	0.1	2	20.0	0.0	10	0.1	1	50.0	0.2	1	50.0	0.1	2	0.1
Bachelor of Medicinal Chemistry (Advanced)	3	30.0	0.0	7	70.0	0.1	10	0.1	0	0.0	0.0	3	100.0	0.3	3	0.2
Bachelor of Science (Honours)	9	90.0	0.1	1	10.0	0.0	10	0.1	2	100.0	0.3	0	0.0	0.0	2	0.1
Bachelor of Engineering - Bachelor of Computer Science	9	100.0	0.1	0	0.0	0.0	9	0.1	2	100.0	0.3	0	0.0	0.0	2	0.1
Bachelor of Science - Bachelor of Arts	6	66.7	0.1	3	33.3	0.0	9	0.1	0	0.0	0.0	1	100.0	0.1	1	0.1
Graduate Certificate in Commerce	3	33.3	0.0	6	66.7	0.1	9	0.1	1	50.0	0.2	1	50.0	0.1	2	0.1
Master of Digital Multimedia	7	77.8	0.1	2	22.2	0.0	9	0.1								
Master of Medical Radiation Physics	6	66.7	0.1	3	33.3	0.0	9	0.1	0	0.0	0.0	1	100.0	0.1	1	0.1
Bachelor of Engineering - Bachelor of Laws	7	87.5	0.1	1	12.5	0.0	8	0.1								
Doctor of Psychology	1	12.5	0.0	7	87.5	0.1	8	0.1	0	0.0	0.0	2	100.0	0.2	2	0.1
Doctor of Public Health	4	50.0	0.1	4	50.0	0.1	8	0.1	0	0.0	0.0	1	100.0	0.1	1	0.1
Graduate Certificate in Public Health	2	25.0	0.0	6	75.0	0.1	8	0.1	0	0.0	0.0	1	100.0	0.1	1	0.1
Master of Engineering	6	75.0	0.1	2	25.0	0.0	8	0.1	1	100.0	0.2	0	0.0	0.0	1	0.1
Master of International Business	4	50.0	0.1	4	50.0	0.1	8	0.1	1	100.0	0.2	0	0.0	0.0	1	0.1
Master of Social Change and Development	2	25.0	0.0	6	75.0	0.1	8	0.1	0	0.0	0.0	3	100.0	0.3	3	0.2
Bachelor of Computer Bioinformatics	4	57.1	0.1	3	42.9	0.0	7	0.1	2	100.0	0.3	0	0.0	0.0	2	0.1

