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Example

A COMPARATIVE ANALYSIS OF THE FINANCIAL LITERACY OF FINAL YEAR DIPLOMA STUDENTS IN DIFFERENT FIELDS OF STUDY AT THE UNIVERSITY OF JOHANNESBURG

by

MARIA BOTHA

MINOR DISSERTATION

submitted in partial fulfilment of the requirements for the degree

MAGISTER COMMERCI

in

FINANCIAL MANAGEMENT

in the

FACULTY OF ECONOMIC AND FINANCIAL SCIENCES

at the

UNIVERSITY OF JOHANNESBURG

SUPERVISOR: Mrs A Oosthuizen

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January 2013
Abstract

Economically active individuals are frequently faced with the responsibility of making financial decisions which may dramatically impact their financial wellbeing. In today’s world of complex financial products and individuals increasingly being responsible for their own financial wellbeing, higher levels of financial literacy are of the utmost importance. The main aim of this study will be to determine whether students who study towards a diploma in a finance-related field have higher financial literacy levels than those studying towards a diploma in field of study that is not finance-related. A quantitative research methodology will be employed to the study in the form of a survey. The population includes all the diplomas presented on the University of Johannesburg (UJ), Bunting Road campus, and the sample consists of one finance-related diploma and two non-finance-related diplomas. Although the results of the study, in line with previous research, indicated that the finance group performed better than the non-finance group, the margin was smaller than expected and the average financial literacy score of both groups was low. Students performed the worst in the savings and borrowings and the best in the basic concepts content area. Many of the demographic and background characteristics identified by previous research to influence financial literacy could not be analysed as there was not enough variation or adequate representation within the total sample. In contrast to previous research many of the remaining demographic and background characteristics that could be analysed did not influence financial literacy. Only language (Sotho) and funding (NSFAS and my parents and/or family paid) were found to influence financial literacy levels. As this study indicates that the financial literacy levels of final year diploma students in South Africa are low, higher education might have to consider introducing a financial curriculum to increase financial literacy.

Keywords: Financial literacy; field of study; higher education; survey; Johannesburg.
DECLARATION OF ORIGINAL WORK

I, Maria Botha, declare that this minor dissertation is my own unaided work. Any assistance that I have received has been duly acknowledged in the dissertation. It is submitted in partial fulfilment of requirements for the degree of Master of Commerce at the University of Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

___________________     __________________
Signature       Date
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CHAPTER 1

FINANCIAL LITERACY IN FINAL YEAR STUDENTS

1.1 INTRODUCTION AND BACKGROUND

Economically active individuals are frequently faced with the responsibility of making financial decisions which may dramatically impact their financial wellbeing. Higher levels of financial literacy lead to better decision-making, which in turn is vital to living a prosperous, healthy and happy life (Beal & Delpachitra, 2003; Fresler, 2006; Mandell & Schmid, 2009; Marcolin & Abraham, 2006). In today’s world of complex financial products and individuals increasingly being responsible for their own financial wellbeing, higher levels of financial literacy is of the utmost importance. The wrong financial decisions, due to lack of financial literacy, could lead to financial problems, which often cause stress, depression, a decrease in work productivity and lower self-esteem (Garman, Kim, Kratzer, Brunson & Joo, 1999). In order for individuals to make the best financial decisions they therefore need to be financially literate.

Although studies have found that individuals become more financially literate through experience and age, individuals cannot afford to make financial mistakes when they are young. According to Chen and Volpe (2002), it is important to possess high levels of financial literacy early in life. A number of studies have however found that students specifically are not financially literate and do not know how to manage their personal finances or make informed decisions (Beal & Delpachitra, 2003; Borden, Lee, Serido & Collins, 2008; Chen & Volpe, 1998; Cude, Lawrence, Lyons, Metzger, Lejeune, Marks & Machmtes, 2006; Lyons & Hunt, 2003; Williams, 2008). This lack of financial literacy is a cause for concern if one considers that some students finance their studies through student loans and might not be aware of the terms and conditions or understand the different interest rates (fixed or variable). Many of these students will therefore also be near to entering the job market without being financially literate. Once they are working they will be faced with even more financial responsibilities and decisions that vary from balancing a household budget, entering into a cell phone contract, financing a car, arranging a mortgage, taking out insurance and medical coverage, and starting to provide for their children’s education and their own retirement. If students do not possess basic financial skills they might not be able to make the best decisions for financial wealth optimisation.
1.2 FINANCIAL LITERACY

Various studies have found that financial literacy improves financial decision-making (Lusardi, 2008; Mandell & Schmid, 2009), and it has become increasingly important for the following reasons:

- The shift from defined benefit to defined contribution pensions has moved the responsibility for retirement security from employers to employees (Lusardi, 2008), who now have the responsibility to decide how much to save and how to allocate their retirement wealth. If individuals are not financially literate they may not plan or save enough for retirement or make costly mistakes (Policy brief, July 2006).

- The variety and complexity of financial products can lead to individuals buying inappropriate products and being victims of fraud and abuse if they do not possess the necessary financial literacy skills to make informed decisions (Gordhan, 2012). If individuals make unwise or uninformed decisions these can have a long lasting negative impact on their lives. Symptoms of dire financial decisions due to lack of financial literacy include irresponsible spending and credit usage, obtaining loans from ‘loan sharks’ or disreputable financial institutions who charge inflated interest rates, engaging in ‘get-rich-quick’ and Internet scams, and entering into contracts for cellular telephone and satellite television that they cannot afford. This can result in repossession, debt, insufficient or lack of financial independence, stress, decreasing productivity in the workplace and even divorce (Marcolin & Abraham, 2006). Making informed decisions is critical not only to the financial wellbeing of individuals but also to the proper functioning of financial markets and the economy (Gaberlavage, 2009).

For individuals to make the right financial decisions, at least some kind of financial knowledge or understanding is required (Lusardi, 2008; Mandell & Schmid, 2009). Studies conducted in various countries amongst the following groups found that individuals are neither financially literate nor in possession of the financial literacy skills necessary to making informed decisions:

- **High-school students** (Danes, Huddlestone-Casas & Boyce, 1999; Mandell & Schmid, 2009; McCormick, 2009; Samy, Tawfik, Huang & Nagar, 2007; Varcoe, Martin, Devitto & Go, 2005)

- **College and university students** (Beal & Delpachitra, 2003; Borden, Lee, Serido & Collins, 2008; Chen & Volpe, 1998; Cude et al., 2006; Lyons & Hunt, 2003; Williams, 2008)
• **Adults and workers** (Garman et al., 1999; Lusardi, 2008; Volpe, Chen & Liu, 2006).

Previous studies also identified the following demographic and background characteristics to influence the financial literacy levels of individuals:

- **Gender** (Chen & Volpe, 1998, 2002; Fonseca, Mullen, Zamarro & Zissimopoulos, 2010)
- **Marital status** (Fonseca et al., 2010; Taylor & Wagland, 2011)
- **Language** (Worthington, 2006)
- **Race** (Murphy, 2005; Mandell, 2009)
- **Work experience** (Taylor & Wagland, 2011; Worthington, 2006; Chen & Volpe, 2002)
- **Parental education** (Mandell, 2009; Lusardi, Mitchell & Curto, 2010)
- **Access to financial institutions** (Johnson & Sherraden, 2007)
- **Age** (Chen & Volpe, 1998, 2002)

The literature offers varying perspectives on which demographic and background characteristics influence financial literacy. Field of study, for example has been identified by certain researchers as an influence on financial literacy, and the majority of studies indicate that finance students are more financially literate than others (Chen & Volpe, 1998, 2002; Hanna et al., 2010; Marcolin & Abraham, 2006) while other researchers, although in the minority, found no influence between field of study and financial literacy (Ludlum, Tinker, Ritter, Cowart, Xu & Smith, 2012).

Researchers’ continue to use varying definitions and non-standardised measurement criteria for financial literacy makes comparing studies difficult. However, a suitable definition should include knowledge, skills and application, dimensions incorporated by the Jump$Start Coalition (2007), as: “the ability to use knowledge and skills to manage financial resources effectively for lifetime financial security”. This definition is also in line with the standard definition of literacy developed by the Literacy Definition Committee, which implies that individuals should have knowledge as well as skills or ability to be considered financially literate.
Financial knowledge and application abilities will be tested with regards to the following main financial literacy content areas as identified by numerous previous studies and confirmed by Huston (2010) and Redmund (2010):

- basic concepts
- savings and borrowings
- insurance
- markets and instruments
- financial planning.

An adapted version of the Jump$tart coalition (2008) questionnaire will be used as it provides questions on these content areas and has been used by the majority of studies (Redmund, 2010).

The majority of research does not indicate whether respondents are financially as it is uncertain what score a respondent should achieve in order to be considered financially literate. Similarly, the current research will not rate a student as being financially literate or illiterate if they achieve certain scores, but will rather focus on whether financial literacy scores are high or low compared to the financial literacy rating score used by Jump$tart coalition (2008), in which a respondent needs to obtain at least 60% to be considered financially literate.

1.3 PURPOSE OF THE STUDY

Against this background, the overall purpose of the research is to determine whether field of study (finance or non-finance students) influences the financial literacy levels of South African third-year diploma students.

The further objectives of the research study are to:

- determine the financial literacy levels of third-year students studying towards a diploma at the University of Johannesburg in 2011
- identify the content areas of financial literacy in which students achieve particularly better or worse results
- examine which demographic and background characteristics influence financial literacy
- compare students’ perceptions of financial literacy to their actual financial literacy levels.
1.4 PROBLEM STATEMENT AND RESEARCH QUESTIONS

The main aim of this study is to determine whether the field of study (finance or non-finance) influences the financial literacy of a group of third-year students studying towards a diploma at the University of Johannesburg (UJ), South Africa. The overall research question designed to address the problem statement has been formulated as follows:

Do students who study towards a diploma in a finance-related field have higher financial literacy levels than those studying towards a diploma in a non-finance-related field of study?

In order to answer this overall research question, the following sub-questions will be addressed:

1. How financially literate are third-year University of Johannesburg diploma students of 2011?
2. In which content areas of financial literacy do students demonstrate better or worse results?
3. Which demographic and background characteristics influence financial literacy levels?
4. How do students’ perceptions of financial literacy compare to their actual financial literacy levels?

1.5 PERCEIVED SIGNIFICANCE AND CONTRIBUTION OF THE STUDY

The limited research on the financial literacy levels amongst South Africans (Engelbrecht, 2009; Shambare & Rugimbana, 2012) will be added to through examining the financial literacy levels of final year diploma students at the University of Johannesburg, Bunting Road campus. If its results are similar to those of previous research that have found financial literacy levels of university students to be low (Danes et al., 1999; Mandell & Schmid, 2009; McCormick, 2009; Samy et al., 2007; Varcoe et al., 2005; Beal & Delpachitra, 2003; Borden et al., 2008; Chen & Volpe, 1998; Cude et al., 2006; Lyons & Hunt, 2003; Williams, 2008; Garman et al., 1999; Lusardi, 2008; Volpe et al., 2006) then introducing a financial curriculum at various educational levels might be considered by the appropriate authorities.

This study will compare results of previous research into influence of financial literacy levels, the majority of which found that finance or business majors possessed higher
levels of financial literacy than others (Chen & Volpe, 1998 & 2002; Hanna et al., 2010; Marcolin & Abraham, 2006). It will also explore the financial areas in which students achieved particularly high and low results, with emphasis on the latter. The influence of demographic and background characteristics in literature vary, and the current study will provide further insight into these.

The financial literacy levels of students are of relevance to potential stakeholders. Diploma students should possess the financial literacy skills to make informed financial decisions, but if the majority are found to be financially illiterate, personal finance curriculums could be developed and incorporated to form part of the basic education of all students. Loan providers and banks provide many students with study loans and later might finance their vehicle or property. The study will determine whether students are aware of and understand the terms and conditions of loan repayments (e.g., fixed or variable rates).

The study may also be of significance to the government, taxpayers and employers, because individuals who are financially illiterate are not likely to make sufficient provision for their retirement. They will thus be dependent on government pensions, which are indirectly funded by taxpayers. Previous studies have found that a lack of financial literacy among employees leads to a decrease in work productivity (Volpe et al., 2006), and higher levels of financial literacy are associated with positive financial behaviour such as increased savings, higher retirement fund contributions and debt payments (Garman et al., 1999).

1.6 SCOPE OF THE RESEARCH STUDY

The main purpose of the research is to determine the relationship between field of study and financial literacy of final year diploma students at the University. The rationale for collecting data only from third-year students was that they should be more financially literate than first and second years, and if found to have low levels of literacy so would all the years. Also, they would soon be entering the job market and it was therefore more important for them to be financially literate than it was for first or second year students. The objective of this study is not to compare students’ financially with their academic progress, but rather to evaluate students at the same academic level in different academic disciplines and to see whether certain demographic and background characteristics influence their level of financial literacy.

The scope of the study is limited to one third-year diploma group with a finance background, namely the diploma in Accounting, compared to two third-year diplomas
without a finance background, namely Architecture and Sports Management. Two non-finance diplomas were selected as their classes were much smaller than the finance group. Selection of the finance-related diploma was based on convenience and personal interest, as the researcher lectured to the first year diploma Accounting students. The non-finance diplomas were judgementally selected as their students were not away on experimental learning and were more numerous.

For students to be regarded as financially literate they needed to possess knowledge and understanding of the following financial content areas, namely basic concepts; saving and borrowing; insurance; markets and instruments; and financial planning. The Jump$tart coalition (2008) questionnaire was used as it provided questions on these content areas. Where the questionnaire did not provide enough questions for each content area, additional ones from other instruments were added (refer to section 3.5, questionnaire construction). Students had to be familiar with everyday financial concepts within the South African context, be able to calculate and answer basic finance questions, be able to compare different financial options and choose the best one.

1.7 RESEARCH METHODOLOGY

This descriptive study will answer the research questions following a quantitative research approach. Primary, cross-sectional data will be obtained through conducting a survey on two samples, namely: students studying towards a finance-related diploma; and students studying towards a non-finance-related diploma. The survey will be conducted in a field setting. Descriptive statistics will be used to describe the demographic characteristics and overall financial literacy levels of the combined samples. Comparative analysis will be performed on the samples to identify certain commonalities and differences in terms of their demographic factors and financial literacy levels in order to answer the research questions set out in section 1.4 of this chapter.

1.7.1 The research instrument and sample selection

The survey will be conducted by means of a structured questionnaire, which will include financial literacy questions covering the five content areas, i) basic concepts; ii) saving and borrowing; iii) insurance; iv) markets and instruments; and v) financial planning. It will also include certain demographic and background characteristic questions, including gender, age, language, race, marital status, children, accommodation, work experience, parental education, funding of studies, and whether respondents own a bank account or
credit card and have taken a personal finance course. The questionnaire will be examined by professionals who are educated and well-informed on matters relating to personal finance to ensure that the most fundamental personal finance questions are covered in the questionnaire.

The population of the study is made up of all the diplomas presented on the Bunting Road campus of the University of Johannesburg. As there were too many diplomas to include all in the study, and the number of students enrolled for certain diplomas were very low or away on experiential learning it will make use of a non-probability sampling method.

1.7.2 Data collection and survey instrument

Primary data in the form of a paper-based multiple choice questionnaire will be collected from third-year diploma students studying at the Bunting Road campus of the University of Johannesburg. The sample will be limited to one finance-related group (diploma in Accounting) and two non-finance-related groups (diploma in Architecture and diploma in Sports Management), and the questionnaire will consist of a financial literacy section divided into five sub-sections with three to five questions under each section. The financial literacy sections reflect the content areas identified by Redmund (2010) and consist of basic financial concepts, saving and borrowing, insurance, markets and instruments and financial planning. There will also be a section covering demographic and background questions identified by literature to influence financial literacy, namely gender, age, language, race, marital status, work experience, accommodation, parental education, funding of studies, access to financial institutions and whether a personal finance course has been taken. The questionnaire is adapted from the Jump$tart coalition (2008) questionnaire which has been analysed by professionals knowledgeable in personal finance and used in previous studies as financial literacy tests (Redmund, 2010). The questions included under each one of the five financial literacy sections therefore include the necessary knowledge and skill questions for a person to be regarded as financially literate in terms of the scope of this study.

Before the questionnaire is administered to the actual sample it will first be pre-tested on a pilot group to minimise errors due to improper design, such as poorly worded or organised questions, as well as to determine the completion time. Students will not require a calculator to answer questions as they will be able to answer the questions by logical reasoning. They will complete the questionnaire either at the beginning or at the end of one of their scheduled lectures thus enhancing the validity of responses as
students will not be able to discuss responses with anyone. Participation in the study is entirely voluntary and all the data will be treated as confidential.

1.7.3 Data analysis

The SPSS commercial statistical analysis software program will be used to analyse the data and present it in summarised graphic and tabular formats for ease of interpretation.

Data will be analysed by using a similar method to that used by Chen and Volpe (1998) and Beal and Delpachitra (2003). The responses from each respondent will be used to calculate the percentage of correct responses for each question, content area and the entire survey.

Firstly, the researcher will be able to answer sub-question 1, “How financially literate are third-year University of Johannesburg diploma students of 2011?” by calculating the average financial literacy score of all respondents for the entire survey. The majority of research does not indicate whether respondents are financially literate as it is uncertain what score a respondent should achieve. Nor will the current research rate a student as being financially literate if they achieve a certain score but rather will focus on whether financial literacy scores are high or low compared to the rating score of 60% used by Jump$tart coalition. Secondly, sub-question 2, “In which content areas of financial literacy did students demonstrate better or worse results?” will be answered by comparing the results of the various content areas (basic concepts, savings and borrowings, insurance, markets and instruments and financial planning) and concluding in which content areas students achieved the most and least number of questions correct.

Sub-question 3, “Which demographic and background characteristics influence financial literacy levels?” will be answered by using descriptive statistics to describe the total sample and only where there is adequate representation and enough variation within the total sample to actually determine a significant difference, a further analysis will be performed to establish whether any of these demographic factors have a significant impact on the financial literacy levels of the students. In order to establish whether the levels are affected by demographic or background factors the literacy scores of students in the upper quartile and lower quartile will be calculated. Two extreme groups, namely students who obtain a higher financial literacy score than the upper quartile and students who obtain a lower financial literacy score than the lower quartile will be identified and compared for any statistical variation in their demographic and background characteristics. Fischer’s exact test will be used to test whether significant differences exist between the two groups.
Sub-question 4, “How do students’ perceptions of financial literacy compare to their actual financial literacy levels?” will be answered by comparing the responses of their financial literacy perceptions to the actual financial literacy score achieved. The Pearson chi-square test will also be used to compare the finance and non-finance students’ perceptions of their own financial literacy levels. Finally the main research question, “Do students that study towards a diploma in a finance-related field have higher financial literacy levels than those studying towards a diploma in a non-finance-related field of study?”, will be answered by comparing the average financial literacy score of the finance group to the non-finance group. t-tests will be used to compare the mean differences between the finance-related and non-finance-related diplomas and Levene’s test for equality of variances will also be used to test the t-test assumption that the variances between the two samples are equal. As well as comparing the average financial literacy score of each group for the entire survey, the percentage of correct responses of the finance-related students in each one of the five content areas will be compared to the non-finance-related students. Chi-square tests will be used to test for a statistical significant difference between the results of the finance and non-finance group at a 5% confidence level.

Descriptive statistics will be used to describe differences between the finance compared to the non-finance-related groups and the Pearson chi-square test will be used to determine whether there are significant differences in terms of the demographic and background characteristics between the two groups.

Where there is adequate representation and enough variation exists within the demographic and background characteristics of the total sample, and if Fischer’s exact test is less than 0.05, indicating significant differences exist between the two extreme groups demographic and background characteristics (refer to sub-question 3), then the demographic and background characteristics that indicated significant differences between the finance or the non-finance group will be analysed to establish whether this could have an impact on the different literacy levels found between the two groups.

1.8 ETHICAL CONSIDERATIONS

As professionals and businesses are required to act in an ethical manner so it is essential for researchers to adhere to certain ethical requirements. This research study was submitted for review to ensure that the title was accepted and registered at the Faculty of Economics and Financial Sciences of the University, and complied with its Professional Code of Ethics. Proper citation and reference techniques were used to acknowledge the
words and ideas of other sources used during the research, and professional behaviour, honesty and integrity were upheld throughout. Participation was voluntary and respondents assured that the information provided by them will be anonymous.

1.9 LIMITATIONS

As indicated in the scope, this study will focus on third-year diploma students from the University of Johannesburg on the Bunting Road Campus studying towards a diploma in Accounting, diploma in Architecture and diploma in Sports Management in 2011. Generalisation to all University of Johannesburg campuses, other South African Universities and among different diplomas and year groups is limited. It will however still provide a good indication of financial literacy skills of diploma students in their final academic year of study. A further limitation is the lack of a standardised definition and measurement criteria. The study addresses this by reviewing the literature and incorporating what was most commonly used and found in the literature.

1.10 OVERVIEW OF REMAINING CHAPTERS (CHAPTER OUTLINE)

This study is divided into five chapters. The first chapter has presented the introduction and background to the study. The second chapter will discuss the relevant literature of the study. Chapter 3 explains the research methodology that will be utilised for this study. In Chapter 4 the results and findings of the data analysis are presented and discussed. The final chapter concludes with a summary of the findings and recommendations for future research.

The outline of the chapters of this study is set out in Table 1.1 below.

Table 1.1: Summary of chapters and content

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1:</td>
<td>Introduction and background to the study</td>
</tr>
<tr>
<td></td>
<td>The first chapter explained the background and research problem of the study.</td>
</tr>
<tr>
<td>Chapter 2:</td>
<td>Literature review</td>
</tr>
<tr>
<td></td>
<td>Chapter 2 will present the existing literature available for the research problem.</td>
</tr>
<tr>
<td>Chapter 3:</td>
<td>Research methodology</td>
</tr>
<tr>
<td></td>
<td>In the third chapter the research design and methodology used in the study</td>
</tr>
</tbody>
</table>
is explained. This includes a discussion of aspects such as the research instrument, sampling strategy, methods of collecting and analysing the data as well as validity and reliability.

**Chapter 4:** Results and findings
The fourth chapter presents the results and findings of the study which was obtained from the questionnaires. A descriptive analysis of the information as well as a statistical analysis (graphs and tables) is presented to explain and discuss the results and findings.

**Chapter 5:** Findings, conclusions and recommendations
In the final chapter the main findings of the study are highlighted. The relationship of the findings of the current study is compared to findings from prior research and recommendations for future research are also addressed.
CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Financial literacy has become increasingly important, and not just for investors. It is becoming essential for economically active individuals trying to decide how to balance their budget, buy a home, fund their children’s education and ensure an income when they retire. Although individuals have traditionally been in charge of managing their own finances, the growing sophistication and complexity of financial markets and products increased the importance of being financially literate (Gallery & Gallery, 2010). Individuals may not fully comprehend the consequences of their choices in these financial products and the people selling them may not be explaining the financial products properly, which could in turn affect their financial well-being (South African Minister of Finance, Pravin Gordhan, July 2012). The recent banking crisis has highlighted individuals’ ignorance in terms of their personal finances and their inability to make appropriate financial decisions. This has resulted in a renewed interest in financial literacy as a field of study (Huston, 2010).

This study aims to add to the body of knowledge in the field of financial literacy by investigating financial literacy levels of third-year diploma students at the University. The research will investigate in which content areas of financial literacy students obtained the best and worst results. In addition it will determine whether certain demographic and background characteristics as identified by previous research influence levels of financial literacy. Students’ scores will be compared to their own perceptions of their financial literacy levels. Lastly, the main aim of the study will be analysed, namely to compare if there is a variation in the financial literacy levels of students with a finance background compared to non-finance students.

In order to achieve the aims as set out above the remainder of this chapter is organised as follows. Firstly, a closer look is taken at the literature in order to compare definitions of financial literacy and the constructs used to measure it. A review of the literature should ensure that the study incorporates the most appropriate and suitable financial literacy definition and measurement criteria and also emphasise the importance of developing a standardised financial literacy construct. Secondly, the importance of financial literacy will be considered, followed by an analysis of financial literacy studies conducted in various countries and on different consumer groups. Next the literature review will analyse the importance and the effectiveness of various financial education programmes to increase
financial literacy and explore financial literacy studies that have been performed in the South African context. Finally, the literature review will examine previous studies that have identified certain demographic and background characteristics that influence individuals’ levels of financial literacy. An examination of these studies will enable the study to identify the demographic and background characteristics that could influence financial literacy levels.

2.2 FINANCIAL LITERACY: DEFINITIONS

There is no commonly agreed upon definition of financial literacy with studies also using varying measurement criteria. Although some comparative studies have been examined, the lack of a standardised definition does pose a limitation to the validity and reliability of the results. Huston (2010) and Redmund (2010) have identified a number of studies that apply the same definition but the measurement varied. Finding a standardised definition and measurement construct is complicated, with various factors to be taken into account, such as country of origin and the consumer group being examined (teen or financial expert). Although the concept of financial literacy dates back to the early 1900s, when consumer education research and initiatives in the United States of America (USA) (Jelley, 1958, cited in Redmund, 2010) were performed, there was little research on it prior to the recent financial crisis, which has highlighted the importance and need for financial literacy studies as it showed people were not financially literate and did not understand the financial products they were using.

Financial literacy has also not always been referred to as such, with others including empowerment (Jekwa, 2007), responsibilization (Williams, 2007), financial capability (Johnson & Sherraden, 2007; Stone, Wier & Bryant, 2008), credit literacy (Lyons, Rachlis, & Scherpf, 2007), financial knowledge (Howlett, Kees & Kemp, 2008; Stone, Wier & Bryant, 2008; U.S. Department of Treasury, 2006) and economic literacy (Vitt, Anderson, Kent, Lyter, Siegenthaler & Ward, 2000). These earlier names and phrases, for example credit and economic literacy, only address certain content areas and not the whole. Financial capability is defined as: “Participation in economic life should maximize life chances and enable people to lead fulfilling lives; this requires knowledge and competences, ability to act on that knowledge, and opportunity to act,” by Johnson and Sherraden (2007, p.122), whilst for Redmund (2010) the statement that people need the opportunity to put their knowledge and skills to the test hints at social equality and requires more than an individual can achieve alone. Redmund (2010) adds that none of the alternative names are appropriate substitutes for financial literacy, especially given the scope of most financial literacy programmes. Empowerment, economic understanding
and other such terms allude to deeper outcomes that would be difficult, if not impossible, to achieve through traditional literacy training programmes.

The National Institute for Literacy, a federally-funded American organisation that is committed to literacy programmes, research on literacy rates, and learning techniques, provides programmes that benefit all people, from early childhood to adulthood. The programmes are available for all reading levels, and for adults who are learning English as a second language. The results of the National Assessment of Adult Literacy provide a clear picture of literacy among many different demographics within the American population. The National Institute for Literacy (2008) defined literacy as an individual's ability to read, write and speak in English, compute and solve problems at levels of proficiency necessary to function on the job, in the family and in society. The standard definition of literacy developed by the Literacy Definition Committee and used by the National Adult Literacy Survey (a program to quantify the literacy rate among American adults over the age of 16) is “using printed and written information to function in society, to achieve one’s goals, and to develop one’s knowledge and potential” (Kirsch et al., 2001, p.3). Literacy in the broadest sense consists of understanding (i.e., knowledge of words, symbols and arithmetic operations) and use (ability to read, write and calculate) of materials related to written information, tabular and graphical information and arithmetic and numerical information (Kirsch et al., 2001).

Financial literacy could thus be conceptualised as having two dimensions, namely, understanding (personal finance knowledge) and use (personal finance application) (Huston 2010). Financial knowledge can therefore not be used to refer to financial literacy as it lacks the application dimension, necessary to make financial decisions. Although most researchers and financial experts now use the term, the lack of a standardised definition and measurement makes it difficult to develop effective consumer education programmes. To assess current levels of financial literacy and explore means to improve it, a construct is needed to measure consumers’ ability to make effective financial decisions (Huston, 2010). In an attempt to assist researchers in establishing a standardised, commonly accepted definition and measurement, Redmund (2010) conducted a study of more than 100 resources since 2000, whilst Huston (2010) examined 71 studies drawn from 52 data sets representing the majority of research published on financial literacy measures between 1996 and 2008. Using Pedhazur and Schmelkin’s logical analysis approach (1991, p.59, cited in Huston, 2010), prior studies were analysed to validate the constructs into the main components of definition, content, structure and rating procedure. The results of Huston’s (2010) research indicated that the majority of the studies, 72%, did not include a definition, 15% included some discussion
beyond identifying the specific elements in their measure, but only 13% provided a formal definition of the construct operationalised. The results from the 71 studies analysed by Huston (2010) indicated the following eight definitions:

1. Financial literacy is the ability to make informed judgments and to take effective decisions regarding the use and management of money (Noctor, Stoney & Stradling, 1992, definition used by Beal & Delpachitra, 2003, and ANZ 2008).

2. Personal financial literacy is the ability to read, analyse, manage and communicate about the personal financial conditions that affect material wellbeing. It includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future and respond competently to life events that affect every day financial decisions, including events in the general economy (Vitt et al., 2000; also cited by Cude et al., 2006).

3. Financial literacy is a basic knowledge that people need in order to survive in a modern society (Kim, 2001)

4. Financial literacy refers to a person’s ability to understand and make use of financial concepts (Servon & Kaestner, 2008).

5. Financial literacy is the ability to use knowledge and skills to manage financial resources effectively for lifetime financial security (Jump$tart Coalition, 2007).

6. Financial literacy is the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial wellbeing (U.S. Financial Literacy and Education Commission, 2007).

7. Financial knowledge is defined as understanding key financial terms and concepts needed to function daily in American society (Bowen, 2002).

8. Consumer literacy, defined as self-assessed financial knowledge or objective knowledge (Courchane & Zorn, 2005).

Of the eight definitions identified, two focused primarily on ability (1, 2) and three on knowledge only (3, 7, 8). The definitions used by the U.S. Financial Literacy and Education Commission (2007) and the Jump$tart Coalition (2007) (5, 6) were essentially the same in that they included both knowledge and ability and stated an intended outcome (i.e., lifetime financial security, wellbeing) within the definition. The definition of Servon and Kaestner (2008, definition 4) also included both dimensions of knowledge and ability with no additional stipulation. Forty-seven percent of the studies used the terms ‘financial literacy’ and ‘financial knowledge’ synonymously. Of those studies that included both terms (62%), over three-quarters used these terms interchangeably. If these two
constructs are conceptually different, then using them interchangeably raises a potential problem.

The results of the Redmund (2010) study classified the numerous definitions of financial literacy into five categories:

**Category 1: Knowledge of financial concepts**

To manage finances effectively, one must first possess some knowledge about financial concepts. Researchers confirm the importance of knowledge in improving one’s financial wellbeing (Braunstein & Welch, 2002; Vitt et al., 2000) though the question of what is required to be considered financially literate remains debatable. Varying knowledge has been considered important or necessary by different studies. For example, The National Foundation for Credit Counselling (2008) stated that understanding “the basic tenets of sound financial health and responsibility” was important, while The USA’s initial documentation for the National Strategy for Financial Literacy highlighted a need for “…the information, knowledge, and skills to evaluate options and identify those that best suit [a person’s] needs and circumstances” (U.S. Department of Treasury 2006: Foreword Part 1, p.v). These explanations vary and are so vague that they offer little help in framing future research. It is therefore essential to specify what knowledge is exactly required to be considered financially literate.

**Category 2: Ability to communicate about financial concepts**

Fox, Bartholomae, and Lee (2005) are among several scholars who focus on an individual’s ability to apply financial knowledge rather than on how much knowledge an individual has. They define financial literacy as “crucial to effective consumer decision making” (Fox et al., 2005, p.195), not having a knowledge component as in category 1, but a broader application.

**Category 3: Aptitude in managing personal finances**

Category 3 is very similar to category 2 in that they both focus on the ability dimension of financial literacy. Although many of these conceptual definitions include mention of an ability or aptitude for managing personal finances, these are as brief as Americans having “managed their finances poorly” due to poor financial literacy (Chen & Volpe, 2002, p.289) or as: “…ability to keep track of cash resources and payment obligations, knowledge of how to open an account for saving and how to apply for a loan, basic understanding of health and life insurance, ability to compare competing offers, and plan for future financial needs” (Emmons, 2005, p.336).
Lengthier definitions, such as the one used by Emmons (2005), tend to elaborate upon specific attributes of financial literacy or, in some cases, possible ways to operationally measure financial literacy. According to Redmund (2010), literacy is more than simply a measure of knowledge and should reflect one’s ability to perform a host of tasks related to money, including but not limited to earning, protecting and spending that money. Researchers however need to consider which consumer group they are dealing with when managing personal finances as not all have the same personal finances. For example, high school students will vary considerably from working adults who earn salaries, have a mortgage bond, insurance and other obligations. Students could however be given case study scenarios and taught how to manage personal finance issue they will encounter when they start working. This still does not answer the question of what exactly consumers should be able to do in order for them to manage their personal finances. Researchers should attempt to establish agreement on the tasks necessary to manage personal finances.

Category 4: Skill in making appropriate financial decisions

According to Redmund (2010), decision-making skills are included in most financial literacy definitions. Literacy cannot be measured unless it is tested, and making decisions is essential to money management. Researchers and other experts define decision-making in numerous ways, for example, as “successful financial decision making” (Jump$tart Coalition for Personal Financial Literacy, 2008), “knowledge needed to make informed decisions” (Rhine and Toussaint-Comeau, 2002: p.13) and “making smart choices” (Financial Fitness for Life, 2008).

A number of researchers refer to the financially literate as individuals who “successfully manage debt” while making financial decisions that reflect their personal values (Stone, Wier & Bryant, 2008, p.12). This example brings ethics and integrity into the conceptual definition, but other authors consider not only ethics and integrity but also individual needs and goals: “a set of critical thinking skills to weigh and assess the pros and cons of a particular decision relative to one’s own needs, values, and goals” (Kozup & Hogarth 2008, p.131). In these cases, decision-making skill is perceived as a fundamental competency when it comes to financial literacy.

Category 5: Confidence to plan effectively for future financial needs

Not all scholars incorporate confidence in financial planning into the financial literacy equation. A financial literacy programme targeted by the U.S. Department of Labour toward Generation X and Y women (Wi$eUp 2008) notes that financial literacy involves
the development of “responsible saving habits for future retirement.” They explicitly present planning as a skill essential to financial literacy.

Summary

While there is still a lack of consensus among researchers, the current research study includes the most commonly used financial literacy definition as identified by previous studies reviewed by Huston (2010). It incorporates the Jump$tart Coalition (2007) definition 5, which defines financial literacy as: “the ability to use knowledge and skills to manage financial resources effectively for lifetime financial security”. This is in line with the standard definition of literacy developed by the Literacy Definition Committee which implies that individuals should have knowledge as well as ability and skills dimension to be considered financially literate. The Jump$tart Coalition (2007) definition also incorporates four of the five categories included in financial literacy definitions as identified by studies reviewed in the Redmund (2010) research, namely, knowledge of financial concepts; ability to communicate about financial concepts; aptitude in managing personal finances; and skill in making appropriate financial decisions.

Although confidence in planning effectively for future financial needs is not incorporated by all researchers or explicitly stated in the Jump$tart Coalition (2007) definition, “managing financial resources effectively for lifetime financial security,” does however involve some planning for future financial needs. The current research thus decided to include a financial planning content area in the questionnaire (refer to 2.3.1).

2.3 MEASUREMENT OF FINANCIAL LITERACY

To assess the measurement of financial literacy, the Huston (2010) and Redmund (2010) studies were examined to identify the most distinct content areas included in their questionnaire. Secondly, the structure was examined to identify the number of instrument items used in the questionnaire to measure the financial literacy construct and how the data was collected. Lastly, an interpretation of the financial literacy scores (rating system) achieved was examined. The findings from these studies and their impact on and incorporation in the current study will be discussed next.

2.3.1 Content areas

A review of the literature indicated that at least four distinct content areas were used to varying degrees (Huston, 2010):
- Money basics (including time value of money, purchasing power, personal financial accounting concepts)
- Borrowing (i.e., bringing future resources into the present through the use of credit cards, consumer loans or mortgages)
- Investing (i.e., saving present resources for future use through the use of saving accounts, shares, bonds or mutual funds)
- Protecting resources (either through insurance products or other risk management techniques).

**Table 2.1:** Summary of content areas included in the compilation of studies

<table>
<thead>
<tr>
<th>Content</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic concepts</td>
<td>63%</td>
</tr>
<tr>
<td>Borrowing concepts</td>
<td>52%</td>
</tr>
<tr>
<td>Saving/investment concepts</td>
<td>69%</td>
</tr>
<tr>
<td>Protection concepts</td>
<td>33%</td>
</tr>
<tr>
<td>Single focus (one content area)</td>
<td>35%</td>
</tr>
<tr>
<td>Comprehensive (all four content areas)</td>
<td>25%</td>
</tr>
</tbody>
</table>

**Source:** Huston (2010)

The studies reviewed by Huston (2010) indicated that more than 50% of the measures in prior studies included basic, borrowing or saving/investment concepts, whereas one-third included resource protection concepts. Forty percent of the measures comprised two or three content areas. Just over one third (35%) were focused solely on one content area, with over one-half devoted to saving/investment items only. Although financial literacy should consist of all the content areas identified, only one-quarter (25%) of the measures incorporated all four of the content areas.

Redmund (2010) also identified the same distinct content areas as Huston (2010), with the exception of insurance which although not identified as a distinct content area was still identified as a content area. Planning was also identified to be integrated with saving and investing content areas. The experts should however refine or expand the key concepts considered necessary to be financially literate.

Besides these four distinct financial literacy content areas identified, a number of researchers and programmes refer to financial literacy when they are only measuring a certain component of it. For example, Stone, Wier and Bryant (2008, p.12) define financial literacy, in part, as “basic financial knowledge about how to successfully manage debt.”
Although debt literacy forms part of financial literacy, researchers need to specify that they are only testing the former component and cannot refer to it as the latter. It is essential to include all the content areas when testing financial literacy, not only some.

2.3.2 Structure

Huston (2010) found extensive variation among the studies in the number of instrument items used to measure financial literacy (minimum = 3, maximum = 68). The mean and mode were 16 and 10, respectively. In terms of data collection, 38% of the studies used interview techniques; 58% relied on self-administered surveys and the remaining 4% did not report the data collection method. The overwhelming majority of interview data, 95%, was obtained via telephonic surveys. Much of the self-reported data was collected through the Internet, 38%, but the majority was obtained either in person or by mail, 62% (refer to Table 2.2).

Table 2.2: Summary of data collection methods included in the compilation of studies

<table>
<thead>
<tr>
<th>Data collection</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview</td>
<td>38%</td>
</tr>
<tr>
<td>Telephone</td>
<td>36%</td>
</tr>
<tr>
<td>In person</td>
<td>2%</td>
</tr>
<tr>
<td>Self-report</td>
<td>58%</td>
</tr>
<tr>
<td>Internet</td>
<td>22%</td>
</tr>
<tr>
<td>Paper (either mail/in person)</td>
<td>36%</td>
</tr>
<tr>
<td>Not reported</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: Huston (2010)

Similar to Huston (2010), Redmund (2010) found that surveys were the preferred method among researchers to measure financial literacy. Although some used custom-designed instruments (Chen & Volpe 2002; Lusardi & Mitchell 2007), the majority relied upon one of a handful of national benchmark surveys, including: Jump$tart Coalition for Personal Financial Literacy (beginning in 1997): Annual survey of high school seniors,

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3 Although ‘data’ is the Latin plural of datum it is generally treated as an uncountable ‘mass’ noun and so takes a singular verb (Concise Oxford English Dictionary, 2011, Eds. Stevenson & Waite).
representative of the national population (Braunstein & Welch 2002; Fox, Bartholomae, & Lee 2005; Norvilitis, Osberg, Young, Merwin, Roehling & Kamas, 2006).

A study conducted within a medium security correctional facility provides a strong example of how existing financial literacy assessment methods could be applied consistently in future research. In this particular study, 17 inmates ranging in age from 20 to 61 voluntarily chose to participate in a financial literacy class and related research study. Researchers used a modified version of the Jump$tart test. The average level of financial literacy, as measured by correct answers, increased from 66% to 74%, based on pre- and post-test evaluations (Koenig, 2007). The largest score increases were in understanding credit cards, insurance and retirement, presumably all financial matters that are not commonly discussed within the prison walls. This study indicated that it is possible to use an existing survey tool, in combination with controlled exposure to educational messages or lessons, to gauge the effect of a financial literacy initiative.

2.3.3 Measurement/Rating

Almost 90% of studies reviewed did not provide an indicator of whether a respondent was financially literate (Huston, 2010), whilst the remainder were evenly split between a financial literacy threshold and a grading system to interpret results from the measure. For example, according to Volpe, Chen and Pavlicko (1996, cited in Huston, 2010), a respondent with an investment IQ score of 70 or better was investment literate (i.e., mastered the investment basics). Another study used an A to F grading system, but did not indicate which grade level represented financial literacy (Bankrate, 2003, cited in Huston, 2010). In the Jump$ tart survey, a student fails with a score below 60% (Mandell, 1997, cited in Huston, 2010).