Bachelor of Computer Geoinformatics	7	100.0	0.1	0	0.0	0.0	7	0.1	2	100.0	0.3	0	0.0	0.0	2	0.1
Bachelor of Letters	3	42.9	0.0	4	57.1	0.1	7	0.1	1	100.0	0.2	0	0.0	0.0	1	0.1
Bachelor of Marine Science (Honours) - Advanced	4	57.1	0.1	3	42.9	0.0	7	0.1								
Master of Engineering Asset Management	7	100.0	0.1	0	0.0	0.0	7	0.1	1	100.0	0.2	0	0.0	0.0	1	0.1
Research Training Program	4	57.1	0.1	3	42.9	0.0	7	0.1								
Bachelor of Science (Photonics)	6	100.0	0.1	0	0.0	0.0	6	0.0	1	100.0	0.2	0	0.0	0.0	1	0.1
Graduate Diploma in Adult Education	4	66.7	0.1	2	33.3	0.0	6	0.0	0	0.0	0.0	1	100.0	0.1	1	0.1
Master of Arts	2	33.3	0.0	4	66.7	0.1	6	0.0	0	0.0	0.0	2	100.0	0.2	2	0.1
Master of English Literatures	1	16.7	0.0	5	83.3	0.1	6	0.0	0	0.0	0.0	1	100.0	0.1	1	0.1
Master of Environmental Science - Research	4	66.7	0.1	2	33.3	0.0	6	0.0								
Master of Nutrition Management	2	33.3	0.0	4	66.7	0.1	6	0.0								
ZZ OLD CODE NOT USED																
Bachelor of Information Technology & Communication	6	100.0	0.1	0	0.0	0.0	6	0.0	1	100.0	0.2	0	0.0	0.0	1	0.1
Graduate Certificate in Mental Health Nursing	2	40.0	0.0	3	60.0	0.0	5	0.0	0	0.0	0.0	1	100.0	0.1	1	0.1
Master of Business Administration (Advanced)	5	100.0	0.1	0	0.0	0.0	5	0.0								
Master of Health Informatics	1	20.0	0.0	4	80.0	0.1	5	0.0	0	0.0	0.0	2	100.0	0.2	2	0.1
Master of Information Systems - Research	3	60.0	0.0	2	40.0	0.0	5	0.0								
Bachelor of Computer Science - Bachelor of Science	2	50.0	0.0	2	50.0	0.0	4	0.0								
Bachelor of Creative Arts (Dean's Scholar)	1	25.0	0.0	3	75.0	0.0	4	0.0	0	0.0	0.0	1	100.0	0.1	1	0.1
Bachelor of Science - Bachelor of Mathematics	4	100.0	0.1	0	0.0	0.0	4	0.0								
Graduate Certificate in Business	3	75.0	0.0	1	25.0	0.0	4	0.0								
Graduate Certificate in Information and Communication Technology	3	75.0	0.0	1	25.0	0.0	4	0.0								
Graduate Diploma in Arts	1	25.0	0.0	3	75.0	0.0	4	0.0	0	0.0	0.0	1	100.0	0.1	1	0.1
Graduate Diploma in Management	1	25.0	0.0	3	75.0	0.0	4	0.0								
Graduate Diploma In Statistics	3	75.0	0.0	1	25.0	0.0	4	0.0	0	0.0	0.0	1	100.0	0.1	1	0.1
Master of Maritime Studies - Research	3	75.0	0.0	1	25.0	0.0	4	0.0								
Bachelor of Communication and Media Studies - Bachelor of Science	0	0.0	0.0	3	100.0	0.0	3	0.0								
Bachelor of Mathematics - Bachelor of Laws	1	33.3	0.0	2	66.7	0.0	3	0.0								
Bachelor of Medical and Radiation Physics (Honours) - Advanced	2	66.7	0.0	1	33.3	0.0	3	0.0								
Cross-Institutional (Postgrad)	1	33.3	0.0	2	66.7	0.0	3	0.0								
Graduate Certificate in Adult Education	0	0.0	0.0	3	100.0	0.0	3	0.0								
Graduate Certificate in Indigenous Health	1	33.3	0.0	2	66.7	0.0	3	0.0								
Graduate Certificate in Literacy	0	0.0	0.0	3	100.0	0.0	3	0.0								
Graduate Certificate in Marketing	1	33.3	0.0	2	66.7	0.0	3	0.0	0	0.0	0.0	1	100.0	0.1	1	0.1
Graduate Certificate in TESOL	0	0.0	0.0	3	100.0	0.0	3	0.0								
Graduate Diploma in Commerce	0	0.0	0.0	3	100.0	0.0	3	0.0								
Graduate Diploma in Prosecutions	3	100.0	0.0	0	0.0	0.0	3	0.0								