An overwhelming majority (88%) of the studies reviewed did not include a guide for measurement interpretation (Redmund, 2010), an example being The U.S. government’s Taking Ownership National Strategy for Financial Literacy references surveys (conducted separately by North Carolina State University, the Federal Deposit Insurance Corporation, Department of Agriculture and National Bureau of Economic Research). Although they mention the surveys they provide no operational measures (U.S. Department of Treasury 2006). Furthermore, comparing scores across surveys would be meaningless because the constructs and evaluation criteria have not been disclosed.
Summary

Based upon a review of various research studies by Redmund (2010) and Huston (2010), the most distinct content areas of financial literacy are money basics (basic concepts), saving and borrowing, investing (markets and instruments) and protecting resources (insurance). The current research will include all of these content areas identified by the studies. The current researcher also felt it necessary to include an additional content area of financial planning as it is important in many aspects of life, for instance saving for a holiday, house, children's education or retirement. It is prudent to plan how long, how much and in which product to invest. Furthermore, although financial planning was not identified as a distinct content area, it was incorporated in some financial literacy studies viewed by Redmund (2010). The content areas will consist of the basic concepts, saving and borrowing, insurance (protecting resources), markets and instruments (investing) and financial planning, as they move beyond trying to assess broad knowledge or awareness of financial matters to evaluating aptitude in managing specific aspects of personal finance. Furthermore the Redmund (2010) research found that most studies use the Jump$tart Coalition questionnaire. The current study will also adapt its questions from this questionnaire as it incorporates the main financial literacy content areas identified by research (Huston, 2010; Redmund, 2010).

The Jump$tart Coalition (2007) financial literacy definition and a modified survey (2008) were incorporated for this research. According to the Redmund (2010) study, the majority of research uses the Jump$tart Coalition survey to test financial literacy, and it provides a strong example of how existing assessment methods may be applied consistently in future research. The survey questions encompass the most distinct content areas of financial literacy, namely basic concepts, saving and borrowing, insurance (protecting resources), markets and instruments (investing) and financial planning. They have been examined by professionals and found to be a valid measurement. The current study could not include all instruments due to time constraints, but validity was not compromised as questions that tested the same concept more than once or that were not applicable to a South African context were excluded. Kim and Mueller (1978, p.29, cited in Huston, 2010) states that at least three items should be included under each content area for adequate representation. It was therefore decided that each of the five content areas should contain a minimum of three, and due to time constraints a maximum of five items. The questionnaire made use of a total of 19 items to measure financial literacy, which is also in line with and close to the mean. As the majority of previous literature (58%) collected data via questionnaires, the current study also decided to make use of questionnaires. Self-administered questionnaires were used as these would increase the response rate.
and mailing questionnaires would be too expensive. Furthermore, respondents might not feel comfortable and be reluctant to answer questions via interviews.

The creation of a more narrowly defined measurement of financial literacy scores is imperative. Student scores ranged from 48% to 52% of answers correct; however, adult scores ranged from 53% to as high as 81% of answers correct (Redmund, 2010). With no common, fundamental construct and such an extensive range of scores, the question remains as to what is considered a satisfactory or good level of financial literacy. Although developing and testing a national benchmark survey would help create a more narrow range of values for what is satisfactory, or at least an average level of financial literacy, financial literacy education should be tailored to suit different demographics and life stages and not used as a universal approach (Huston, 2010).

2.4 IMPORTANCE OF FINANCIAL LITERACY

Increasingly, individuals have become responsible for securing their own financial well-being after retirement. With the shift from defined benefit to defined contribution pensions, the responsibility and risk for financial decisions, such as how much to save and how to allocate their retirement wealth, are being shifted to workers and away from employers (Lusardi, 2009). These financial decisions will have a major impact on an individual’s future financial wellbeing, especially with life expectancy increasing. Financial literacy is therefore particularly important as individuals will be enjoying longer periods of retirement.

Research also shows a strong link between financial literacy and retirement planning and saving. People who are more financially literate, especially those who understand key concepts such as interest compounding, are more likely to plan for retirement and save (Garman et al., 1999; Lusardi, 2009). Furthermore, Perry and Morris (2005) found that financial literacy influences individuals’ planning behaviour. Those who are more financially literate generally are more likely to behave in a financially responsible manner, such as planning for the future by saving for an adequate income in retirement while avoiding high levels of debt that might result in bankruptcy and foreclosures. They will also be more likely to challenge financial service providers to develop products that respond to their needs, and that should have positive effects on both investment levels and economic growth (Policy brief, July 2006).

Investment opportunities have extended worldwide, allowing individuals to invest in an extensive range of assets and currencies, however, as the financial crisis has made clear, it is very difficult to navigate this new financial system and the costs of mistakes can be
devastating (Lusardi, 2009). Financial literacy is thus critical not only for the financial wellbeing of individuals, but for the proper functioning of financial markets and the economy. It is also of importance in South Africa as a significant number of people who are accommodated within the social welfare system display a lack of understanding of financial matters and are therefore financially vulnerable. Financial vulnerability (inability to manage money, often leading to unmanageable debt) could be improved with increased levels of financial literacy (Engelbrecht, 2009). Although few studies have been conducted in the country, one among educated university students found only moderate levels of financial literacy, suggesting a need to increase financial literacy, even among the educated (Shambare & Rugimbana, 2012). Not only do individuals generally lack the financial background or understanding needed to navigate today’s complex financial markets, they also generally believe they are more financially literate than is really the case (Policy brief, July 2006).

Although this study focuses on the financial literacy of university diploma students, that of adults and parents, high school, college and university degree students was also examined and included in the literature review to provide insight into how ill equipped the youth are for their transition into the adult financial world (Ibrahim, Harun & Isa, 2009).

2.4.1 Adults and parents

Results of research performed on adults found that they do not understand basic financial literacy concepts (Volpe et al., 2006). According to Bowen (2002), a cause for concern is that many of these financially illiterate adults are parents who give misinformed financial advice to their children. This could lead to children making the wrong financial choices they could later regret in life. Williams (2008) confirms this in stating that many parents have difficulty in teaching their children about finances because they are in financial trouble themselves.

2.4.2 High school, college and university students

Prior studies performed in the USA, United Kingdom (UK) and New Zealand on high school students, indicate results of poor financial literacy among teens (Fresler, 2006; Samy et al., 2007; Varcoe et al., 2005). In order for an individual to grasp certain financial concepts, they need to understand and be able to perform certain numerical calculations. Some found these to be low and contributing to low levels of financial literacy (Samy et al., 2007). In South Africa the average of Grade 9 pupils was found to be only 13% in a
recent National Benchmark mathematics test conducted in 2012. Several countries thus support the idea of incorporating financial skills and numeracy in the mathematics syllabus and making it compulsory for all students. Currently there are however many students who leave school and enter the job market without having the opportunity to attend further education and without the ability to make important financial decisions that influence their lives.

Marcolin and Abraham (2006) found similar results of financial illiteracy when comparing financial literacy studies conducted among college and university students in the USA, UK and Australia. In general, males, business major students and students with work experience were found to possess higher levels of financial literacy than their counterparts without. Students with higher levels of financial literacy were also found to be more likely to maintain financial records and choose the right options (Chen & Volpe, 1998). Financial decisions made by students during college were found to have an influence on academic performance and to affect the likelihood to complete their college degree (Cude et al., 2006). A study conducted by Lyons and Hunt (2003) found that financial literacy programmes can help educate students to utilise their student loans to their full potential, drawing up a budget, managing their finances, avoiding fraud, avoiding or managing debt, partaking in comparative shopping and informing themselves about important financial terminology.

Avard, Manton, English and Walker (2005) analysed the basic knowledge of financial issues which should be understood in order to function in everyday life amongst college freshmen at Texas A&M University. The average score achieved by students was a mere 34.8%, indicating the need for a course in personal finance which is relevant to the student’s present stage of life.

Ibrahim et al. (2009) conducted a study on Malaysian degree students and found them to be lacking in financial literacy and thus having poor money management skills. Finance-related seminars were mostly targeted at professionals or business/finance students, and as a result children and young adults mainly learned about financial matters from experience, family and peers. They were mostly inadequately prepared to manage their personal finances when leaving school to enter university, and then the job market.

Beal and Delpachitra (2003) tested five different areas of financial literacy of Australian university students, namely basic concepts, markets and instruments, planning, analysis and decisions and insurance. Each section contained five and 25 questions respectively, and the total number of correct responses ranged from 2 (8%) to 24 (96%), with an average of 13 (52%). This study showed that the average financial literacy level was not
particularly high. Some of the questions students struggled with included those relating to compound interest, where only 52.9% of the respondents answered it correctly, as well as the bank reconciliation question which only 27.9% answered correctly.

Borodich, Deplazes, Kardash and Kovzik (2010) conducted a study by comparing the levels of financial literacy of both high school and university students in Belarus and Japan and of high school students with and without a personal finance course in the USA. Their results showed Japanese high school and university students outperformed all Belarus and U.S. students, regardless of coursework in personal finance or grade level. Although Belarusian university students performed better than Belarusian high school students (51.9% and 45.5%), suggesting an increase in financial literacy over time, Japanese high school and university students showed no increase and achieved almost identical test results (57.2% and 57.3%). Belarusian high school students and U.S. high school students with no personal finance class were found to score similar grades (45.5% and 44.7%). The U.S. students with a personal finance course did however outperform Belarus high school and university students as well as U.S. students who had not taken a personal finance course, and only scored slightly lower than Japanese students by achieving 55.7% for the financial fitness for life test. These results indicate that financial education improves financial literacy. Students from all three countries scored the highest on the earning income topic and the lowest on the topic of saving. This could be attributed to some students having part-time or summer jobs and therefore more first-hand experience with matters relating to earning income. Savings, on the other hand, is a topic with which they might not be as familiar, as they do not usually earn enough income to save or invest. Belarusian and Japanese students also achieved better results at the knowledge level while American students generally achieved better results at the application level. This could be due to Americans having more access to application opportunities.

The results of this international comparison study shows that there is variation in the financial literacy levels throughout the different countries and suggest that differences and type of instruction play a major role in the results. The findings of the current study should provide some indication of the financial literacy levels of South African diploma students and variation in financial literacy levels in different fields of study. The need for the development of a financial education programme might be identified.
2.5 IMPORTANCE OF FINANCIAL EDUCATION

Increased financial literacy through financial education is especially important in light of the current economic recession. Lower savings and increased borrowing have been blamed on a lack of financial literacy, which in turn has been associated with the current financial crisis (Klapper, Lusardi & Panos, 2011). According to Neesa Moodley-Isaacs, (Weekend Argus personal finance newspaper, July 2011), South Africans are not saving nearly as much as they should, with 46% of respondents saying that credit was part of their lives because they would not be able to make ends meet without it, and according to the National Credit Regulator, 8.5 million consumers had impaired credit records.

Other individuals blame lack of financial literacy combined with complex financial products for the economic crisis (Gallery & Gallery, 2010). They propose mandatory education in personal finance, simplification of financial products and increased regulation as a solution to the problem. The simplification of financial products could however limit choice in the marketplace as well as innovation of financial products. Education in personal finance could increase financial literacy as studies have shown a positive relation between financial education and financial literacy (Lusardi, 2003). Some studies have found that there is little evidence that personal finance courses increase financial literacy (Mandell, 2009), though there is compelling evidence that they will improve financial behaviour and contribute to increased savings rates in later years (Bernheim, Garret & Maki, 2001).

A study was conducted by Rosacker, Ragothaman and Gillispie (2009) on the effect of a financial literacy training workshop conducted by upper-level accounting majors on freshman level business school students. A pre/post-test was administered, covering topics such as finance charges, comparative earnings, savings programmes, spending instruments, credit card finance charges, safe saving, pay check deductions, retirement income, credit card theft, business taxes, growth vehicles, income taxes and income sources. The financial literacy workshops tended to improve knowledge relating to finance charges, comparative earnings, savings programs, credit card theft and income taxes. The findings for all the other topics were not statistically significant and the results showed no indication of improvement in knowledge in those areas. These findings indicate that some topics of financial literacy improve with financial education. Other topics, however, might not be relevant or interest freshman students at present and could contribute to the lack of increased financial knowledge on these topics. Another contributory factor could be that upper-level accounting major students might not be experienced enough or be well suited to teach those specific topics. The results indicate that not only did the freshman students gain valuable benefits from the financial literacy training workshop, but
also that the student trainers gained valuable skills such as public speaking, team work, project management, leadership and community service, while simultaneously expanding their own financial literacy.

Gavin Opperman, the chief executive of Absa retail bank, stated that South Africans needed to learn to manage their finances from a young age or they could be faced with serious over-indebtedness (Weekend Argus personal finance newspaper, July 2011). Although it is important to develop good financial habits from an early age, there is also a great need for adult financial education. Many adults have not learned how to manage their finances and continue to lack even basic financial literacy skills. The constant changing financial markets and products also require a current update of an individual's financial education. McCormick (2009) supports the idea of financial education, but stresses that there is a great need for more effective programme designs, especially at a youth level and depending on the individual's stage of life.

South Africa continues to lag behind various countries that have implemented several financial education programmes, ranging from school-based ones for youth to specialised training for adults. Research findings on the effectiveness of youth financial education indicated changes in financial knowledge, attitude and behaviour (Fox, Bartholomae & Lee, 2005). Adult financial education also indicated positive changes in savings, debt and comparison shopping (Choi, 2009). Employees who engaged in financial literacy education programmes also showed positive behaviour, such as saving more for retirement and paying off more debt. They were perceived to be happier and more confident when making financial decisions (Lusardi, 2008), and it was found that all measures of financial literacy improved during the financial crisis. This may be due to increased media coverage (Poole, 2009) and financial literacy campaigns, as well as a growing interest from individuals to learn more due to hard times.

Stone, Wier and Bryant (2008) argue that individuals should spend only what they have, but that sometimes they need credit, which is not necessarily bad if one can afford to repay instalments. For instance, a car may be necessary to get to work, or a loan to improve one's education and so take up a higher-paying job. The problem with many individuals though is that they choose a top of the range car instead of a second-hand one. They do not consider the higher insurance premiums and maintenance costs.

Other studies referred to as “just-in-time education” found that improvement in financial literacy prior to the financing of a house or car resulted in lower repossessions and lower default rates (Hirad & Zorn, 2001). These early intervention initiatives seem like a more promising approach than providing counselling during or after insolvency. Another study
performed in Indonesia and India found that financial literacy was strongly correlated with the use of financial services, savings and retirement planning (Cole, Sampson & Zia, 2009). Credit card holders, who received credit counselling, were also found to be more likely to pay on time and to have lower credit balances (Bernanke, 2006). These studies provide further evidence and support linking financial literacy to financial behaviour. Financial education should thus be highlighted as a priority in all countries to create financially literate consumers who will in turn exert positive financial behaviour.

In South Africa there have also been some financial education attempts. The Johannesburg Stock Exchange (JSE) partnered by the Reserve Bank, the Financial Planning Institute, the South African Savings Institute and the National Credit Regulator, attempted to improve financial literacy among youth by hosting a national youth financial literacy day. Topics included basics in economics, savings and money management, the role of the South African Reserve Bank, investment opportunities on the JSE, credit rights and the importance of financial planning. Although this was a promising start and initiative, it was not nearly enough to reach most of the South African community. Noah Greenhill, former JSE executive, stated that making financial literacy part of the syllabus would help develop an investment and saving savvy South African population.

2.6 Demographic and Background Characteristics that Influence Financial Literacy

Many of the financial literacy studies revealed similar results in terms of demographic and background characteristics that influence it. Variables that have been explored and found to have an effect are discussed in this section.

2.6.1 Gender

Past research has shown that gender is significant in explaining differences in financial literacy and the majority of studies indicate that females tend to be less knowledgeable than males in the areas of financial literacy (Chen & Volpe, 1998 & 2002; Fonseca, et al., 2010). In the case of single mothers it is especially important to be financially literate as they might have to take care of or provide for the family alone. In contrast, research by Mandel (1997, 2002) showed that females tend to be slightly more financially literate than males, owing to their becoming more independent and ambitious, and wanting to learn more and do well to overcome the male status quo. There has also been a shift from males traditionally providing for the family to a more jointly financial contribution by both
male and female. Still other researchers have found gender not to be statistically significant in determining financial literacy, as there was only a marginal difference in scores between the genders (Ludlum, Tilker, Ritter, Cowart, Xu & Smith, 2012; Wagland & Taylor, 2009).

2.6.2 Marital status

Fonseca et al. (2010) found that marital status reduced the gap in financial literacy between male and females by 25%. This may be due to females learning some financial literacy from their male partners. The results of a study performed by Taylor and Wagland (2011) also indicated that single people possessed lower levels of financial literacy.

2.6.3 Language

Language has been shown to influence financial literacy by studies, with Worthington (2006) finding it to be lowest among the unemployed, females and those from a non-English speaking background with a low level of education. This may however be as a result of them not understanding the questions due to their poor English. Many of the student respondents in the current study were from a non-English speaking background, but most of whom would have been exposed to English at school and in their diploma lectures. They should therefore be proficient in English, but the influence of language on financial literacy will be included in the analysis for any statistical significance.

2.6.4 Race

Previous research that has found race to be a factor influencing financially literacy of students includes Murphy (2005) and Mandell (2009). All of these studies found that blacks scored lower in financial literacy tests than do other races. The demographic make-up of the current study is predominantly black, but it will be interesting to see if the findings yield the same results in terms of non-black students achieving better results than black students in the financial literacy test.

2.6.5 Parental education

Mandell (2009), Lusardi, Mitchell and Curto (2010) found that parental education influences financial literacy. Students whose parents had higher levels of education
scored higher in the financial literacy survey than those whose parents had lower levels. Many children learn financial knowledge from their parents and yet there is evidence that their parents are not knowledgeable in this area or that the informal teaching and learning process between parents and children is ineffective (Chen & Volpe, 2002).

2.6.6 Access to financial institutions

Johnson and Sherraden (2007) found that youth who had access to financial institutions and from higher income families scored significantly higher in financial literacy tests than those with no access to financial institutions or from lower income families. This could be due to their lack of interest as they did not apply what they learned due to lack of financial access. Those who have access to financial institutions and come from higher income families can learn from their parents and actively participate via a savings account, for example, and learn more. It was further found that those who received an allowance, had a bank account or investment when they were children, saved more of their income as adults.

2.6.7 Age

Some studies found that financial literacy improved with age, however Chen and Volpe (2002) argued that one cannot be more financially literate simply because one is older, but rather one has to have had more financial exposure. Individuals learn through experience, but one cannot afford to make numerous mistakes in the meantime and only become more financially literate when one reaches a certain age. It is important, they argued, to possess a higher level of financial literacy than is currently the state, and earlier in one’s life.

A survey conducted by ANZ-Retirement Commission Financial Knowledge in 2006 on New Zealanders found that financial literacy increased with age, income, education and net worth. Although 83% of New Zealanders said they felt confident managing their financial affairs, and over 50% saved regularly, only 8% had financial goals. Some 26% said their greatest difficulty with managing money was that they did not have enough and 19% said that controlling their own spending was their greatest difficulty. The survey results also highlighted some gaps in financial literacy; including 53% who did not understand compound interest and 70% who did not believe that investments held in a portfolio in the stock market would outperform any other form of wealth generation over
the long term. Respondents also lacked understanding of the relationship between risk and return. New Zealanders possessed some financial literacy, but it was limited.

For Widdowson and Hailwood (2007), financial literacy is important at different levels, namely, for the individual, for the financial system and for the wider economy: “The final result is not to create financial experts; it is more important to equip individuals with sufficient knowledge to make sense of financial activities, seek out appropriate information, feel able to ask relevant questions and be able to understand and interpret the information that they subsequently acquire”.

2.6.8 Field of study

There have been a number of studies that have found field of study to be significant in determining financial literacy. Chen and Volpe (1998, 2002) found that business major students tended to be more financially literate than other majors. Hanna, Hill and Perdue (2010) found that school of study is statistically significant in explaining the level of financial literacy. Even though business students only managed to score 47% in the financial literacy survey, they were found to be the most financially literate out of all the schools. This could be attributed to previous exposure in business courses, and due to their interest in financial issues they may investigate some of these personal finance issues on their own. Although this could explain why business students as a group performed better than students studying towards other majors, it did not explain why liberal arts students performed better than education students.

Marcolin and Abraham (2006) compared and analysed financial literacy studies conducted in Australia, America and the UK, all of which showed that individuals with higher education levels or students with business majors as opposed to other majors generally possessed higher levels of financial literacy.

A study conducted on the financial literacy of Australian university students by Beal and Delpachitra (2003) found that their financial literacy skills were low due to lack of financial skills education in high school. It was further found that financial literacy improved with work experience (Chen & Volpe, 2002) and income. Students from the business faculty, even those in their first year of study, scored higher than those from other faculties. This was attributed to their being more interested in and reading more about financial matters, and being more likely to follow financial reports in the media.
2.7 SUMMARY

The literature analysed how financial literacy has been defined and measured by researchers from 1996 to 2010. Although the U.S. government and the Jump$tart Coalition for Personal Financial Literacy now adhere to a common conceptual definition (also incorporated by the current study), many researchers do not. Moreover, there is seemingly no common ground in measuring financial literacy in research studies and education programmes. The question remains as to how financial education programmes know if financial literacy has increased and how successful their programmes have been if they do not incorporate a standard financial literacy measure. The literature currently offers mixed evidence that education provides measurable benefits (Fox, Bartholomae, & Lee 2005; Lusardi 2003; Mandell 2005; Willis 2008). Some research suggests that financial education does not have a significant effect on improving financial knowledge scores of high school students in the USA (Mandell 2005).

Willis (2008) contends that the costs of financial education programmes outweigh potential benefits, in contrast to other studies that support a relationship between financial education, financial literacy and positive financial outcomes (Fox, Bartholomae & Lee 2005; Lusardi 2003). These mixed results indicate that not all financial education programmes are equally effective. If researchers and other stakeholders do not embrace a common definition and measurement it will remain difficult to evaluate and assess financial literacy.

After a review of the literature the current researcher decided to incorporate the Jump$tart Coalition (2007) definition, which includes a knowledge as well as an ability dimension. The main content areas of personal finance that every consumer needs to know were identified from the literature. The research included these content areas, namely, basic concepts, saving and borrowing, insurance (protecting resources), markets and instruments (investing) and financial planning. The Jump$tart Coalition (2008) survey was adapted as the survey questions include the main content areas of financial literacy and it has been examined by professionals and found to be a valid measurement tool.

Financial literacy has become increasingly important for future economic wellbeing of individuals as well as countries (Marcolin & Abraham, 2006). Research conducted on the financial literacy of high school, college and university students as well as adults and parents (Fresler, 2006; Samy et al., 2007 & Varcoe et al., 2005; Borodich, Deplazes, Kardash & Kovzik, 2010; Volpe et al., 2006; Bowen, 2002; Williams, 2008; Marcolin et al., 2006; Chen et al., 1998; Cude et al., 2006; Lyons et al., 2003; Avard, Manton, English & Walker, 2005; Ibrahim, Harun & Isa, 2009; Beal & Delpachitra, 2003; Borodich, Deplazes,
Kardash & Kovzik, 2010) indicates that their financial literacy levels are low. There has been a vast amount of research conducted on financial literacy in various countries, yet that in South Africa is limited. Many South African students’ studies are funded by loans, so it is important that they be aware of the terms and conditions when entering into them as they will have to start repaying them when they finish their studies at the end of the year and start working. They will also be faced with many challenging financial decisions once they enter the job market, bearing in mind that the wrong decisions could have a detrimental effect on their lives.

The focal point of this research is to determine whether field of study, as identified in previous research, has an influence on financial literacy levels. The literature also indicated additional demographic and background characteristics (gender, marital status, age, work experience, race, language, parental education, personal finance course and participation or access to financial institutions) to influence financial literacy. It was thus considered empirical to include all of these demographic and background characteristics.
CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter aims to describe the research methodology used to analyse the sample data. It begins by justifying the research design (paradigm and research method) used, followed by a description of the research instrument, the sample, data collection and data analysis techniques. The measure taken to ensure validity and reliability of the data will then be discussed. Finally, the ethical considerations of the study will be addressed and the perceived limitations listed.

3.2 RESEARCH DESIGN

A research design is a master plan specifying how the chosen methods and procedures for collecting and analysing data will be used to answer the research question. The function is to ensure that the information collected is appropriate and enables the researcher to answer the research question (Zikmund, 2003, p.65). This descriptive comparative study aimed to answer the research questions following a positivist approach to analysing the data. Cross-sectional data was obtained through conducting a survey on a sample of students studying towards a finance-related diploma and a sample studying towards a non-finance-related diploma. The two samples were then compared to identify certain commonalities and differences in terms of their demographic factors and financial literacy levels.

3.2.1 Research paradigm

Research can be classified as either quantitative or qualitative (Leedy & Ormrod, 2005, p.94), the former being a systematic, objective investigation of phenomena and their relationships as characterised by quantification and mathematical model developments. This approach is referred to as the traditional, or positivist approach. The latter meanwhile aims to examine the complexities of a particular phenomenon and involves looking at characteristics or qualities that cannot be easily reduced to numerical values. It is concerned with subjective assessment of attitudes, opinions and behaviour and is not subjected to rigorous quantitative analysis.
Clasen and Jochen (2004) write that comparative studies normally make use of a quantitative research approach, as did the current study. It seeks explanations and predictions that can be generalised to other persons and places, and to establish, confirm or validate relationships and to develop generalisations that contribute to existing theories (Leedy & Ormrod, 2005, p.95). To do this, Leedy and Ormord (2005) suggest that the quantitative research should explain, confirm and validate the research. This study explains whether the field of study influences the financial literacy levels of diploma students at the University. It also confirms and validates whether it agrees with the findings of previous research that indicates finance-related students tend to be more financially literate than non-finance-related students.

It used a large representative sample, with data obtained from the sample using a standardised instrument. It could be presented numerically and was coded, for instance, 1 = males and 2 = females. The research consisted of a large sample (n=163) which was representative of the target population as it contained diploma groups with a finance- as well as a non-finance-related background. The data was collected through structured questionnaires, which mainly consisted of a standardised instrument, namely the Jump$tart coalition (2008) questionnaire.

In quantitative research, data is analysed by making use of statistics to determine its meaning (Leedy & Ormrod, 2005:96). Data was thus analysed through a statistical analysis of numerical data obtained through standardised instruments such as questionnaires from a representative sample of third-year diploma students from the campus. The findings are communicated statistically and numerically in an aggregated format and thus were communicated by discussing and interpreting the data numerically and statistically in an aggregated format (refer to section 3.7 on Data analysis). The characteristics of the study are therefore similar to those of a quantitative approach and are considered appropriate to address the research question. A qualitative approach was not considered appropriate as it would have taken too long to interview all the respondents. Respondents might not have felt comfortable in disclosing sensitive information honestly if there was face-to-face interaction via interviews.

3.3 RESEARCH METHOD

The research method describes the methods used to collect data, analyse it and go about the research in order to answer the research question. According to Zikmund (2003:65) descriptive research describes the current state of affairs and includes data collection methods such as surveys, in which raw (primary) data has to be collected and
transformed into a form that will make it easy to understand and interpret. In line with other comparative studies (Huston, 2010; Redmund, 2010) the current research will make use of a survey method conducted through a structured questionnaire to collect primary data from the sample. This will then be used to compare and describe the differences between financial literacy levels of the two groups of students.

3.3.1 Research instrument

No information regarding the financial literacy levels of the 2011 third-year diploma students is available, so primary data was collected by means of a survey conducted through a structured questionnaire. Surveys are a method of descriptive research, based on the previous understanding of the nature of the research problem and describes characteristics of a population or phenomenon (Zikmund, 2003:55). Questionnaires as survey instruments specifically in relation to this study had the following advantages:

- there was generalisation to a large population (De Vos et al., 2008, p.167) namely, all the diplomas presented on the campus in 2011;
- anonymity was ensured (Kumar, 2005, p.114; Leedy & Ormond, 2005, p.185);
- questionnaires were cheap (De Vos et al., 2008, p.167; Kumar, 2005, p.114; Leedy & Ormond, 2005, p.185) as the researcher had financial constraints and did not have to post them;
- questionnaires were easy to complete and did not require too much time from respondents (De Vos et al., 2008, p.167; Maree, 2007, p.157) as the researcher had time constraints and also did not have to explain to respondents how to complete them.

Questionnaires also have a number of disadvantages that should be taken into consideration. A list of generic disadvantages of questionnaires as a survey instrument is set out in Table 3.1 below:

Table 3.1: Disadvantages of questionnaires as survey instruments

<table>
<thead>
<tr>
<th>Disadvantages of questionnaires as survey instruments</th>
<th>Authors</th>
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<tbody>
<tr>
<td>B Questions could be interpreted incorrectly</td>
<td>Kumar (2005, p.114), De Vos et al. (2008, p.167)</td>
</tr>
</tbody>
</table>
D  Reading and writing skills of respondents might lead to misinterpretation of questions


E  A questionnaire could present limited information about a phenomenon

Leedy & Ormond (2005, p.185)

F  No opportunity for spontaneous responses

Kumar (2005, p.114)

Each of these disadvantages will be addressed in the following manner for the purposes of this study:

a. Normally questionnaires are mailed or e-mailed to respondents, leading to a high non-response rate. The questionnaires for this study were completed during the respondents' lecture time, which ensured a high response rate.

b. The risk of incorrect interpretation of questions was addressed by having the questionnaire examined by a professional and pre-testing it on a group of respondents. Adjustments were made according to the feedback obtained during the pre-testing.

c. Due to logistical constraints, the sample was chosen judgmentally to include a finance- as well as a non-finance-related group. This could potentially lead to the respondents not being representative of the sample. (Refer to section 3.5.1 for a full explanation on the sampling methods followed in this study)

d. Third year diploma students should possess adequate reading skills to answer the questionnaire so not much writing was required in the questionnaire. Furthermore, students who do not have good numeracy skills were not disadvantaged as no calculator was required to answer any of the questions.

e. All the required information was identified from the literature and included in the questionnaire, as well as a standardised Jump$tart questionnaire. This ensured the required information was collected.

f. Although there was no opportunity for spontaneous responses most questions were straightforward and the answer was either right or wrong with all possible solutions presented.

These advantages and disadvantages of questionnaires were considered before the questionnaire construction took place.
3.4 QUESTIONNAIRE CONSTRUCTION

The task of writing a list of questions and designing the exact format of the printed or written questionnaire is an essential aspect of the development of a survey research design (Zikmund, 2003, p.66), therefore care was taken in the inclusion of the questions in the questionnaire to ensure they answered the research questions and were as far as possible valid and reliable (refer to sections 3.8.1 and 3.8.2).

The structured questionnaire (Appendix 1) consisted of 36 questions, divided into two sections. Section A consisted of 17 background and demographic questions, section B of 19 financial literacy multiple choice questions addressing the five content areas of financial literacy, namely, basic concepts; saving and borrowing; insurance; markets and instruments; and financial planning (Huston, 2010; Redmund, 2010). The questionnaire investigated the financial literacy of both groups of students who were about to embark on their careers and to investigate their needs in terms of a personal finance course. Respondents were assured that their responses were anonymous and that all the information supplied by them would be treated as confidential.

A questionnaire can make use of either open-ended, unstructured questions, or close-ended, structured questions, or a combination of both. Open-ended questions allow respondents to answer in their own words (Zikmund, 2003, p.331), particularly when the researcher has no clear hypotheses regarding the answers (Zikmund, 2003, p.461), whereas close-ended questions provide respondents with specific limited alternative responses and they are asked to choose the one closest to their viewpoint (Zikmund, 2003, p.332). Close-ended questions simplify the comparability of data obtained from the completed questionnaires. The advantages and disadvantages of using close-ended questions are outlined in Tables 3.4 and 3.5 respectively.

**Table 3.2: Advantages of close-ended questions**

<table>
<thead>
<tr>
<th>Advantages of close-ended questions</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close-ended questions are quick and easy to answer</td>
<td>Kumar (2005, p.119), Maree (2007, p.161), Zikmund (2003, p.333)</td>
</tr>
<tr>
<td>Sensitive questions are easier to answer</td>
<td>Maree (2007, p.161), Zikmund (2003, p.333)</td>
</tr>
<tr>
<td>Respondents understand and answer questions in the same framework with</td>
<td>De Vos et al. (2008, p.175)</td>
</tr>
</tbody>
</table>
The results of the investigation are readily available

De Vos et al. (2008, p.175)

Close-ended questions were suitable as the students had limited time available to complete the questionnaire (quick and easy to answer). It also allowed for easy analysis and comparison of the groups, and for irrelevant answers to be omitted. Questions on such topics as the parents’ highest level of schooling, when answered using close-ended questions, would allow respondents to answer in the same framework and allow for fewer irrelevant answers. They would ensure easier categorisation of answers and assist in the analysis of data.

Table 3.3: Disadvantages of close-ended questions

<table>
<thead>
<tr>
<th>Disadvantages of close-ended questions</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Could suggest ideas or concepts that the respondent would otherwise not have considered</td>
<td>Kumar (2005, p.119), Maree (2007, p.161), De Vos et al. (2008, p.175), Zikmund (2003, p.334)</td>
</tr>
<tr>
<td>- Answers are simple with no detail and lack depth and variety</td>
<td>Kumar (2005, p.119), Maree (2007, p.161)</td>
</tr>
<tr>
<td>- Respondents with no opinion or knowledge or without thinking can answer a close-ended question</td>
<td>Kumar (2005, p.119), Maree (2007, p.161)</td>
</tr>
</tbody>
</table>

The disadvantages of close-ended questions did not greatly affect this research as questions were straightforward and either right or wrong. Close-ended questions were therefore appropriate and if the respondents’ desired answer was not available it would be because it was incorrect. The research did not require much detail, depth or variety, but that required could have been obtained via the close-ended questions. That respondents with no opinion or knowledge could answer a close-ended question was not regarded as a disadvantage for this research as those respondents would then answer incorrectly and indicate low levels of financial literacy.
All of the questions in section A of the research questionnaire consisted of close-ended nominal and ordinal scale questions, and section B of the research questionnaire only consisted of close-ended multiple choice questions.

**Demographic and background characteristics**

In section A of the questionnaire (Appendix 1) respondents were asked questions relating to their gender, age category, language, race, marital status, number of children, type of accommodation, work experience, highest level of schooling of father, highest level of schooling of mother, field of study, method of financing studies, bank account, credit card, personal finance course taken, extent to which they consider themselves to be financially literate and how important they believed it was for a diploma graduate to be financially literate once they had completed their studies.

These questions were included to obtain a better understanding of the sample. Specific factors such as gender, age, race, income, parental education, work experience and finance courses were also included to determine their impact on financial literacy levels (Beal & Delpachitra, 2003; Chen & Volpe, 1998; Hanna et al., 2010; Johnson & Sherraden, 2007; Marcolin & Abraham, 2006; Monticone, 2010; Murphy, 2005).

To answer the questions in section A, two scales of measurement, namely, nominal and ordinal scales were used.

- **Nominal scales**

  A nominal scale is the simplest type of scale and consists of two or more categories. Nominal scalesassign numbers or letters to objects to serve as labels for identification or classification (Zikmund, 2003:296). An example of a nominal scale is the coding of males as 1 and females as 2. The nominal scales were used to identify and classify the respondents of the questionnaire (Annexure 3.1, questions 1 – 15).

- **Ordinal scales**

  Ordinal scales, such as Likert scales, are a useful tool to measure attitudes designed to allow respondents to indicate how strongly they agree or disagree with carefully constructed statements that range from very positive to very negative toward an attitudinal object (Zikmund, 2003:312). Ordinal scales were used to assess the respondents’ attitude, opinion, and perception towards two statements in the questionnaire (Annexure 3.1, questions 16 – 17).

Likert scales also have certain advantages and disadvantages that need to be considered before including it in the questionnaire (Cooper & Schindler, 2008, p.308-312). The advantages of Likert scales are that they are relatively easy to use; quick to construct and
collect data; a reliable method of collecting data; and provide a greater volume of data than other methods. Disadvantages of Likert scales are that honesty of respondents cannot be guaranteed; they are time-consuming in that respondents have to read through each statement; and the analysis of data can take a long time.

The Likert scales used in this research study consisted of a five-point categorical scale, though only two of the questions in the demographic and background section made use of them. The first question asked respondents to indicate to what extent they considered themselves to be financially literate. The five-point categorical Likert scale was constructed as follows: To no extent; To small extent; To a moderate extent; To a large extent; and Completely financially literate.

The other question that made use of a Likert scale asked respondents to indicate how important they believe it was for a diploma graduate to be financially literate once they had completed their studies. The five-point categorical Likert scale was constructed as follows: Totally unimportant; Unimportant; Marginally important; Important; and Very important.

**Financial literacy measurement**

The purpose of section B of the questionnaire was to access financial literacy levels. These questions (Appendix 1) consisted mainly of questions adapted to the South African context from the Jump$tart Coalition (2008) questionnaire (Appendix 2). As discussed in the literature review section of this study, it was decided to use the Jump$tart Coalition (2008) questionnaire as it had been examined by professionals in finance and found to be valid and reliable in measuring financial literacy. Furthermore, according to Redmund (2010), although a few researchers have used custom-designed research instruments (Chen & Volpe, 2002; Lusardi & Mitchell, 2007), most researchers rely upon one of a handful of national benchmark surveys, including Jump$tart Coalition for Personal Financial Literacy (beginning in 1997). The Jump$tart Coalition (2008) questionnaire also includes the main financial literacy content areas as identified by the literature, namely, basic concepts, saving and borrowing, insurance, markets and instruments and financial planning that this study explores.

The first section of the Jump$tart coalition (2008) questionnaire asked respondents questions on financial literacy (questions 1-31), while the second section asked respondents about their demographic and background characteristics (questions 32-56). The questionnaire began by asking respondents about their demographic and background characteristics in section A (questions 1-17). It should be noted that this questionnaire did not use the same questions as the Jump$tart coalition (2008)
questionnaire for the demographic and background section, but rather asked questions about demographic and background characteristics as identified by literature as influencing financial literacy levels. Secondly, the financial literacy questions (questions 1-19) were asked in section B. The reasoning behind starting with the demographic rather than literacy questions was that those on demographic and background characteristics were easier to answer and would relax students before starting with the actual financial literacy quiz.

Students had to complete the questionnaires during lecture time, with a maximum of 30 minutes being allowed to complete them. The standardised Jump$start questionnaire had too many financial literacy questions (31) in the Jump$start Coalition (2008) questionnaire and would take too much time to complete. It was therefore decided to remove questions that were not applicable to the South African context. Some questions from the Jump$start questionnaire that tested the same concept were also removed to ensure that only one question per concept (Appendix 1 and 2) was included. The survey questions will be discussed next.

The literature identified five content areas that should be included when measuring financial literacy, namely basic concepts, saving and borrowing, insurance, markets and instruments and financial planning. Although the Jump$start Coalition (2008) questionnaire covered all the dimensions, some did not have enough questions so additional ones were included from other standardised questionnaires. Kim and Mueller (1978, p.29, cited in Huston, 2010) stated that in order for a content area to be tested adequately there should be three to five instrument items under each content area included in a questionnaire. Questions 4, 5, 7, 8 11, 14, 15, 17 and 18 were used directly from the Jump$start coalition (2008) questionnaire’s questions 8, 28, 20, 26, 23, 1, 17, 29, 16. Question 1 was taken from question 5 of the South African SME Toolkit's spending and credit section of the financial literacy quiz to include under the saving and borrowings content area, as many students have study loans and would be expected to know the consequences of a co-signed loan. Questions 2 and 10 were adapted from the survey designed by the World Bank and implemented in Russia in 2008 in preparation for the financial literacy programme (Klapper, Lusardi & Panos, 2011), in order to test inflation and include under the markets and instruments content area and to test respondents’ understanding of compound interest under the saving and borrowings content area.

Questions 3 and 12 were taken from questions 4 and 3, of the “Can you pass a high school financial literacy test?” in which students across America took part in the National Financial literacy challenge in March 2011. It was part of the Treasury Department's goal to ingrain basic financial savvy into the minds of youngsters (Reuters Wealth, 2011).
These questions were included in the current survey to test whether respondents knew
the relationship between risk and insurance premiums and were included under the
insurance section, and whether they could make everyday comparisons (lowest unit cost)
when shopping. It was included under the basic concepts section. Questions 6, 9, 13 and
19 were taken from of the Chen and Volpe (1998) survey of personal financial literacy.
The researcher decided to include question 16 to test whether students grasped the
concept of exchange rates. In addition, the names of people and currencies were adapted
to a South African context, with, for example the sign for $ (dollars) being changed to R
(rand). Appendices 1 and 2 present an analysis of all the changes that were made to the
questionnaire as discussed above, and a comparison with the Jump$tart Coalition (2008)
questionnaire.