Graduate Diploma in Vocational Education and Training	1	33.3	0.0	2	66.7	0.0	3	0.0								
Master of Accountancy - Research	1	33.3	0.0	2	66.7	0.0	3	0.0	1	100.0	0.2	0	0.0	0.0	1	0.1
Master of Business Administration	3	100.0	0.0	0	0.0	0.0	3	0.0								
Master of Finance - Research	0	0.0	0.0	3	100.0	0.0	3	0.0	0	0.0	0.0	1	100.0	0.1	1	0.1
Master of Financial Mathematics	2	66.7	0.0	1	33.3	0.0	3	0.0								
Master of Indigenous Health	1	33.3	0.0	2	66.7	0.0	3	0.0								
Master of Marketing - Research	2	66.7	0.0	1	33.3	0.0	3	0.0								
Non-Award	0	0.0	0.0	3	100.0	0.0	3	0.0								
Bachelor of Nursing (Conversion)	0	0.0	0.0	2	100.0	0.0	2	0.0	0	0.0	0.0	1	100.0	0.1	1	0.1
Graduate Certificate in Educational Leadership	0	0.0	0.0	2	100.0	0.0	2	0.0	0	0.0	0.0	1	100.0	0.1	1	0.1
Graduate Certificate in Engineering Asset Management	2	100.0	0.0	0	0.0	0.0	2	0.0								
Graduate Certificate in Management	2	100.0	0.0	0	0.0	0.0	2	0.0								
Graduate Certificate in Multicultural Journalism	0	0.0	0.0	2	100.0	0.0	2	0.0								
Graduate Certificate in Nursing	1	50.0	0.0	1	50.0	0.0	2	0.0								
Graduate Certificate in Special Education	0	0.0	0.0	2	100.0	0.0	2	0.0								
International Bachelor of Science (Honours)	0	0.0	0.0	2	100.0	0.0	2	0.0								
Master of Arts (Honours)	1	50.0	0.0	1	50.0	0.0	2	0.0								
Master of Economics - Research	1	50.0	0.0	1	50.0	0.0	2	0.0	1	100.0	0.2	0	0.0	0.0	1	0.1
Master of Laws - Research	2	100.0	0.0	0	0.0	0.0	2	0.0								
Master of Management	2	100.0	0.0	0	0.0	0.0	2	0.0								
Master of Science (Honours)	2	100.0	0.0	0	0.0	0.0	2	0.0								
Non-Award : Full-Fee	2	100.0	0.0	0	0.0	0.0	2	0.0								
Bachelor of Communication and Media Studies (Honours)	1	100.0	0.0	0	0.0	0.0	1	0.0	1	100.0	0.2	0	0.0	0.0	1	0.1
Bachelor of Computer Science - Bachelor of Laws	1	100.0	0.0	0	0.0	0.0	1	0.0								
Bachelor of Health Science	0	0.0	0.0	1	100.0	0.0	1	0.0								
Bachelor of Information Technology and Communication	1	100.0	0.0	0	0.0	0.0	1	0.0								
Bachelor of Laws / Graduate Diploma in Legal Practice	0	0.0	0.0	1	100.0	0.0	1	0.0								
Bachelor of Marine Science (Honours)	1	100.0	0.0	0	0.0	0.0	1	0.0								
Bachelor of Mathematics (Honours)	1	100.0	0.0	0	0.0	0.0	1	0.0								
Certificate in Second Language Teaching	0	0.0	0.0	1	100.0	0.0	1	0.0								
Graduate Diploma in Engineering	1	100.0	0.0	0	0.0	0.0	1	0.0								
Graduate Certificate in Banking and Finance	0	0.0	0.0	1	100.0	0.0	1	0.0								
Graduate Certificate in Computer Based Learning	0	0.0	0.0	1	100.0	0.0	1	0.0								
Graduate Certificate in Higher Education	0	0.0	0.0	1	100.0	0.0	1	0.0								
Graduate Certificate in Social Change and Development	1	100.0	0.0	0	0.0	0.0	1	0.0								
Graduate Certificate in Vocational Education and Training	1	100.0	0.0	0	0.0	0.0	1	0.0	1	100.0	0.2	0	0.0	0.0	1	0.1

Graduate Diploma in Adult Education and Training	0	0.0	0.0	1	100.0	0.0	1	0.0								
Graduate Diploma in Business Administration	1	100.0	0.0	0	0.0	0.0	1	0.0								
Graduate Diploma in Indigenous Health	0	0.0	0.0	1	100.0	0.0	1	0.0								
Graduate Diploma in Marketing	0	0.0	0.0	1	100.0	0.0	1	0.0								
Graduate Diploma in Public Health	0	0.0	0.0	1	100.0	0.0	1	0.0								
Master of Economics	1	100.0	0.0	0	0.0	0.0	1	0.0								
Master of Health Management	0	0.0	0.0	1	100.0	0.0	1	0.0								
Master of Industry-based Information Technology	0	0.0	0.0	1	100.0	0.0	1	0.0								
Master of Information Systems (Advanced)	1	100.0	0.0	0	0.0	0.0	1	0.0								
Master of Laws	1	100.0	0.0	0	0.0	0.0	1	0.0								
Master of Laws (Honours)	0	0.0	0.0	1	100.0	0.0	1	0.0								
Master of Mathematics	0	0.0	0.0	1	100.0	0.0	1	0.0								
Master of Policy	0	0.0	0.0	1	100.0	0.0	1	0.0								
Master of Social Change and Development - Research	1	100.0	0.0	0	0.0	0.0	1	0.0								
Master of Statistics	1	100.0	0.0	0	0.0	0.0	1	0.0								
Undergraduate Enabling Domestic	1	100.0	0.0	0	0.0	0.0	1	0.0								
Total	6454	48.5	100	6843	51.5	100	13297	100	604	40.2	100.0	892	59.4	100.0	1501	100.0

Appendix C

Financial Literacy Survey

Financial Literacy Survey 2006

University of Wollongong

Are you confident that you have the right knowledge and skills to succeed in today's complex society?