There were three to five multiple choice questions for each one of the five content areas
that were randomly shuffled and only after respondents had completed the survey were
specific questions applicable to each content area grouped together to analyse how
students faired in each of the individual content areas. Students would not require a
calculator to answer any of the questions as they were able to answer them by logical
reasoning. The questionnaire was pre-tested by a pilot group as well as examined by an
academic authority on questionnaires.

3.4.1 Pre-testing the questionnaire

To ensure the validity of the adapted questionnaire a pre-test was administered to a pilot
group of first year Accounting students to test the clarity and completion time of the
questionnaire. The aim of the pilot study was not to test the students’ financial literacy
levels but rather to determine the completion time of the questionnaire and whether the
questionnaire was clear and understandable. It was assumed that if first year students
experienced no difficulties in completing it then neither would the research sample of
third-year students experience any problems.

The overall feedback received from the pilot sample before the questionnaire was
administered to the study sample was that the questionnaire was very clear and
understandable. Only two minor changes were made, the first being to extend the original
completion time from 20 to 30 minutes. Based on previous studies, it was expected that
this questionnaire would take approximately 20 minutes to complete. Some students
however took up to 30 minutes to complete the current study's questionnaire as there
were some additional demographic and background questions added. It was therefore
decided to change the final questionnaire to state that the questionnaire completion time
would take between 20 and 30 minutes. The second adjustment prompted by the pilot sample was to add the word ‘money’ and change one of the options in question 4 that stated “…would make more…” to “…would make more money…”.

3.5 RESEARCH SAMPLE

This section will discuss the sampling strategy, target population, sample selection and expected sample of the research.

3.5.1 Sampling strategy

Sampling refers to the process of using part of a population to make conclusions about the whole population (Zikmund, 2003:369). Two sampling approaches are probability sampling, in which each member of the population is selected randomly (Leedy et al., 2005, p.205), and non-probability sampling, based on personal judgment or convenience (Zikmund, 2003, pp.379-380).

The total population of this study consisted of 20 diploma groups presented on the Bunting Road campus of the University of Johannesburg. Only three of these diploma groups were selected for the sample by making use of a non-probability sampling approach. The finance group was selected based on convenience of data collection. For the non-finance group some diploma groups were automatically excluded from selection as a result of insufficient number of students being enrolled for the diploma and/or students being away on experiential learning.

3.5.2 Target population

The population of this study consisted of all the diplomas presented in 2011 on the campus.

Table 3.4: Finance and non-finance-related diplomas on APB

<table>
<thead>
<tr>
<th>Finance related diplomas</th>
<th>Non-finance-related diplomas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountancy</td>
<td>Hospitality Management</td>
</tr>
<tr>
<td>Banking</td>
<td>Tourism Management</td>
</tr>
<tr>
<td>Credit Management</td>
<td>Transportation Management</td>
</tr>
<tr>
<td>Financial information systems</td>
<td>Sports Management</td>
</tr>
<tr>
<td>Logistics</td>
<td>Architecture</td>
</tr>
</tbody>
</table>
3.5.3 Sample selection

The scope of the study consisted of and was limited to third-year diploma students studying at the Bunting Road campus of the University of Johannesburg. The rationale for only collecting data from third-year students was that they should be more financially literate than first and second years, which would imply that if they were found to be financially illiterate it could be assumed that first and second year students would also be financially illiterate. A further reason for choosing to collect data from only third-year students is that they would be entering the job market at the end of that year of study so it was crucial for them to be financially literate as they would be faced with various important financial decisions. The objective of this study is also not to compare if students become more financially literate as there is a progression in academic years, but rather to evaluate students at the same academic level in different academic disciplines and to see whether certain demographic and background characteristics influence their level of financial literacy.

There were however too many diplomas to include the full population. The aim was to determine if field of study, more specifically finance or non-finance, influences financial literacy levels. It was therefore decided to select a diploma group with a finance background and two diploma groups with non-finance backgrounds for the research sample. The ratio was selected because the number of students enrolled for these diplomas were much fewer than the finance groups. Some diplomas were automatically excluded due to constraints in the number of students enrolled for those diplomas and the difficulty in collecting data from those who were away on experimental learning. The sample was judgementally selected based on the number of students enrolled for the diploma as well as the convenience of collecting data. Given the above, a probability sampling approach was not considered. Based on the fact that the financial literacy levels of finance students was being compared to non-finance students and finance as well as

<table>
<thead>
<tr>
<th>Marketing Management</th>
<th>Clothing Management</th>
</tr>
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<tbody>
<tr>
<td>Retail Business Management</td>
<td>Fashion design</td>
</tr>
<tr>
<td>Fine Art</td>
<td>Three dimensional design</td>
</tr>
<tr>
<td>Interior design</td>
<td>Jewellery design</td>
</tr>
<tr>
<td>Multimedia</td>
<td>Graphic design</td>
</tr>
</tbody>
</table>

47
non-finance groups had been selected for inclusion in the sample, the sample was considered to be representative of the population. The three diploma groups that formed the target population of this study were:

- Diploma in Accounting (Finance group);
- Diploma in Architecture (Non-finance group) and
- Diploma in Sports Management (Non-finance group).

### 3.5.4 Expected sample

The lecturers confirmed that approximately 150 students were attending class for the diploma in Accounting, 45 students for the diploma in Architecture and 25 students for the diploma in Sports Management. Although more than 150 students were registered for the diploma in Accounting and there were more than one class/group, only one of the diploma in Accounting classes/groups was used for the sample as they had sufficient numbers in that class. There was only one class for the diploma in Architecture and diploma in Sports Management respectively, therefore it was expected that the sample size would be approximately 150 students with a finance background and 70 with a non-finance background.

It is important to ensure that the data collected from the sample is relevant to answer the research question (Anon, n.d.). A structured questionnaire was used to collect data to determine the financial literacy of students in different fields of studies and the demographic and background characteristics that influence financial literacy.

### 3.6 DATA COLLECTION

Primary data in the form of a paper-based questionnaire adapted from the Jump$tart coalition (2008) study was collected from the sample respondents. Data should be relevant to the research problem, easily available within the required time as well as valid and reliable (Zikmund, 2003). The questionnaires were therefore distributed to the respondents specified in the target population at a specific time, and a cross-sectional survey employed.

Lecturers from the three various diploma groups were contacted via email and/or phone to discuss the study and to seek their participation in it. Each lecturer was presented with an ethics clearance letter and agreed to set aside either the first or last 20-30 minutes of their class time to allow students to complete the survey. Each lecturer’s timetable was
consulted and the surveys were organised to take place during one of the lecturer’s allocated timetable slots and in the venue. The number of students in each class was confirmed in order to provide each lecturer with sufficient number of questionnaires. It was important for lecturers as well as students to be aware of what was required of them. Each questionnaire thus had a cover letter explaining the purpose and significance of the study, indicating the completion time of the study, as well as a section assuring students that information supplied by them would be treated as confidential, their responses would remain anonymous and their participation was entirely voluntary. It was thought best to administer a paper-based questionnaire in a controlled environment as opposed to an online survey to increase reliability as students would not be able to discuss responses. Secondly, it was expected that the response rate would be significantly higher if students completed the questionnaire during class time as opposed to online in their own free time. The survey was scheduled to take place in September 2011.

3.7 DATA ANALYSIS

This section will consider the manner in which the data collected from respondents via questionnaires will be analysed, using a similar method to that of Chen and Volpe (1998) and Beal and Delpachitra (2003). The responses will be used to calculate the percentage of correct responses for each question, content area and the entire survey. This will enable the study to partly answer the overall research question as well as answer sub-questions 1, 2 and 4. To answer research question 3 as well as the other part of the overall research question, the data will be divided into quartiles, then used to test whether students who obtain higher than the upper quartile differ from those who obtain less than the lower quartile in terms of demographic and background characteristics.

The study will mainly use descriptive analysis to describe the demographic and background characteristics of the sample and comparative analysis to compare differences or similarities between the finance- and non-finance-related groups. Raw data will be transformed into a form that is easy to understand and interpret by summarising the data of the two groups and calculating averages and frequency distributions between them. This should provide a good indication of the sample and variation. Inferential statistics will mainly be used to answer the research questions. Techniques that will be utilised in the analysis include tabulations, correlations, chi square tests and t-tests. Statistical graphs (bar charts) will also be incorporated for more graphic presentation.
3.7.1 Analysis by demographic and background questions

Descriptive statistics will be used to describe the demographic and background characteristics of the sample and comparative statistics will be used to compare the demographic and background characteristics those of the two groups, and the Pearson Chi-square used to test for any statistically significant differences between them.

3.7.2 Analysis by research questions

The SPSS commercial statistical analysis software program will be used to analyse the data and present it in summarised graphic and tabular formats for ease of interpretation, after which it will be discussed.

Sub-question 1:

How financially literate are third-year University of Johannesburg diploma students of 2011?

This sub-question will be analysed by creating an average financial literacy score for the entire survey, using the answers to all 19 questions in section B of all respondents.

Sub-question 2:

In which areas of financial literacy did students demonstrate better or worse results?

This sub-question will be tested by finding in which of the five content areas (savings and borrowing, markets and instruments, basic concepts, financial planning and insurance) students answer the most and least questions correctly.

Sub-question 3:

Which demographic and background characteristics influence financial literacy?

This sub-question will be answered by using descriptive statistics to describe the total sample. Only where there is adequate representation and enough variation within the total sample to actually determine a significant difference will a further analysis be performed, to establish whether any of these demographic factors have a significant impact on the financial literacy levels of the students. In order to establish whether the financial literacy levels of students are impacted by demographic or background factors the literacy scores of students in the upper quartile and lower quartile will be calculated. Two extreme groups, namely those who obtain a higher financial literacy score than the upper quartile and those who obtain a lower financial literacy score than the lower quartile, will be identified and compared for any statistical variation in their demographic and background
characteristics. Fischer’s exact test will be used to test whether significant differences exist between the students who performed better than the upper quartile compared to those who performed worse than the lower quartile in terms of demographic and background characteristics.

**Sub-question 4:**

*How do students’ perceptions of financial literacy compare to their actual financial literacy levels?*

The students’ responses and their financial literacy perceptions will be compared to the actual financial literacy score achieved. The Pearson chi-square test will be used to compare the perceptions of the two groups. This question was included as past research has found that students think they are financially literate and do not need financial education or help, but then the financial literacy scores they achieve are lower than their perceptions of their financial literacy levels (Policy brief, July 2006).

**Overall question:**

*Do students that study towards a diploma in a finance-related field have higher financial literacy levels than those students studying towards a diploma in a non-finance-related field of study?*

The overall research question will be answered by comparing the average financial literacy score of the two groups. t-tests will be used to compare the mean differences between the respective groups and Levene’s test for equality of variances will also be used to test the t-test assumption that the variances between the two samples are equal. As well as comparing the average financial literacy score of each group for the entire survey, the percentage of correct responses of the finance-related group in each of the five content areas will be compared to the other group. Chi-square tests will be used to test for a statistical significant difference between the results of the finance and non-finance group at a 5% confidence level.

Descriptive statistics will be used to describe differences between the groups and the Pearson chi-square test to determine whether there are significant differences in terms of the demographic and background characteristics. Where there is adequate representation and enough variation, and if Fischer’s exact test is less than 0.05, indicating significant differences, (refer to sub-question 3), then those that indicated significant differences will be analysed to establish whether this could have an impact on the different literacy levels of the groups.
3.8 VALIDITY AND RELIABILITY

The importance of ensuring the validity and reliability of data had an influence on the entire research design.

3.8.1 Validity

The validity of an instrument lies in its ability to measure what it is intended to measure (Leedy et al., 2005:92). According to Zikmund (2003:302) there are three basic approaches to evaluating validity:

1. Face or content validity – professional agreement that a scale logically appears to accurately measure what it is intended to measure

2. Criterion validity – correlation of the results of the current instrument with other measures of the same construct

3. Construct validity – correspondence of the instrument to different measuring indicators.

In order to increase the validity of the research instrument the clarity and readability of the instrument was tested and refined further by undertaking a pilot study. The respondents were asked about wording and clarity of instructions and the questionnaire, the length and completion time of the survey, and if any questions were confusing. The feedback received from the pilot study was used to revise the instrument once more before the questionnaire was issued to the actual sample respondents (Appendix 1). The instrument was adapted from the Jump$tart Coalition (2008) questionnaire that was assessed by a panel of financial and research experts, who found to be valid. A research instrument that is so examined increases the likelihood it being valid (Leedy & Ormrod, 2005:93).

Various studies reviewed by Huston (2010) and Redmund (2010) that used the Jump$tart Coalition (2008) questionnaire as an instrument found similar results of low financial literacy levels. The questionnaire included the relevant financial literacy content areas as identified by research as well as three to five instrument items under each content area for adequate representation of each (Kim & Mueller, 1978, p.29, cited in Huston, 2010). It was also considered necessary to include demographic and background characteristics as identified by research to influence financial literacy levels and test if they influenced financial literacy scores achieved by the two groups of students.

The study was enhanced by making use of a quantitative approach that allowed for greater objectivity and accuracy of results and by using an existing method of data
analysis, similar to that of Chen et al., (1998) and Beal et al., (2003) to ensure validity and reliability (O’Neill, 2006).

3.8.2 Reliability

Reliability is the extent to which an instrument is free from error and consistent in its measurement over time and across situations (Leedy et al., 2005:93; Zikmund, 2003:300). If individuals were to take the survey numerous times their score should thus remain fairly consistent. An instrument can be reliable without being valid but it cannot be valid unless it is reliable. Before the questionnaire was administered to the selected sample of students it was first administered to a pilot group of students to test its clarity. Although the research sample consisted of third-year students, the pilot study was conducted on first year students. The aim of the pilot study was not to test their financial literacy but rather to determine the completion timeframe of the questionnaire and whether it was clear and comprehensible. It was assumed that if first year students experienced no difficulties in completing it, then neither should third-year students experience any problems.

The reliability of the survey was enhanced by only administering paper-based questionnaires that had to be completed and handed back during lecture time, as opposed to online surveys. Students were therefore not able to discuss responses with each other or anyone else, or attempt to find answers to questions online. Although it was not possible to administer the questionnaires to the three groups on the same day and at the same time it was unlikely that they contacted each other as they were all in different faculties. Furthermore, the groups did not know which other groups were taking part in the study and all questionnaires were handed back after completion.

3.9 ETHICAL CONSIDERATIONS

The research procedure began by obtaining approval for the research study from the Higher Degrees Faculty Committee of the University, followed by ethical clearance for the survey instrument to be issued to students from the Ethics Committee. The questionnaire construction ensured respondents’ anonymity. They were also assured that the information supplied by them would be confidential and that the results and findings of the study would only be disclosed in a summarised format.
3.10 LIMITATIONS

Due to the specific focus and nature of the research questions, certain limitations are part of this research study. The scope was limited to one finance-related diploma and two non-finance-related diplomas from the campus, which was chosen judgmentally. Generalisation to other universities and campuses can therefore not be made and this could potentially lead to the sample not being representative of the wider population.

Although not all the Jump$tart coalition (2008) questions were included in this research questionnaire, all of the content areas and the required finance concepts were however tested. Due to the lack of a standardised financial literacy questionnaire, comparison with other studies that did not incorporate the Jump$tart questionnaire was problematic. The majority of previous research does not provide standard financial literacy measurement criteria and it is unclear how much respondents should score in order to be classified as financially literate. Furthermore, the honesty of responses cannot be guaranteed.

3.11 SUMMARY

This chapter has discussed the research methodology employed to answer the research questions. The study made use of a multiple choice questionnaire as research instrument to collect the data. The sample consisted of one finance-related diploma (Accounting) and two non-finance diplomas (Architecture, and Sports Management) at the University. The methods of data analysis were also discussed and the results will be presented in Chapter 4.
CHAPTER 4
RESULTS AND FINDINGS

4.1 INTRODUCTION

The main aim of the research study is to determine whether the field of study (finance or non-finance) has an influence on financial literacy levels of final year diploma students. Chapter 3 discussed the research method adopted in this study. This chapter will analyse the data collected and report the findings in line with the research questions. It will firstly describe the sample and how data was collected. Secondly, the results and findings will be presented by examining and interpreting the data collected from the questionnaires structured in such a way as to answer the research questions. Thirdly, the limitations of the results and findings will be presented and the chapter will conclude with a summary of the results and findings.

4.2 DESCRIPTION OF THE SAMPLE

Respondents to this study are third-year diploma students from the University of Johannesburg, Bunting Road campus, classified as either studying towards a finance- or a non-finance-related diploma. The scope of the study was limited to include one finance-related diploma (Accounting) and two non-finance-related diplomas (Architecture, and Sports Management). As discussed in Chapter 3, both the finance and non-finance sample were judgementally selected based on the convenience of collecting the data.

4.3 DATA COLLECTION

To increase the reliability of the responses of the survey, the paper-based questionnaires were distributed and collected from respondents during a lecture. Respondents were allowed 30 minutes to complete it and were not allowed to discuss responses with one another. The total sample consisted of 163 students, of whom 117 were finance and 46 non-finance. Although all 163 students invited to participate completed the questionnaire, some did not answer all the questions. This may have been because, in line with the Jump$tart questionnaire from which it was adapted, it did not provide students with an I do not know option.

As all students completed the questionnaire in the allocated 30 minutes it was assumed that instead of guessing they did not provide an answer to the questions they did not
know. In line with this assumption these omitted answers in section A (demographic and background questions) were excluded from the reported data, resulting in the sample size (n) for the purpose of analysis not always being equal to 163 as would be expected. In section B omitted answers were treated as incorrect in terms of the data analysis.

4.4 ANALYSIS OF DATA

This section will provide an analysis and discussion of the data collected with the overall aim of establishing whether the field of study influences financial literacy levels. In order to achieve this aim, data obtained from the questionnaires will firstly be analysed and findings presented to answer the following sub-questions:

1. How financially literate are the 2011 third-year diploma students studying at the University of Johannesburg?
2. In which content areas of financial literacy did students demonstrate better or worse achievements?
3. Which demographic and background characteristics influence financial literacy?
4. How do students’ perceptions of financial literacy compare to their actual financial literacy levels?

4.4.1 Overall financial literacy levels of final year diploma students

This section will discuss and present the findings of sub-questions 1 and 2.

**Sub-Question 1: How financially literate are the 2011 third-year diploma students studying at the University of Johannesburg?**

This question was analysed by creating an average financial literacy score for each respondent for the entire survey. The sum of all respondent scores for the entire survey (19 questions covering 5 content areas) was divided by the total number of respondents (n=163) to get the average financial literacy score. The results are presented in the table below.

<table>
<thead>
<tr>
<th>N</th>
<th>Valid</th>
<th>163</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>53.4065%</td>
</tr>
</tbody>
</table>

**Source:** SPSS output
The results indicate that the average financial literacy score achieved by the respondents is 53.4065%. One of the students, representing 0.6% of the total sample, only achieved 5.26% for the financial literacy survey and 1.8% (n=3) achieved a low 15.79%. More than 37% obtained less than 48% and 66.9% obtained less than 58%, these being less than 60% which is considered by the Jump$tart research as the percentage required to be classified as financially literate. 33.1% of the students managed to obtain more than 60%, with 11% of the sample managing to score more than 73% for the survey.

**Question Two: In which areas of financial literacy did students demonstrate better or worse achievements?**

This was tested by examining in which of the following five content areas students achieved the most or least questions correct.

- Savings and borrowing
- Markets and instruments
- Basic concepts
- Financial planning
- Insurance
Savings and borrowing:

This section of the questionnaire tested students’ literacy in terms of savings and borrowings and consisted of five questions. The results are presented in Figure 4.2 below.

Figure 4.2: Percentage savings and borrowing questions correct by total sample

Source: SPSS output

The majority of the total sample, 32.5% (n=53), only answered two out of the five savings- and borrowings-related questions correctly. There were even 7.4% (n=12) who answered all five questions incorrectly and only 1.2% (n=2) correctly. The percentage of the sample with one out of five questions correct was 21.5% (n=35), three out of five 26.4% (n=43) and four out of five 11% (n=18).

Markets and instruments:

There were three questions that tested the students’ literacy levels in terms of markets and instruments. The results are presented in Figure 4.3.
The majority of the total sample, 42.9% (n=70), answered two out of the three markets and instruments questions correctly, followed closely by 39.3% (n=64) who only managed to answer one out of the three correctly. The other percentages were 3.7% (n=6) who did not manage to get any questions right and 14.1% (n=23) who got all three questions right.

**Basic concepts:**

There were four questions that tested the students’ literacy levels in terms of basic concepts. The results are presented in Figure 4.4 below.

**Figure 4.3:** Percentage markets and instrument questions correct by total sample  
**Source:** SPSS output

**Figure 4.4:** Percentage basic concepts questions correct by total sample  
**Source:** SPSS output
The majority of the total sample, 40.5% (n=66) had three out of the four basic concept questions correct. This was also the section in which the lowest percentage of students got all questions incorrect with only 1.8% (n=3), as well as the second highest section with 18.4% (n=30), just trailing behind the insurance section with 20.9% (n=34), where students got all the questions correct. The other percentages were made up of 29.4% (n=48) for two out of four correct answers and 9.8% (n=16) for one out of four correct answers.

Financial planning:

There were four questions that tested the students’ literacy levels in terms of financial planning. The results are presented in Figure 4.5 below.

**Figure 4.5:** Percentage financial planning questions correct by total sample

*Source:* SPSS output

The majority of the total sample, 39.3% (n=64) had two out of the four financial planning questions correct. Almost the same percentage got all four questions correct, 4.9% (n=9) compared to 4.3% (n=7) who got all questions incorrect. Three out of four questions were correctly answered by 23.3% (n=38), and one out of four questions were correctly answered by 28.2% (n=46).
Insurance:

There were three questions in the questionnaire that tested the students’ literacy levels in terms of insurance. The results are presented in Figure 4.6 below.

![Pie chart showing percentage of insurance questions correct by total sample.]

**Figure 4.6:** Percentage insurance questions correct by total sample

**Source:** SPSS output

The majority of the total sample, 37.4% (n=61), had two out of the three insurance questions correct. Surprisingly, this section had the highest percentage of no correct answers, 8% (n=13), as well as the highest percentage of all answers correct, 20.9% (n=34). The remaining 37.4% (n=61) answered two out of the three questions correctly.

### 4.4.2 Impact of demographic and background characteristics on the financial literacy levels of final year diploma students

A further objective of this study is to establish the impact of demographic and background characteristics on the financial literacy levels of final year diploma students. The following factors known to influence financial literacy levels were identified from literature and were specifically included in the questionnaire:

- Gender
- Age
- Language
- Race
- Marital status
- Children
- Accommodation
- Work experience
- Parental education
- Funding of studies
- Own a bank account and/or credit card
- Personal finance course

For each of these demographic and background factors, descriptive statistics will firstly be used to describe differences between the two groups of students. The Pearson chi-square test will be used to test whether there was a significant difference (indicated by a score of less than 0.05). Although comprehensive statistical analysis using SPSS was used, only the chi-square results will be presented in the report. Other statistical results could be made available on request.

Secondly, descriptive statistics will be used to describe the total sample and only where there is adequate representation and enough variation within the total sample to actually determine a significant difference will further analysis be performed to establish whether any of these demographic factors have a significant impact on the financial literacy levels of the students. For example, age cannot be used for further analysis as most of the respondents fell in the 21-23 year age category and there is not adequate representation of other age categories or enough variation within the total sample to determine a significant difference.

In order to establish whether the financial literacy levels of students were impacted by demographic or background factors the literacy scores of those in the upper quartile and lower quartile were calculated. Two extreme groups, namely students who obtained a higher financial literacy score than the upper quartile and students who obtained a lower financial literacy score than the lower quartile were identified and compared for any statistical variation in their demographic and background characteristics. The groups were relatively small, consisting of 17.2% (n=28) students above the top quartile and 23.9% (n=39) students below the bottom quartile. The results are shown in Table 4.2.
Table 4.2: Financial literacy scores of extreme groups

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scores below lower quartile</td>
<td>39</td>
<td>23.9</td>
<td>58.2</td>
<td>58.2</td>
</tr>
<tr>
<td>Scores above upper quartile</td>
<td>28</td>
<td>17.2</td>
<td>41.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>41.1</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System</td>
<td>96</td>
<td>58.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS output

Due to the small sample of the extreme groups, Fischer’s exact test was used as opposed to the Pearson chi-square test to determine whether significant differences exist between these two extreme groups’ demographic and background characteristics. If the Fischer’s exact test is less than 0.05 then significant differences do exist between the two extreme groups, whilst more than 0.05 shows they do not. Only the statistical results that demonstrated a significant difference were reported. The statistical results with no statistical difference found will be presented on request if so required.

Thirdly, where there is adequate representation and enough variation exists within the demographic and background characteristics of the total sample, and if Fischer’s exact test is less than 0.05 (indicating significant differences exist between the two extreme groups demographic and background characteristics), then the demographic and background characteristics that indicated significant differences between the two student groups will be analysed to establish whether this could have an impact on the different literacy levels found between them.
Gender:

![Gender bar chart]

Figure 4.7: Gender (finance- or non-finance)

Source: SPSS output

Table 4.3: Pearson Chi-Square test for gender

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>21.151a</td>
<td>1</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: SPSS output

The non-finance-related diploma was represented by 57.8% (n=26) males and 42.2% (n=19) females. The finance-related diploma was represented by 20.5% (n=24) males and 79.5% (n=93) females. One of the respondents from the non-finance-related group did not indicate their gender and therefore resulted in n=162 rather than 163. From the Pearson chi-square test it is clear that there is a significant difference between the gender compositions of the two groups (0.000 < 0.05). The finance-related group is represented by a much larger female percentage than the non-finance group.

![Gender bar chart]

Figure 4.8: Gender of total sample

Source: SPSS output
The total respondents consisted of 30.9% \((n=50)\) males and 69.1% \((n=112)\) females. As there was adequate representation of males and females and enough variation within the total sample, gender could be used for further analysis in the extreme groups to establish whether it has a significant impact on the financial literacy levels of the students. The statistical results from the Fisher exact test \((>0.05)\) found no statistical difference between the literacy levels of male and female diploma students. Although several previous studies have identified gender to influence financial literacy levels \((Chen \& Volpe, 1998, 2002; Fonseca, Mullen, Zamarro \& Zissimopoulos, 2010; Mandel, 1997, 2002)\) the results of this study agree with the studies of Mandel \((2009)\), Ludlum, Tilker, Ritter, Cowart, Xu and Smith, \((2012)\), which found gender not to have a statistically significant impact on financial literacy levels.

**Age:**

![Figure 4.9: Age (finance- or non-finance)](source)

**Source:** SPSS output

**Table 4.4:** Pearson Chi-Square test for age

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>0.472*</td>
<td>3</td>
<td>0.925</td>
</tr>
</tbody>
</table>

**Source:** SPSS output

The finance-related diploma represents 68.1% \((n=79)\) and the non-finance-related diploma represents 65.9% \((n=29)\) of the 21-23 year age category. Other age categories
are 18-20 years, represented by 21.6% (n=25) from the finance-related diploma and
22.7% (n=10) from the non-finance-related diploma; 24-25 years, represented by 7.8%
(n=9) from the finance-related diploma and 6.8% (n=3) from the non-finance-related
diploma, and the older than 25 years age category represented by 2.6% (n=3) from the
finance-related diploma and 4.5% (n=2) from the non-finance-related diploma. Three
respondents, one from the finance-related group and two from the non-finance-related
group did not indicate their age and therefore n=160 rather than 163.

The Pearson chi-square test indicates that there is not a significant difference in the age
category of the two groups (0.925 > 0.05). Most of the finance- and non-finance-related
group were in the 21-23 year age category.

Figure 4.10: Age of total sample

Source: SPSS output

The majority of all respondents, 67.5%, (n=108) were in the 21-23 year age category.
Other age ranges and respondent percentages were: 21.9% (n=35) in the 18-20 year age
category, 7.5% (n=12) in the 24-25 year age category and 3.1% (n=5) in the older than 25
years age category. As a great majority of the respondents fell in the 21-23 year age
category, there was not enough variation in the age of the total sample to determine the
impact of age on financial literacy levels. Age could therefore not be used for further
analysis in the extreme groups to establish whether it has a significant impact on the
financial literacy levels of the students.
Table 4.5: Pearson Chi-Square tests for various languages

<table>
<thead>
<tr>
<th>Language (finance or non-finance)</th>
<th>Non-finance related diploma</th>
<th>Finance related diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afrikaans</td>
<td>11.10%</td>
<td>2.60%</td>
</tr>
<tr>
<td>English</td>
<td>2.60%</td>
<td>48.90%</td>
</tr>
<tr>
<td>Nguni (Zulu, Xhosa, Swati or Ndebele)</td>
<td>13.30%</td>
<td>38.50%</td>
</tr>
<tr>
<td>Portuguese</td>
<td>2.20%</td>
<td>2.60%</td>
</tr>
<tr>
<td>Sotho (Northern Sotho, Sesotho or Setswana)</td>
<td>26.70%</td>
<td>46.20%</td>
</tr>
<tr>
<td>Venda</td>
<td>2.20%</td>
<td>4.30%</td>
</tr>
<tr>
<td>Tsonga</td>
<td>2.20%</td>
<td>4.30%</td>
</tr>
</tbody>
</table>

**Source:** SPSS output

The majority of finance-related respondents, 46.2% (n=54) identified themselves as Sotho followed by 38.5% (n=45) identifying themselves as Nguni. Other language respondents identified for the finance-related group are: 9.4% (n=11) English, 4.3% (n=5) Venda, 4.3% (n=5) Tsonga, 2.6% (n=3) Afrikaans and 2.6% (n=3) Portuguese.

The majority of non-finance-related respondents, 48.9% (n=22) identified themselves as English, followed by 26.7% (n=12) identifying themselves as Sotho. Other ethnicities respondents identified for the non-finance-related group were: 13.3% (n=6) Nguni, 11.1% (n=5) Afrikaans, 2.2% (n=1) Portuguese, 2.2% (n=1) Venda and 2.2% (n=1) Tsonga.
None of the respondents from either group identified themselves as French. One of the respondents from the non-finance-related group did not indicate language and therefore n=162 rather than 163.

The Pearson chi-square test indicates that there was a significant difference in language selected by the two groups for Afrikaans (0.025 < 0.05), English (0.000 < 0.05), Nguni (0.002 < 0.05) and Sotho (0.024 < 0.05). There was no statistical significant difference between the two groups language selected for Portuguese (0.900 > 0.05), Venda (0.536 > 0.05) and Tsonga (0.536 > 0.05). The majority of the finance-related respondents were Sotho, compared to the majority of non-finance-related respondents who were English.

![Language of total sample](Figure 4.12)

**Source:** SPSS output

The majority of the total sample were Sotho, 40.7% (n=66), followed by 31.5% (n=51) Nguni and 20.4% (n=33) English. Other language percentages were 4.9% (n=8) Afrikaans, 3.7% (n=6) Venda and Tsonga, and 2.5% (n=4) Portuguese.

As there was adequate representation (enough variation) of Sotho, Nguni and English within the total sample, these languages could be used for further analysis in the extreme groups to establish whether they had a significant impact on the financial literacy levels of the students.
Table 4.6: Fisher's Exact Test for respondents falling below lower quartile and above upper quartile (Sotho or not Sotho)

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Exact Sig. (2-sided)</th>
<th>Exact Sig. (1-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>3.411a</td>
<td>1</td>
<td>.065</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuity Correction b</td>
<td>2.548</td>
<td>1</td>
<td>.110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>3.458</td>
<td>1</td>
<td>.063</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fisher's Exact Test</td>
<td>3.359</td>
<td>1</td>
<td>.067</td>
<td>.082</td>
<td>.055</td>
</tr>
<tr>
<td>Linear-by-Linear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Association</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS output

The statistical results from the Fisher exact test for the Nguni and English respondents (>0.05) indicated no statistical significance between these languages and financial literacy levels. Although the statistical results from the Fisher exact test for the Sotho respondents was (>0.05), it was (<0.1) and statistically significant at a 90% confidence interval (see Table 4.12 above). This study thus agrees with previous ones that have identified language as influencing financial literacy (Worthington, 2006).

Figure 4.13: Respondents falling below lower quartile and above upper quartile (Sotho or not Sotho)

Source: SPSS output

The results indicate that Sotho speakers are more likely to have achieved below the lower quartile (Figure 4.13 above).
Race:

![Race Composition Chart]

**Figure 4.14:** Race (finance or non-finance)

**Source:** SPSS output

**Table 4.7:** Pearson Chi-Square test for race

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>73.165(^a)</td>
<td>4</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Source:** SPSS output

The majority of the finance group, 95.7% (n=112), identified themselves as black compared to 43.2% (n=19) of the non-finance group, the majority of whom, 50% (n=22), identified themselves as white, while the finance group contained no white students. The third largest racial group was coloured, represented by a minor 2.6% (n=3) finance- and 4.5% (n=2) non-finance students. Respondents who identified their racial group as ‘other’ represented 1.7% (n=2) of the finance group, with no respondents from the non-finance group. No students from the finance group identified their race as Asian compared to 2.3% (n=1) from the non-finance group. Two of the respondents from the non-finance group did not indicate their race, leaving n=161 rather than 163.

The Pearson chi-square test (0.000 < 0.05) indicates that there is a significant difference in the racial composition of the two groups. The demographics of the finance group were predominantly black and the non-finance group mostly white for the current study.
In terms of race, the majority of the sample, 81.4% (n=131), identified themselves as black. This was followed by 13.7% (n=22) whites and 3.1% coloureds (n=5). Only 1.2% (n=2) of the total sample identified their racial group as ‘other’ and a mere 0.6% (n=1) of the total sample identified their race as Asian.

As a large majority of the respondents were black, there was not enough variation in the race of the total sample to determine the impact of race on financial literacy levels. Race could therefore not be used for further analysis in the extreme groups to establish whether it had a significant impact on the financial literacy levels of the students.

**Marital status**

**Figure 4.15:** Race of total sample

**Source:** SPSS output

**Figure 4.16:** Marital status (finance- or non-finance)

**Source:** SPSS output
Table 4.8: Pearson Chi-Square test for marital status

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>3.800</td>
<td>2</td>
<td>.150</td>
</tr>
</tbody>
</table>

Source: SPSS output

Marital status was mostly reported as single by both finance, 95.7% (n=112) and non-finance, 95.6% (n=43) groups. Of the finance students, 3.4% (n=4) were married and 0.9% (n=1) engaged or co-habiting. None of the non-finance students were married and 4.4% (n=2) of them were engaged or living together. One of the respondents from the non-finance-related group did not indicate marital status, therefore n=162 rather than 163.

The Pearson chi-square test shows no significant difference (0.150 > 0.05) in marital status of the two groups. The majority of the finance and non-finance-related group were single.

Figure 4.17: Marital status of total sample

Source: SPSS output

The majority of the total sample were single, 95.7% (n=155), the rest represented by 2.5% (n=4) who were married and 1.9% (n=3) engaged or living together.

As a large majority were single there was not enough variation in the marital status of the total sample to perform statistical tests to determine whether marital status impacted the financial literacy levels of students.
Most of the non-finance, 91.1% (n=41) and finance students, 87.9% (n=102), did not have any children. Of the non-finance group, 4.4% (n=2) had one child, 2.2% (n=1) had two children, none had three children and 2.2% (n=1) had four or more children. The finance group is represented by 8.6% (n=10) who had one child, 0.9% (n=1) who had two children, 1.7% (n=2) who had three children and 0.9% (n=1) who had four or more children. One of the finance-related respondents and one of the non-finance-related respondents omitted to answer this question, leaving n=161 rather than 163.

The Pearson chi-square test shows that there is not a significant difference (0.638 > 0.05) in the number of children of the two groups. The majority of the finance- as well as the non-finance-related group did not have any children.
Figure 4.19: Percentage of total sample respondents who had children

Source: SPSS output

The majority of the total sample had no children, 88.8% (n=143), followed by 7.5% (n=12) who had one child and 1.2% (n=2) who had two, three and four or more children, respectively. As the majority of the respondents did not have children there was not enough variation in the number of children of the total sample to determine its impact on the financial literacy levels. Number of children could therefore not be used for further analysis in the extreme groups to establish whether it had a significant impact on the financial literacy levels of the students.

Accommodation

Figure 4.20: Accommodation of respondents (finance- or non-finance)

Source: SPSS output
Table 4.10: Pearson Chi-Square test for accommodation

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>14.003*</td>
<td>3</td>
<td>.003</td>
</tr>
</tbody>
</table>

Source: SPSS output

The greatest proportion of non-finance-related students live with their parents, 64.3% (n=27), followed by shared student accommodation off campus, 16.7% (n=7) and a university residence on campus, 14.3% (n=6). The other small proportion, 4.8% (n=2) is made up of other accommodation. Finance students mostly stay in shared student accommodation off campus, 33.3% (n=39), followed closely by students who live with their parents, 31.6% (n=37) and a university residence on campus, 22.2% (n=26). The remainder of the students stay in other accommodation, 12.8% (n=15). Four of the respondents from the non-finance-related group did not answer this question and therefore n=159 rather than 163.

The Pearson chi-square test shows a significant difference in the accommodation of the two groups (0.03 < 0.05). The non-finance-related students mostly lived with their parents, compared to the finance-related students who mostly stayed in shared student accommodation off campus.

![Figure 4.21](https://example.com/figure421.png)

Figure 4.21: Accommodation of total sample respondents

Source: SPSS output

The majority of the sample stay at home with their parents, 40.3% (n=64), followed by 28.9% (n=46) who stay in shared student accommodation off campus, 20.1% (n=32) who stay in a university residence on campus, and 10.7% (n=17) who stay in other accommodation.
As there was adequate representation (enough variation) for the different accommodation groups within the total sample, accommodation could be used for further analysis in the extreme groups to establish whether it has a significant impact on the financial literacy levels of the students. The statistical results from the Fisher exact test (>0.05) indicated no statistical significance between accommodation and financial literacy levels. Therefore, whether students live at home or make use of other forms of accommodation, either on- or off-campus, does not significantly impact their levels of financial literacy.

**Work experience**

![Work experience chart]

**Figure 4.22:** Work experience (finance- or non-finance)

**Source:** SPSS output

**Table 4.11:** Pearson Chi-Square test for work experience

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>24.588²</td>
<td>7</td>
<td>.001</td>
</tr>
</tbody>
</table>

**Source:** SPSS output

A much larger percentage of finance students, 59% (n=69), do not have any work experience, compared to 20% (n=9) of non-finance students with no work experience. In all the other categories of work experience the non-finance students have more than do the finance students, except in the 2 years full-time work experience category. There was one finance-related student, 0.9%, and no non-finance-related students. The other categories were as follows: 22.2% (n=26) finance students and 31.1% non-finance
students in the 1 year part-time work experience category, 8.5% (n=10) finance-related students and 20% (n=9) non-finance-related students in the 2 years part-time work experience category, 2.6% (n=3) finance-related students, 11.1% (n=5) non-finance-related students in the 3 years part-time work experience category, 4.3% (n=5) in the finance-related students, and 13.3% (n=6) in the non-finance-related students 1 year full-time work experience category. One of the respondents from the non-finance-related group did not indicate their work experience and therefore n=162 rather than 163.

The Pearson chi-square test also confirms that there is a significant difference in the work experience of the two groups (0.01 < 0.05). The non-finance-related group tends to have more work experience than the finance-related group.

The majority of the total sample have no work experience, 48.1% (n=78). In terms of part-time experience the sample is represented by 24.7% (n=40), who have 1 year part-time experience, 11.7% (n=19), who have 2 years part-time experience and 4.9% (n=8) who have 3 years part-time experience. In terms of full-time experience the sample is represented by 6.8% (n=11) who have 1 year full-time experience, 0.6% (n=1) who have 2 years full-time experience, 1.2% (n=2) who have 3 years full-time experience, and 1.9% (n=3) who have 4 or more years full-time experience. As there was adequate representation (enough variation for some of the work experience groups within the total sample), these work experience groups could be used for further analysis in the extreme groups to establish whether it has a significant impact on the financial literacy levels of the students. The statistical results from the Fisher exact test (>0.05) indicated no statistical significance between work experience and financial literacy levels. Therefore according to

Figure 4.23: Work experience of total sample

Source: SPSS output

The majority of the total sample have no work experience, 48.1% (n=78). In terms of part-time experience the sample is represented by 24.7% (n=40), who have 1 year part-time experience, 11.7% (n=19), who have 2 years part-time experience and 4.9% (n=8) who have 3 years part-time experience. In terms of full-time experience the sample is represented by 6.8% (n=11) who have 1 year full-time experience, 0.6% (n=1) who have 2 years full-time experience, 1.2% (n=2) who have 3 years full-time experience, and 1.9% (n=3) who have 4 or more years full-time experience. As there was adequate representation (enough variation for some of the work experience groups within the total sample), these work experience groups could be used for further analysis in the extreme groups to establish whether it has a significant impact on the financial literacy levels of the students. The statistical results from the Fisher exact test (>0.05) indicated no statistical significance between work experience and financial literacy levels. Therefore according to
the findings of this study work experience does not impact the financial literacy of third-year diploma students.