If not, why not help us to help you?

By increasing your financial knowledge and skills, you will become:

- More employable
- More confident when making financial decisions and investment choices
- Less likely to be fooled by cunning advertising and marketing practices, and
- Less likely to be misled on financial matters.

By participating in a voluntary Financial Literacy Survey, you can help us to investigate ways in which we can help you, as students, to succeed in today's complex society.

The survey is voluntary and participants will remain totally anonymous and results will be kept strictly confidential.

The survey should take around 20 to 30 minutes of your time. To begin the survey, please click on the "**Next Section**" button.

Section 1
Your Demographic Characteristics

Please enter your birth year in WHOLE numbers (eg YY):

1	9		
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Please type in your COUNTRY of birth:

Please type in your FIRST language:

Sex:

- ☐ Male
- ☐ Female

Study Load:

- Full-time
- Part-time

Type of study:

- ☐ Undergraduate
- ☐ Postgraduate (Course Work)
- ☐ Postgraduate (Research)

In what year of full-time equivalent study are you in?

- ☐ First year
- ☐ Second year
- ☐ Third year
- ☐ Higher

Is this your final year of study?

- ☐ Yes
- ☐ No

Are you a mature age student?

- ☐ Yes
- ☐ No

Do you have a disability?

- ☐ Yes
- ☐ No

Have you EVER been in the workforce?

- Yes
- No

Are you CURRENTLY employed?

- ☐ Yes
- ☐ No

If YES, what type of employment?

- ☐ Casual
- ☐ Part time
- ☐ Full time

Which of the following best describes your current living situation?

- ☐ Living at home with parents/family
- ☐ Own home (with mortgage)
- ☐ Own home (no mortgage)
- ☐ Living in house/unit rent free
- ☐ Renting alone
- ☐ Renting with other(s)
- ☐ Boarding with family/friends
- ☐ Other

Please select the best description of your CURRENT major area of study:

- ☐ Accounting and finance
- ☐ Art and design
- ☐ Biological sciences
- ☐ Biomedical science
- ☐ Business
- ☐ Chemistry
- ☐ Civil, mining and environmental engineering
- ☐ Earth and environmental sciences
- ☐ Economics and information systems
- ☐ Education
- ☐ Electrical, computer and telecommunications engineering
- ☐ English literatures, philosophy and language
- ☐ History
- ☐ Information technology and computer science
- ☐ Journalism and creative writing
- ☐ Law
- ☐ Librarianship
- ☐ Management and marketing
- ☐ Mathematics and applied statistics
- ☐ Mechanical and materials engineering
- ☐ Medicine
- ☐ Music and drama
- ☐ Nursing
- ☐ Physics
- ☐ Politics
- ☐ Psychology
- ☐ Public health
- ☐ Social sciences, media and communication

What is your MAIN source of income?

- ☐ Salary/Wages
- ☐ Government allowance/payments
- ☐ Parental/family support
- ☐ Spouse/Partner income
- ☐ Other

What is your total ANNUAL income?

- ☐ Under \$10,000
- ☐ \$10,000 - \$14,999
- ☐ \$15,000 - \$19,999
- ☐ \$20,000 - \$29,999
- ☐ \$30,000 - \$39,999
- ☐ \$40,000 +

What is your estimated TOTAL level of debt?