This finding is in contradiction with previous research that found financial literacy improved with work experience (Chen et al., 2002). This may be because most of the respondents did not have decent or valuable work experience as none of the full time work experience could be tested due to inadequate representation.

**Parental education**

![Figure 4.24: Father's highest level of schooling (finance- or non-finance)](source: SPSS output)

**Table 4.12: Pearson Chi-Square test for father's highest level of schooling**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>1.179a</td>
<td>4</td>
<td>.882</td>
</tr>
</tbody>
</table>

**Source:** SPSS output

![Figure 4.25: Mother's highest level of schooling (finance- or non-finance)](source: SPSS output)

**Source:** SPSS output
Table 4.13: Pearson Chi-Square test for mother's highest level of schooling

<table>
<thead>
<tr>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>6.582³</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: SPSS output

Education level of parents was relatively low, with only 22.8% (n=37) of fathers and 23.5% (n=38) of mothers being graduates. Of these graduates, 21.4% (n=25) were fathers from the finance-related group, and a slightly higher percentage, 26.7% (n=12) were fathers from the non-finance-related group. The mothers from the non-finance-related group also had a higher level of graduates, 26.7% (n=12) compared to 22.2% (n=26) of mothers from the finance-related group. The non-finance-related group also had a higher percentage of diploma graduates for both their fathers, 13.3% (n=6), and mothers, 24.4% (n=11), compared to the finance group, who had 11.1% (n=13) fathers and 17.9% (n=21) mothers who were diploma graduates. The number of fathers and mothers who had not completed high school was much higher for finance-related students. More than 15% (n=18) of fathers from the finance-related group had not completed high school, compared to 11.1% (n=5) of the fathers from the non-finance-related group. Almost 20% (n=23) of the finance-related group’s mothers had not completed high school compared to only 4.4% (n=2) of the non-finance-related group. The number of fathers and mothers who completed high school was very similar and there was little variation between the groups in this regard. Almost 29% (n=13) of the non-finance-related group’s fathers had completed high school and 33.3% (n=39) of the finance-related group’s fathers completed high school. In both the finance (n=39) and non-finance (n=15) group, 33.3% of their mothers had completed high school. One of the respondents from the non-finance-related group did not answer this question and therefore n=162 rather than 163.

The Pearson chi-square test shows that there is not a significant difference in the parental education of fathers (0.882 > 0.05) and mothers (0.16 > 0.05) of the two groups. The majority of mothers and fathers from both the finance- and non-finance-related groups had only completed high school.
The majority of both fathers, 32.1% (n=52), and mothers, 33.3% (n=), had completed high school. Other education of fathers for the total sample was 22.8% (n=37) who were degree graduates or higher, 19.1% (n=31) unknown, 14.2% (n=23) had not completed high school and 11.7% (n=19) were diploma graduates. Other education of mothers for the total sample was 23.5% (n=38) who were degree graduates or higher, 19.8% (n=32) were diploma graduates, 15.4% (n=25) had not completed high school and 8% (n=13) were unknown. As there was adequate representation (enough variation) of parental education within the total sample, parental education could be used for further analysis in the extreme groups to establish whether it has a significant impact on the financial literacy levels of the students. The statistical results from the Fisher exact test (>0.05) indicated no statistical significance between parental education and financial literacy levels.

Although previous studies (Mandell, 2009; Lusardi, Mitchell and Curto, 2010) found that parental education influences financial literacy levels the current study did not find any statistical significance (>0.05) between parental education and financial literacy.
The majority of students from both the finance-, 47% (n=55), and non-finance group, 56.5% (n=26), were funded by their parents and/or family. 38.5% (n=45) of the finance students and 23.9% (n=11) of the non-finance students made use of NSFAS funding and 10.9% (n=5) of non-finance students were funding their studies with bank loans, compared to only 2.6% (n=3) of the finance students who were doing so. The survey results indicate that 6.8% (n=8) of finance students and 8.7% (n=4) of non-finance students were funding their own studies. A small proportion, 6.8% (n=8), of finance students and 4.3% (n=2) of non-finance students had bursaries. The two least utilised methods of funding were Edu-loans, used by 2.6% (n=3) of the finance group and 2.2%
(n=1) of the non-finance group and sponsorships, used by only 0.9% (n=1) of the finance group and none of the non-finance group as a method of funding.

The Pearson chi-square test indicates that the following methods of funding, namely ‘I paid for it myself’ (0.683 > 0.05), my parents and/or family paid (0.274 > 0.05), ‘I have a bursary’ (0.551 > 0.05), ‘I have a sponsorship’ (0.529 > 0.05), NSFAS (0.078 > 0.05) and Edu-loan (0.885 > 0.05), did not indicate a statistical significant difference between the two groups. However, bank loans (0.027 < 0.05) were the only method in which a significant difference existed between the two groups. More non-finance-related students funded their studies with bank loans than did the finance-related students.

Figure 4.28: Methods of funding of total sample

Source: SPSS output

The majority of the sample were being funded by their parents, 49.7% (n=81), or NSFAS, 34.4% (n=56). Other funding was for the 37.4% (n=12) who paid for themselves, 6.10% (n=10) who had a bursary, 4.9% (n=8) a bank loan, 2.5% (n=4) by Edu-loan, and 0.6% (n=1) by sponsorship.

As there was adequate representation (enough variation) of funding via parents and NSFAS within the total sample, these funding methods could be used for further analysis in the extreme groups to establish whether they have a significant impact on the financial literacy levels of the students.
Table 4.15: Fischer’s Exact Test for respondents falling below lower quartile and above upper quartile (sponsored/funded by parents or not sponsored/funded by parents)

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Exact Sig. (2-sided)</th>
<th>Exact Sig. (1-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>6.281(a)</td>
<td>1</td>
<td>.012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuity Correction(b)</td>
<td>5.098</td>
<td>1</td>
<td>.024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>6.362</td>
<td>1</td>
<td>.012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fisher's Exact Test</td>
<td></td>
<td></td>
<td></td>
<td>.015</td>
<td>.012</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>6.187</td>
<td>1</td>
<td>.013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS output

Table 4.16: Fischer’s Exact Test for respondents falling below lower quartile and above upper quartile (sponsored/funded by NSFAS or not sponsored/funded by NSFAS)

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Exact Sig. (2-sided)</th>
<th>Exact Sig. (1-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>4.894(a)</td>
<td>1</td>
<td>.027</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuity Correction(b)</td>
<td>3.796</td>
<td>1</td>
<td>.051</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>5.124</td>
<td>1</td>
<td>.024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fisher's Exact Test</td>
<td></td>
<td></td>
<td></td>
<td>.036</td>
<td>.024</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>4.821</td>
<td>1</td>
<td>.028</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS output

The statistical results from the Fisher exact test (<0.05) indicated a statistical significance between these funding methods and financial literacy levels (see Table 4.27 and 4.28 above).
The two statistically significant differences identified from the results (refer to Figures 4.29 and 4.30 above) indicated that firstly students whose parents funded for their studies were more likely to possess higher levels of financial literacy than the top quartile (0.012 < 0.05). Secondly, students whose studies were funded through a NSFAS loan were more likely to possess lower levels of financial literacy than the bottom quartile (0.024 < 0.05). These findings are in line with previous research also conducted at the University which indicated a relationship between performance in the first semester and the type of funding option a student uses (Vermaak, 2011).
Bank account and credit card

![Bar chart showing percentage of respondents who have a bank account and/or credit card (finance or non-finance)]

**Figure 4.31:** Percentage of respondents who have a bank account and/or credit card (finance or non-finance)

**Source:** SPSS output

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>bank account</td>
<td>4.189(^a)</td>
<td>1</td>
<td>.041</td>
</tr>
<tr>
<td>credit card</td>
<td>.162(^a)</td>
<td>1</td>
<td>.687</td>
</tr>
</tbody>
</table>

**Table 4.17:** Pearson Chi-Square test of bank account or credit card

**Source:** SPSS output

All non-finance students had bank accounts, compared to 8.5% (n=10) non-finance students who did not have a bank account. In the finance group, 12.8% (n=15) had a credit card compared to 15.2% (n=7) in the non-finance group.

The Pearson chi-square test found that there was a significant difference between the two groups in terms of having a bank account (0.041 < 0.05) and no statistical difference in terms of having a credit card (0.687 > 0.05). All the non-finance students had bank accounts, compared to 8.5% finance students who did not have a bank account. Most of the finance and non-finance group did not own a credit card.
The majority of the sample had a bank account, 93.9% (n=153), and not a credit card, 86.5% (n=141). As a large majority had a bank account there was not enough variation in the total sample to determine the impact of a bank account on financial literacy levels. Bank account could therefore not be used for further analysis in the extreme groups to establish whether it had a significant impact on the financial literacy levels of the students.

Similarly, as a large majority of the respondents did not have a credit card there was not enough variation in the total sample to determine the impact of having a credit card on financial literacy levels. Credit card could therefore not be used for further analysis in the extreme groups to establish whether it has a significant impact on the financial literacy levels of the students.

**Personal finance course**

**Figure 4.33:** Percentage of respondents who have taken a personal finance course (finance- or non-finance)

Source: SPSS output
Table 4.18: Pearson Chi-Square test of personal finance course

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>.091*</td>
<td>1</td>
<td>.763</td>
</tr>
</tbody>
</table>

Source: SPSS output

Personal finance courses have been taken by 10.3% (n=12) of the finance students and 8.7% (n=4) of the non-finance students. The Pearson chi-square test indicates that there is not a significant difference between the two groups in terms of having taken a personal finance course (0.763 > 0.05). Most of the finance and non-finance students had not taken a personal finance course.

Figure 4.34: Percentage of total sample respondents who have taken a personal finance course.

Source: SPSS output

The majority of the sample had not taken a personal finance course, 90.2% (n=147). As a large majority of the respondents had not taken a personal finance course, there was not enough variation in the total sample to determine the impact of a personal finance course on financial literacy levels. Personal finance course could therefore not be used for further analysis in the extreme groups to establish whether it had a significant impact on the financial literacy levels of the students.
Conclusion

In performing statistical analysis on the difference in demographic and background factors between the finance- and non-finance-related diploma groups the following was found (Table 4.19).

**Table 4.19:** Demographic and background characteristics of the finance and non-finance-related group that indicate a statistically significant difference and which do not indicate a statistically significant difference

<table>
<thead>
<tr>
<th>Statistically significant difference (Chi-Square &lt;0.05)</th>
<th>No statistically significant difference (Chi-Square &gt;0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Language (Portuguese, Venda, Tsonga)</td>
</tr>
<tr>
<td>Language (Afrikaans, English, Nguni, Sotho)</td>
<td>Age</td>
</tr>
<tr>
<td>Race</td>
<td>Marital status</td>
</tr>
<tr>
<td>Accommodation</td>
<td>Children</td>
</tr>
<tr>
<td>Work experience</td>
<td>Parental education</td>
</tr>
<tr>
<td>Funding (Bank loans)</td>
<td>Funding (Myself, Parents and/or family, bursary, sponsorship, NSFAS, Edu-loan)</td>
</tr>
<tr>
<td>Bank account</td>
<td>Credit card</td>
</tr>
<tr>
<td></td>
<td>Personal finance course</td>
</tr>
</tbody>
</table>

*Source:* SPSS output

The following demographic and background characteristics could not be further analysed to determine if they influence financial literacy levels because of a lack of variation or adequate representation within the total sample, namely age, language (Afrikaans, Portuguese, Venda Tsonga), race, marital status, children, work experience (3 years part-time, 1 year full-time, 2 years full-time, 3 years full-time, 4 or more years full-time), funding of studies (*I paid for it myself, I have a bursary, I have a sponsorship, Edu-loan, bank loan*), bank account, credit card, personal finance course. Although the demographic and background characteristics discussed were identified by past research to influence financial literacy levels, in contradiction with prior research, gender, language (English and Nguni), all accommodation, work experience (none, 1 year part-time, 2 years part-time) and parental education did not indicate a statistical significant impact on the financial literacy level of third-year diploma students as their Fischer exact test values were more than 0.05. Only language (Sotho) and funding (via parents and NSFAS) were found statistically significant in influencing financial literacy levels.
Perceptions of their own financial literacy

Students’ perceptions of their own financial literacy levels was analysed and compared to the students’ actual financial literacy levels. The Pearson chi-square test was also used to compare the finance or the non-finance students’ perceptions of their own financial literacy levels.

Figure 4.35: Extent to which respondents consider themselves to be financially literate

Source: SPSS output

Table 4.20: Pearson Chi-Square test of student perceptions of their financial literacy levels

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>5.954**</td>
<td>4</td>
<td>.203</td>
</tr>
</tbody>
</table>

Source: SPSS output

Students were asked to use a likert scale to rate the extent to which they considered themselves to be financially literate, ranging from no extent, to a small extent, to a moderate extent, to a large extent, to completely financially literate. The finance, 44.6% (n=50) and non-finance, 47.8% (n=22) students mostly considered themselves to be financially literate to a moderate extent. This was followed by 32.1% (n=36) finance students and 23.9% (n=11) non-finance students considering themselves to be financially literate to a large extent, and 9.8% (n=11) finance students and 21.7% (n=10) non-finance students considering themselves to be financially literate to a small extent. Furthermore 1.8% (n=2) of the finance students and none of the non-finance students considered themselves to be financially literate to no extent. Of the finance-related group, 11.6%
(n=13) and of the non-finance-related group, 6.5% (n=3) considered themselves to be completely financially literate. Five of the respondents from the finance-related group did not answer this question and therefore n=158 rather than 163.

The Pearson chi-square test shows that there is not a statistical significant difference (0.203 > 0.05) between the extent to which the finance and non-finance group consider themselves to be financially literate. The finance and non-finance students mostly considered themselves to be financially literate to a moderate extent (45.6%).

**Importance of financial literacy**

![Bar chart showing the percentage of finance-related and non-finance-related students considering diploma graduates to be financially literate.](chart.png)

**Figure 4.36**: How important respondents consider it to be for diploma graduates to be financially literate

**Source**: SPSS output

**Table 4.21**: Pearson Chi-Square test of student perceptions of importance of financial literacy

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>12.835*</td>
<td>4</td>
<td>.012</td>
</tr>
</tbody>
</table>

**Source**: SPSS output

Students were also asked to use a likert scale to rate the importance of diploma graduates being financially literate once they had completed their studies, ranging from *totally unimportant, unimportant, marginally important, important* to *very important*. The majority of the students, 73.9% (n=119), thought it was very important for a diploma graduate to be financially literate once they had completed their studies. Of these students 78.6% (n=92) were finance-related students and 61.4% (n=27) were non-
finance-related students. Furthermore, 19.9% (n=32) believed it was important for diploma graduates to be financially literate and 3.7% (n=6) believed it to be marginally important. Only 1.2% (n=2) believed it to be unimportant and totally unimportant, respectively. Two of the respondents from the non-finance-related group did not answer this question and therefore n=161 rather than 163.

Although the majority of finance and non-finance students consider financial literacy to be very important, more respondents from the finance-related group seem to have this view as the Pearson chi-square test shows that a statistical significant difference between the extent to which the groups considered financial literacy to be important (0.012 < 0.05).

**Overall Research Question:** Do students who study towards a diploma in a finance-related field have higher financial literacy levels than those studying towards a diploma in a non-finance-related field of study?

The results from the questionnaire will be analysed and discussed by focusing on the literacy levels of finance or non-finance students. The average financial literacy scores of both groups were compared for the entire survey. t-tests were used to compare the mean differences between the two diplomas, after Levene’s test for equality of variances had been used to test the underlying t-test assumption that the variances between the two samples are equal.

**Table 4.22:** Average financial literacy percentage of finance and non-finance students

<table>
<thead>
<tr>
<th>Diploma groups</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial literacy percentage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-finance-related diploma</td>
<td>46</td>
<td>49.4279</td>
<td>17.87334</td>
<td>2.63528</td>
</tr>
<tr>
<td>Finance-related diploma</td>
<td>117</td>
<td>54.9708</td>
<td>12.11758</td>
<td>1.12027</td>
</tr>
</tbody>
</table>

**Source:** SPSS output

On average the finance students achieved better results for the financial literacy survey with an average of 54.97% as opposed to the non-finance students with an average of 49.43%. 


Table 4.23: Independent Samples Test

<table>
<thead>
<tr>
<th></th>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
<td>T</td>
</tr>
<tr>
<td>Financial literacy percentage</td>
<td>Equal variances assumed</td>
<td>11.792</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>-1.936</td>
<td>61.949</td>
</tr>
</tbody>
</table>

Source: SPSS output

When analysing the statistical significance of the variances between the finance and non-finance groups in terms of financial literacy levels, the following was found. The results of the Levene test showed a significant difference in the equality of variances (0.001 which is less than 0.05) resulting in the use of the t-test where equal variances are not assumed to analyse the equality of means between the samples. The t-test for equality of means where equal variances are not assumed is 0.057, which is more than 0.05 and therefore not statistically significant at a 95% confidence interval. However, when considering significance at a 90% confidence interval, where equality of means cannot be assumed, the t-test shows a significant difference as 0.057 is less than 0.10. The results indicate that at a 10% statistical significance level equal means cannot be assumed between the finance and non-finance-related groups. This indicates that at a 90% confidence level there is a significant variation in the average financial literacy score of the finance-related group compared to the non-finance-related group.

Comparison of literacy scores per content area

Besides only comparing the average financial literacy score of the finance group to the non-finance group for the entire survey, the percentage of correct responses in each of the five content areas was also compared.
Savings and borrowing

Figure 4.37: Savings and borrowing questions correct (finance-related group compared to the non-finance-related group)

Source: SPSS output

Table 4.24: Pearson Chi-Square Test of savings and borrowings

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>5.431*</td>
<td>5</td>
<td>.366</td>
</tr>
</tbody>
</table>

Source: SPSS output

When comparing the finance students to the non-finance students for this topic, the majority of finance students, 34.2% (n=40), managed to answer two out of the five questions correctly as opposed to the non-finance students who obtained 28.3% (n=13). The majority of the non-finance students, 32.6% (n=15) obtained one out of five compared to 17.1% (n=20) finance students. The other number of correct answers achieved for this topic did not greatly vary. The Pearson chi-square test, performed to observe if there was a significant difference between the two groups in terms of the percentage of the correctly answered number of questions for this section, revealed that there was not a significant difference (0.366 > 0.05) at a 5% confidence level between the finance and non-finance groups in terms of their literacy regarding savings and borrowings. Field of study does therefore not influence and is therefore not significant in determining the savings and borrowing content area of financial literacy.
Markets and instruments

**Figure 4.38:** Markets and instruments questions correct (finance-related group compared to the non-finance-related group)

**Source:** SPSS output

**Table 4.25:** Pearson Chi-Square Test of markets and instruments

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
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<tr>
<td>Pearson Chi-Square</td>
<td>1.793 *</td>
<td>3</td>
<td>.617</td>
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</table>

**Source:** SPSS output

When comparing the finance students to the non-finance students for this topic, the majority of both finance, 42.7% (n=50) and non-finance, 43.5% (n=20) students managed to correctly answer two out of the three questions. The non-finance students not only performed slightly better than the finance students in correctly answering two out of the three questions, but surprisingly also performed slightly better than the finance students with 15.2% (n=7) compared to 13.7% (n=16) students who had all three questions correct. The Pearson chi-square test performed to observe if there was a significant difference between the two groups in terms of the percentage of correctly answered questions for this section revealed that there was not a significant difference (0.617 > 0.05) at a 5% confidence level between the finance and non-finance groups in terms of understanding markets and instruments. Field of study does therefore not influence and is therefore not significant in determining the markets and instrument content area of financial literacy.
Basic concepts

![Bar chart showing basic concepts questions correct for finance and non-finance related groups]

**Figure 4.39:** Basic concepts questions correct (finance-related group compared to the non-finance-related group)

**Source:** SPSS output

**Table 4.26:** Pearson Chi-Square Test of basic concepts

<table>
<thead>
<tr>
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<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
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<td>Pearson Chi-Square</td>
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</table>

**Source:** SPSS output

The majority of the finance group, 45.3% (n=53) had three out of four questions in this section correct, followed by 29.9% (n=35) who had two out of four correct and 19.7% (n=23) who had all four question correct. In the non-finance group there was an equal number of students who had two and three out of four questions correct, namely 28.3% (n=13) for both. This was followed by 23.9% (n=11) who only had one out of the four questions correct and 15.2% (n=7) who had all the question correct. In the case of the basic concepts, the Pearson chi-square test reveals a significant difference (0.001 < 0.05) at a 5% confidence level between the finance and non-finance groups in terms of grasping basic concepts. Field of study does therefore influence and is therefore significant in determining the basic concepts content area of financial literacy. The finance students tend to know more about basic concepts than the non-finance students.
Figure 4.40: Financial planning questions correct (finance-related group compared to the non-finance-related group)

Source: SPSS output

Table 4.27: Pearson Chi-Square Test of financial planning

<table>
<thead>
<tr>
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<th>Value</th>
<th>Df</th>
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<td>Pearson Chi-Square</td>
<td>20.227*</td>
<td>4</td>
<td>.000</td>
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</table>

Source: SPSS output

The majority of the finance group, 46.2% (n=54) had two out of the four questions in this section correct, followed by 27.4% (n=32) who had one out of four correct, 23.1% (n=27) who had three out of four questions correct and an equal number of students who had either all questions or no questions correct, namely 1.7% (n=2). The majority of non-finance students only managed to score one out of four, 30.4% (n=14), followed by 23.9% (n=11) who had three out of four questions correct and 21.7% (n=10) who had two out of four questions correct. Significantly, although only 1.7% of the finance students had all questions incorrect compared to 10.9% (n=5) non-finance students, only 1.7% finance students also managed to get all questions correct compared to 13% (n=6) non-finance students who had all questions correct. The Pearson chi-square test confirms that there is a significant difference (0.000 < 0.05) at a 5% confidence level between the finance and non-finance groups.
non-finance groups in terms of understanding financial planning concepts. Field of study does therefore influence and is therefore significant in determining the financial planning content area of financial literacy. Interestingly enough the non-finance students tend to know slightly more about financial planning than the finance students.