- ☐ Under \$5,000
- ☐ \$5,000 - \$9,999
- ☐ \$10,000 - \$14,999
- ☐ \$15,000 - \$19,999
- ☐ \$20,000 +

Section 2

Your Perceptions

For the following questions please indicate how well you understand the specified concept, where:

1 = Strongest feeling/
4 = Weakest feeling/ability

1. How well do you understand the term 'Bank Cheque'?
 - ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4

2. How well do you understand the concept of 'compound interest'?
 - ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4

3. How well do you understand the term 'direct debit'?
 - ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4

4. How well do you understand the concept of 'mortgage insurance'?
 - ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4

5. When applying for a personal loan, how well do you understand the rights and obligations of a 'personal guarantor'?
 - ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4

6. How well do you understand the advantages and disadvantages of different forms of payment, such as: cash; credit cards; debit cards, and loans?
 - ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4

7. How well do you understand the difference between secured loans and unsecured loans?
 - ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4

8. How well do you understand how companies and other organisations are financed, including shares?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

9. How well do you understand the concepts of 'superannuation'?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

10. How well do you understand the concepts of 'insurance'?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

11. How well do you understand fixed interest rates vs variable interest rates?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

12. How well do you understand the relationship between risk and return?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

13. In general, how well do you understand your rights and responsibilities as a consumer?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

For the following questions please indicate how confident you are at performing the specified task, where:

1 = Very confident
4 = Not at all confident

14. How confident are you at performing arithmetic calculations involving addition, subtraction, multiplication and division?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

15. How confident are you at calculating percentages?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

16. How confident are you at calculating averages?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

17. How confident are you at general comprehension?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

18. If you experienced difficulty with a financial institution that you were unable to resolve directly, how confident are you that you would know where to go to make an effective complaint?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

For the following questions please indicate how strongly you agree or disagree with the statement, where:

1 = Strongly Agree
4 = Strongly Disagree

19. I spend all of my money as soon as I get it and don't really plan for the future.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

20. I always keep an eye on expenses and have a well-organised budgeting system.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

21. I often have trouble setting money aside for major financial outlays.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

22. Using a credit card to purchase a new TV is a good way to have something now, even if it costs interest

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

23. I generally feel 'out of control' when it comes to spending money and using credit or borrowing.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

24. It is important to have both a long-term and a short-term financial plan.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

25. Saving for retirement is not that important because the government will make up the gap.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

26. When making financial decisions, I generally feel well-informed.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

Section 3

Test Yourself

For the following questions please select the best answer:

1. If Jane brought one kilo of apples for \$4.99 and a loaf of bread for \$2.99, how much did she spend?
 - ☐ \$7.95
 - ☐ \$9.50
 - ☐ \$8.00
 - ☐ \$8.05
2. If your petrol bill cost you a total of \$43.60, how much change would you receive from a \$50 note?
 - ☐ \$7.40
 - ☐ \$6.40
 - ☐ \$7.60
 - ☐ \$6.50
3. If a TV costs \$1,200, how many could you buy with \$4,000?
 - ☐ 3
 - ☐ 4
 - ☐ 5
 - ☐ 2
4. What is $20 \times \$350$?
 - ☐ \$61,000
 - ☐ \$6,100
 - ☐ \$7,200
 - ☐ \$7,000
5. Suppose you have 100 shares that you purchased at \$30 per share and then you sell them one year later at \$26 a share, after a dividend of \$2 per share is paid. What is your total gain or loss from this investment?
 - ☐ \$4,000 (loss)
 - ☐ \$200
 - ☐ \$200 (loss)
 - ☐ \$400
6. If you have a weekly income of \$400 and you save \$120, what proportion of your weekly income have you saved?
 - ☐ 30%
 - ☐ 25%
 - ☐ 20%
 - ☐ 15%
7. Which statement about a Bank cheque is most accurate?
 - ☐ A Bank cheque is a cheque written from your own personal cheque account
 - ☐ A Bank cheque is written by the bank on your behalf, using funds from your personal bank account and incurs a fee
 - ☐ Bank cheques are equivalent to cash
 - ☐ Bank cheques are usually only available for corporate use

8. Please read the following product disclosure statement from the XYZ Bank about providing your tax file number (TFN):

“It is not compulsory for you to provide your TFN. However, if you choose not to do so, XYZ is required to deduct withholding tax from any interest earned unless you are in an exempt category. Withholding tax is calculated at the highest marginal tax rate plus Medicare Levy.”

What do you think is the **key** information from this statement?

- ☐ Providing your TFN is optional
- ☐ Medicare Levy is compulsory
- ☐ If you don't provide your TFN then any interest will be taxed at the highest rate
- ☐ Withholding tax is compulsory

9. Suppose that your fortnightly rental payment of \$280 is automatically deducted from your bank account each fortnight by your landlord's real estate agent. This type of payment system is an example of:

- ☐ An automatic savings plan
- ☐ A direct debit payment
- ☐ A personal cheque payment
- ☐ A charge-back on your credit card

10. Which of the following would be the best option in order to maximize the amount of interest earned on a sum of money?

- ☐ 16% pa simple interest, calculated monthly
- ☐ 16% pa simple interest, calculated daily
- ☐ 15% pa compound interest, calculated bi-annually
- ☐ 15% pa compound interest, calculated daily

11. Which of the following statement(s) about mortgage insurance is correct?

- ☐ Mortgage insurance covers the lender in case the borrower defaults on the loan and the property is sold for less than the amount outstanding on the loan.
- ☐ Most lenders require mortgage insurance if you are borrowing more than 90% of the valuation of the property.
- ☐ Mortgage insurance is required by all first home buyers regardless of the amount borrowed.
- ☐ Both (1) and (2) are correct
- ☐ Both (1) and (3) are correct

12. What is the average return on the following investment over the 3 year period?

Year	Return (\$)
2003	16
2004	24
2005	20

- ☐ \$19
- ☐ \$22
- ☐ \$20
- ☐ \$18

13. Which of the following statements about personal guarantors is false?
- ☐ The guarantor is fully responsible for repayments if the borrower defaults
 - ☐ The guarantor must be assessed and approved by the lender before a loan is approved
 - ☐ The guarantor can not be a relative of the borrower
 - ☐ The guarantor must be over the age of 18 years
14. Which of the following is an advantage of using a debit card?
- ☐ An interest-free period of usually around 30 days
 - ☐ Ability to pay for goods via the internet (i.e. Bpay)
 - ☐ PIN security
 - ☐ No need to check bank statement for reconciliation against personal records
15. Which of the following is a disadvantage of using a money order to pay for goods?
- ☐ There is always a fee incurred when purchasing a money order
 - ☐ Eliminates the risks involved when sending cash in the post
 - ☐ If the money order exceeds \$10 then proof of ownership is required
 - ☐ Only a selected few post offices are able to cash money orders
16. Credit cards and store cards usually have an interest free period
- ☐ True
 - ☐ False
17. If a loan is unsecured, the interest rate is likely to be higher so as to cover the lender in case of borrower default
- ☐ True
 - ☐ False
18. Which of the following is NOT a benefit of using an ATM?
- ☐ Convenient 24-hour access
 - ☐ Lower fees than over the counter
 - ☐ Able to access as little or as much cash as you want, in one quick and easy transaction
 - ☐ Quicker than going into a branch
19. Which of the following statements is correct?
- ☐ If a loan is unsecured, the interest rate is likely to be lower
 - ☐ If your car loan is secured, the bank has full ownership of the car until the final repayment is made
 - ☐ If your car loan is unsecured, the bank has the right to sell the car in the case of loan default
 - ☐ If a loan is secure, the interest rate is likely to be higher
20. Private organisations are primarily financed through Government and public organisations are primarily financed through shareholders
- ☐ True
 - ☐ False

21. If you were presented with an investment which offered rates well above the market at no apparent risk, would you choose to invest?
- ☐ Yes
 - ☐ No, appears 'too good to be true'
22. Which of the following statements is correct?
- ☐ Employees are required by law to make superannuation payments in addition to their employer's contribution
 - ☐ The maximum allowable contribution by the employee is 20%
 - ☐ Employers are required by law to make superannuation payments on behalf of their employees
 - ☐ The maximum allowable contribution by the employer is 20%
23. Care should be taken when considering how much money to put into your superannuation fund because once you have put money in, it is likely that you are unable to take it out again until you retire
- ☐ True
 - ☐ False
24. Superannuation is taxed at a lower rate than other investments
- ☐ True
 - ☐ False
25. If your car loan is to be repaid over a period of 5 years and you happen to win the lottery and pay out the loan after 3 months, you would most probably be required to pay an early termination fee
- ☐ True
 - ☐ False
26. If you have just purchased your first house and you intend to rent it out for 2 years before you actually move in, then you are entitled to receive the first home owners grant of \$7,000
- ☐ True
 - ☐ False
27. Compulsory Third Party (CTP) Green Slip insurance does not cover damage to property or other vehicles
- ☐ True
 - ☐ False
28. A home loan can have both a fixed interest rate component and a variable interest rate component
- ☐ True
 - ☐ False
29. An investment with a high return is likely to have lower than average risks?
- ☐ True
 - ☐ False

30. When applying for a loan, if your application is successful, you will most likely have to pay an establishment fee
- ☐ True
 - ☐ False
31. A credit rating is an estimation of a person's suitability to be granted credit
- ☐ True
 - ☐ False
32. The danger of using past returns to predict future returns on the stock market is that share prices reflect current economic conditions and are thus unpredictable using past returns
- ☐ True
 - ☐ False
33. Short-term market fluctuations can be expected even with good investments
- ☐ True
 - ☐ False
34. A term deposit is usually used as a long-term investment
- ☐ True
 - ☐ False
35. The primary reason for diversifying an investment portfolio is to avoid excessive exposure to any one source of risk
- ☐ True
 - ☐ False
36. Which of the following statements is false?
- ☐ Most insurance products are optional
 - ☐ Comprehensive motor vehicle insurance is usually compulsory for a secured personal car loan
 - ☐ Insurance is used as a 'safety net' in case something of value is lost, stolen or damaged
 - ☐ Home and contents insurance is used to increase the value of the property
37. Which of the following statements is false?
- ☐ There are usually no transaction fees when using internet banking services
 - ☐ There are usually no transaction fees when using telephone banking services
 - ☐ Superannuation accounts usually charge an annual account keeping fee
 - ☐ Credit cards do not incur any fees or charges
38. Only licensed financial businesses are allowed to sell financial products
- ☐ True
 - ☐ False
39. If your wallet is stolen and your PIN was on a piece of paper inside your wallet, then you are fully responsible for any unauthorised withdrawals from your bank account
- ☐ True
 - ☐ False

40. Providers of professional advice about financial products are not required to disclose if they are receiving commission as a result of their advice
- ☐ True
 - ☐ False
41. When renewing a comprehensive car insurance policy, you must tell the insurance company about the new car stereo that you had installed last week
- ☐ True
 - ☐ False
42. If you have a credit card and you are the primary card holder then you are responsible for any debt incurred by a secondary card holder
- ☐ True
 - ☐ False
43. After taking out a new insurance policy, you change your mind 2 days later and cancel the contract. Can you have your premium fully refunded?
- ☐ Yes
 - ☐ No
44. If two people jointly take out a loan, which one of the following most accurately describes the responsibility for repayment of the loan?
- ☐ Each person is responsible for repayment of half the loan
 - ☐ Both persons are responsible for repayment of the entire loan
 - ☐ The older of the two persons is responsible for repayment of the entire loan
 - ☐ Only one person must be responsible for repayment of the entire loan
45. Thinking about debts and borrowing money, which one of the following is most likely to give someone a bad credit rating?
- ☐ Asking the bank for an increased overdraft
 - ☐ Borrowing from an organization other than a bank
 - ☐ Borrowing money from a family member to make mortgage repayments
 - ☐ Being more than 60 days late with the minimum payment on a credit card
46. Which of the following do you think would be the most appropriate course of action if you were not happy with the service that you received from your financial institution?
- ☐ Call the Department of Fair Trading and lodge an official complaint
 - ☐ Send a letter of complaint to the Banking Ombudsman
 - ☐ Ask to speak to the Branch Manager to discuss your concerns
 - ☐ Close your existing account(s) with this financial institution and change over to a different financial institution.

Thank You. You have now completed the survey.

Thank you for your participation.

Click on the **Exit** button below to exit the survey.

Then close the Thank You window that opens. Next click on the small "X" in the upper right hand corner of your screen to return to your desktop.

Table C1 Self-rating questions and their relevant testing question(s)

Area of knowledge/skill	Self-rating question	Testing question(s)
Bank cheque	1	7
Compound interest	2	10
Direct debit	3	9
Mortgage insurance	4	11
Personal guarantor	5	13
Payment methods	6	14, 15, 16
Secured and unsecured debt	7	17, 19
How companies are financed	8	20
Superannuation	9	22, 23, 24
Insurance	10	27, 36
Fixed vs variable rates	11	28
Risk and return	12	29
Rights and responsibility	13	25, 26, 30, 38, 40, 41, 42, 43
Arithmetic calculations	14	1, 2, 3, 4, 5
Percentages	15	6
Averages	16	12
General comprehension	17	8
Making effective complaints	18	46