**Insurance**

![Insurance Questions Correct](image)

**Figure 4.41**: Insurance questions correct (finance-related group compared to the non-finance-related group)

**Source**: SPSS output

**Table 4.28**: Pearson Chi-Square Test of insurance

<table>
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<tr>
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<th>Value</th>
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</thead>
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<td>Pearson Chi-Square</td>
<td>4.957&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3</td>
<td>.175</td>
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</tbody>
</table>

**Source**: SPSS output

The majority of finance students, 41% (n=48), had two out of three questions correct compared to 28.3% (n=13) obtained by non-finance students. The majority of non-finance students, 41.3% (n=19) had one out of three questions correct and the finance students 30.8% (n=36). The finance students also did slightly better in both the percentage of students who answered all questions correctly and in the section of students who answered all questions incorrectly. Finance students obtained a higher percentage for all three questions correct with 22.2% (n=26) compared to the non-finance students, 17.4%
(n=8), and finance students obtained a lower percentage for all questions incorrect with 6% (n=7) compared to 13% (n=6) of non-finance students. According to the Pearson chi square test there is not a significant difference (0.175 > 0.05) between the finance and non-finance groups' results at a 5% confidence level in terms of understanding insurance concepts. Field of study does therefore not influence and is therefore not significant in determining the insurance content area of financial literacy.

4.5 LIMITATIONS

Data was collected from the 2011 third-year diploma students of the University of Johannesburg, Bunting Road campus. A limitation of the study is that it cannot be generalised to other year groups, universities or campuses. Furthermore, the truthfulness with which respondents answered the questions cannot be guaranteed. Although all 163 students invited to participate completed the questionnaire, some did not answer all the questions. This may have been because the questionnaire, in line with the Jump$tart questionnaire, did not provide students with an “I do not know” option as an alternative to each of the questions. As all students completed the questionnaire in the allocated 30 minutes it was assumed that instead of guessing students did not provide an answer to the questions they did not know. In line with this assumption these omitted answers in section B were treated as incorrect in terms of the data analysis. Although there was not always enough variation in the demographic and background characteristics of the total sample to test their influence on financial literacy levels, this added to the reliability of the main aim of the study, namely testing whether field of study (finance or non-finance-related diploma) influences financial literacy levels without being influenced by these demographic and background characteristics.

4.6 CONCLUSION

The demographic and background characteristics of the sample indicate that the majority of the finance-related diploma was female, compared to the majority of the non-finance-related diploma who were male. Most of the finance and non-finance-related group were in the 21 to 23 year age category. The majority of the finance-related respondents were Sotho compared to the majority of the non-finance-related respondents who were English. In terms of demographics, the finance group were predominantly black and the non-finance group mostly white for the current study. The majority of the finance and non-finance-related group were single and did not have children. The non-finance-related
students mostly lived with their parents, compared to the finance-related students who mostly stayed in shared student accommodation off campus. The majority of finance students did not have any work experience while the majority of non-finance students had one year’s part-time work experience. The majority of both the finance and non-finance-related groups indicated that the highest level of schooling completed by their mothers and fathers was high school. The studies of the majority of students from both the finance and non-finance group are funded by their parents and/or family. The majority of both the finance and non-finance groups have a bank account, but do not have a credit card. Furthermore, most of the finance and non-finance group have not taken a personal finance course.

Sub-question One: How financially literate are the 2011 third-year diploma students studying at the University of Johannesburg?

The financial literacy scores of the respondents range from 5.26% to 84.21%. The results show students having low levels of financial literacy with an average financial literacy score of 53.4%. According to the financial literacy rating score used by Jump$tart coalition, a respondent needs to obtain at least 60% to be considered financially literate. The average score achieved by the sample (53.4%) falls below this and indicates that the financial literacy levels of the majority of third-year University of Johannesburg diploma students of 2011 were low.

Sub-Question Two: In which content areas of financial literacy did students demonstrate better or worse achievements?

The results indicate that students performed the worst in the savings and borrowings section and achieved the best results in the basic concepts section. This may be because they were more familiar with the questions in the basic concept section as they received more exposure and actively participated in these basic concepts as opposed to saving and borrowing. The findings and implications of these data are discussed in Chapter 5.

Sub-Question Three: Which demographic and background characteristics influence financial literacy?

Many of the demographic and background characteristics could not be tested because of a lack of variation in the total sample. In contradiction to previous research, the results indicated that many of the demographic and background characteristics that could be
tested did not seem to have a significant impact on financial literacy levels. The only significant differences identified from the results were students whose parents paid for their studies were more likely to possess higher levels of financial literacy than the top quartile and students whose studies were funded through a NSFAS loan or Sotho students were more likely to possess lower levels of financial literacy than the bottom quartile.

Sub-Question Four: How do students’ perceptions of financial literacy compare to their actual financial literacy levels?

Although the finance and non-finance students mostly considered themselves to be financially literate to a moderate extent (45.6%), there were a number of students (29.7%) who considered themselves to be financially literate to a large extent. If these ratings students gave themselves are compared to the results of their actual financial literacy levels, with an average financial literacy score of 53.4%, it indicates that there is a gap between what students think they know and what they actually know.

Overall Research Question: Do students who study towards a diploma in a finance-related field have higher financial literacy levels than those students studying towards a diploma in a non-finance-related field of study?

The results support the majority of previous research, showing that field of study influences financial literacy and that on average finance students are more financially literate than non-finance students. Although the finance students (54.97%) performed better than the non-finance students (49.43%) the difference in their results was smaller than anticipated. This could possibly be explained by looking at some of the demographic and background characteristics identified as influencing financial literacy.

Question 3 looked at which demographic and background characteristics influence financial literacy. The results (Fischer’s exact test) indicated language (Sotho) and funding (Parents and NSFAS) influence financial literacy. Since students who are Sotho tend to have lower levels of financial literacy and the Pearson Chi-square test indicated a statistically significant difference between finance respondents who were Sotho compared to non-finance-related respondents and 46.2% (n=54) finance students were Sotho compared to only 26.7 (n=12) non-finance students, could explain why the margin in the financial literacy results achieved by the finance and non-finance group were smaller than anticipated. Although students whose studies were funded by an NSFAS loan tended to
have lower levels of financial literacy and students whose parents funded their studies tended to have higher levels of financial literacy, that the Pearson Chi-square test indicated no statistically significant difference in the funding of finance compared to non-finance students via NSFAS loans or parents respectively, indicates that it cannot be used to explain the small variation in the financial literacy levels of the finance-related group compared to the non-finance-related group. In terms of content area only the content areas of basic concepts and financial planning indicated a statistically significant difference between the finance compared to the non-finance group. The finance students tended to know more about basic concepts than the non-finance students and the non-finance students tended to know slightly more about financial planning than the finance students.
CHAPTER 5
FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

In Chapter 4 a detailed analysis of the findings were provided. This chapter will firstly provide a summary of the main findings reported for each research question as well as the contribution of this study. Secondly, the limitations of the study and recommendations of the findings for future research are discussed. Finally, some conclusions are drawn.

5.2 SUMMARY OF FINDINGS AND CONTRIBUTION OF STUDY

There were a number of significant findings from the research.

5.2.1 Overall financial literacy levels of third-year diploma students

The first sub-question examined the financial literacy levels of third-year university students studying towards a diploma at the University in 2011. The average score achieved by the entire sample (both finance and non-finance-related students) was a meagre 53.4%. This score indicates that third-year diploma students of 2011 possessed low levels of financial literacy and is in line with previous studies that have identified financial literacy levels of university students to be low (Avard et al., 2005; Beal & Delpachitra, 2003; Ibrahim et al., 2009; Marcolin & Abraham 2006). Low levels of financial literacy thus seem to be a universal challenge as the findings of Question 1 of the study correspond to those of other financial literacy studies undertaken in the USA, Australia, New-Zealand, the UK and other European countries. This is of concern as these students are about to embark on their journey into the working world, where they will be faced with various financial decisions which require one to be financially literate in order to make the best decisions from early on and secure their own financial wellbeing.

Sub-question 2 examined in which areas (savings and borrowings, markets and instruments, basic concepts, financial planning and insurance) of financial literacy students demonstrated better or worse achievements. The results indicated that students fared the best in the basic concepts section. This may be due to the fact that they were more familiar with the questions in this section and also actively participated in some of these basic concepts in their daily lives. Students achieved the worst results in the savings and borrowings section. This is also of concern, especially as some of these
students funded their studies through loans and may not understand the terms and conditions of their loan repayments. Furthermore, South Africans have a high debt and low savings culture and it is therefore crucial to increase the financial literacy content area of savings and borrowings as it is important to know the benefits of saving from early on in one’s life for adequate retirement. Introducing a financial curriculum and financial education programme might be something to be considered by government and banks, especially to promote saving and educate consumers about debt.

5.2.2 Influence of demographic and background factors on financial literacy

The third sub-question examined which demographic and background characteristics influence financial literacy. In performing statistical analysis on the difference in demographic and background factors between the finance and non-finance-related diploma groups the following was found: only gender, language (Afrikaans, English, Nguni, Sotho), race, accommodation, work experience, funding (bank loans) and bank account indicated a statistically significant difference between the two groups (Table 4.32).

Furthermore, the following demographic and background characteristics could not be further analysed to determine if they influence financial literacy levels because of a lack of variation or adequate representation within the total sample, namely age, language (Afrikaans, Portuguese, Venda Tsonga), race, marital status, children, work experience (3 years part-time, 1 year full-time, 2 years full-time, 3 years full-time, 4 or more years full-time), funding (I paid for it myself, I have a bursary, I have a sponsorship, Edu-loan, bank loan), bank account, credit card, personal finance course. Although the demographic and background characteristics discussed were identified by past research to influence financial literacy levels, in contradiction with prior research, gender, language (English and Nguni), all accommodation, work experience (none, 1 year part-time, 2 years part-time) and parental education did not indicate a statistical significant impact on the financial literacy level of third-year diploma students as their Fischer exact test values were more than 0.05. Only language (Sotho) and funding (via parents and NSFAS) were identified to be statistically significant in explaining the variation in financial literacy levels of respondents who achieved higher financial literacy scores compared to those who scored lower. Firstly, students who are Sotho-speaking are more likely to possess lower levels of financial literacy than the bottom quartile. Secondly, students whose parents paid for their studies were more likely to possess higher levels of financial literacy than the top
quartile and students whose studies were funded through an NSFAS loan were more likely to possess lower levels of financial literacy than the bottom quartile.

All the questions were asked in English and although all students should be proficient in English as all their lectures are in English, which is not their home language, that students who are Sotho speaking tend to have lower levels of financial literacy could indicate language to be a barrier. This could potentially also influence their marks in their other modules.

Method of funding studies via parents and/or family paying indicated higher levels of financial literacy. This could be because of students realising the cost implications if they do not pass and being more involved with the finances whereas the majority of students who are funded through an NSFAS loan come from poor families who are not very involved or do not have access to financial experience.

Of the demographic and background characteristic to influence financial literacy, namely method of funding studies (parents and/or family paid and NSFAS) and language (Sotho), language (Sotho) was the only one to also indicate a statistically significant difference between the finance students who were Sotho compared to the non-finance students, and could be used to explain the impact of field of study on financial literacy (refer to 5.2.3 below).

5.2.3 Impact of the field of study on financial literacy levels

The main research question addressed the influence of the field of study on the level of financial literacy by comparing the financial literacy scores of the finance-related group with those of the non-finance-related group. This study supports the majority of previous research (Chen & Volpe, 1998 & 2002; Hanna, Hill & Perdue, 2010; Marcolin & Abraham, 2006) that has found field of study to influence financial literacy and that finance students are more financially literate than other majors. Although the finance students (54.97%) performed better than the non-finance students (49.43%), supporting previous research studies in which business or finance students were found to achieve better results, the difference in the scores was smaller than anticipated. This could possibly be explained by the fact that language (Sotho) was identified as influencing financial literacy. Students who were Sotho tend to have lower levels of financial literacy and the Pearson Chi-square test indicated a statistically significant difference between finance respondents, who were Sotho compared to non-finance-related respondents. More finance students, 46.2% are Sotho-speaking compared to 26.7% of non-finance students.
When comparing the results of the finance and non-finance groups in the five different content areas the findings showed that only basic concepts and financial planning indicated a statistically significant difference between the finance compared to the non-finance group. The finance students tend to know more about basic concepts than the non-finance students and the non-finance students tend to know slightly more about financial planning than the finance students. No statistically significant difference was found in the results of the finance compared to the non-finance group for the content areas of savings and borrowing, markets and instruments and insurance.

Finance students might be more financially literate and know more about basic concepts than non-finance students as they receive more exposure to financial aspects through their studies. Because they are studying in a finance-related field they are naturally more interested and read more about financial matters than students from a non-finance field. Non-finance students on the other hand might know more about financial planning due to having more work experience.

5.2.4 Perceptions and financial literacy

Question 4 asked students for their perceptions on their own financial literacy levels. The majority of both the finance and non-finance students considered themselves to be moderately financially literate. In contradiction with student perceptions that they are moderately financially literate, the financial literacy score achieved by both groups was low. These findings are in line with previous research, which indicate that students consider their financial literacy levels to be higher than they actually are (Policy brief, July 2006). As students thus think they are moderately financially literate, they may not make an effort to increase their financial literacy levels or they may think that they do not need financial education when the results indicate that they do.

5.3 LIMITATIONS

As a result of the limited scope and research methods used, the findings of this study have to be considered in light of the limitations presented below. The results and findings cannot be generalised to all South African Universities or other University of Johannesburg campuses as they are university- and campus-specific. Although the sample was representative of the population, the results could also have varied slightly if different diploma groups were selected. This study was a cross-sectional study with data taken at a specific time and all generalisations drawn should be limited to the population
sampled or cautiously applied to groups and settings that closely resemble those included in this study. Many of the demographic and background characteristics identified by previous research to influence financial literacy could not be analysed as there was not enough variation or adequate representation within the total sample. For example, the demographics of the majority of finance students on the Bunting Road campus were black and therefore the influence of race on financial literacy could not be tested. Nor could the honesty of respondents be guaranteed.

Although not all the Jump$tart coalition (2008) questionnaire questions were included in this research questionnaire, all of the content areas and the required finance concepts were however still tested. Due to the lack of a standardised financial literacy questionnaire, comparison will be difficult with other studies that did not incorporate the Jump$tart questionnaire. The majority of previous research does not provide standard financial literacy measurement criteria and it is unclear how much respondents should score in order to be classified as financially literate. Furthermore the questionnaire did not provide students with an “I do not know” option as an answer to any of the questions and all omitted questions were treated as incorrect in terms of the data analysis. The questionnaire did not ask students whether they had Mathematics at school or what their mark was. Low marks or not having taken the subject may also have influenced financial literacy levels (Samy et al., 2007).

5.4 RECOMMENDATIONS FOR FUTURE RESEARCH

An opportunity for future research would be to develop a standardised financial literacy definition, content areas and clear, consistent criteria when measuring financial literacy to enable comparison studies. The current study also only examined the 2011 third-year diploma students from the University of Johannesburg, Bunting Campus. Future research could expand this study to include different South African universities and campuses, as well as degree students and students graduating after 2011. Furthermore, various studies have examined the demographic and background characteristics that influence financial literacy and yet there have been some contradicting findings. It could be worth exploring these demographic and background characteristics that influence financial literacy further and why they influence financial literacy. Research has also shown that financial literacy improves with financial education, but further research is required to test whether financial literacy improves financial behaviour. Research on behavioural finance should thus also be expanded to better understand the link between knowledge and behaviour. Studies have also shown that numeracy skills influence financial literacy levels (Samy et al., 2007).
and future studies could explore the link between Mathematics marks and financial literacy.

5.5 CONCLUSION

This study provides insight into the financial literacy levels of a sample of third-year diploma students in the South African context. Although the majority of students thought it to be very important for diploma graduates to be financially literate once they graduate, the results of the study indicate financial literacy levels of the overall sample to be low. Students obtained the worst results in the savings and borrowings section and achieved the best results in the basic concepts section of the content areas of financial literacy.

When considering the impact of demographic factors on financial literacy levels it was found that students whose parents paid for their studies were more likely to possess higher levels of financial literacy than the upper quartile, and students whose studies were funded through a NSFAS loan and/or were Sotho were more likely to possess lower levels of financial literacy than the lower quartile.

When considering the impact of the field of study on financial literacy levels it was found that on average the finance-related group was marginally more financially literate than the non-finance group. When comparing the results of the two groups in the five different content areas the findings showed that only basic concepts and financial planning indicated a statistically significant difference between them. The finance students tended to know more about basic concepts than the non-finance students and the non-finance students tended to know slightly more about financial planning than the finance students.

The results further indicate that although financial literacy levels were low, the majority of students considered themselves to be moderately financially literate and thought they did not need financial education. Financial literacy through financial education is especially important for them to have the ability to make informed financial decisions as these decisions could affect them for the rest of their lives. Knowing that these university students have low levels of financial literacy, the question arises as to what can or needs to be done to increase financial literacy and would students be more financially literate if they were presented with financial education. Using these questions, researchers, politicians, and other stakeholders could work together to increase financial literacy. For example, they could include a personal finance course as part of the curriculum of all high school or university students. Many students fund their studies with loans and debt literacy could be particularly valuable as part of the personal finance curriculum. This will equip students with a better chance at succeeding in today’s increasingly complicated
economy. Just as AIDS prevention/education is a priority and at the forefront of awareness campaigns in South Africa, so should be financially literacy. Merely being financially literate however is not enough. Individuals also require discipline and self-control in order to change their financial behaviour.
BIBLIOGRAPHY


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Weekend Argus Personal finance newspaper. (July 2011).


Appendix 1: Financial literacy questionnaire

Department of Finance and Investment Management
Faculty of Economic and Financial Sciences

Dear Third year National Diploma student

As part of my Masters studies in Financial Management, I am conducting research to investigate the financial literacy of third year diploma students at the UJ. The study forms part of a larger project on financial literacy conducted within the Department of Finance and Investment Management and has been approved by the Faculty Research Ethics Committee. The main aims of this particular study are to investigate the financial literacy of students who are about to embark on their careers and to investigate student needs in terms of a personal finance course. I kindly request you to take part in this study by completing the attached questionnaire. Although your participation is of the utmost importance, your participation is entirely voluntary and your response is anonymous. Should you be so kind as to participate please be assured that all information supplied by you will be treated as confidential at all times. Information obtained from this survey will only be used in a summary format.

The questionnaire consists of 2 sections and will take approximately 20-30 minutes to complete. Please answer all questions as honestly as possible and do not discuss your responses with fellow students as it may result in biased results.

Should you have any queries or comments regarding this survey and how the information will be used, you are welcome to discuss it with me.

Kind regards

Miss M. Botha
FAC11A1/FAC11B1 lecturer
Tel: 011 559 1225
Office: 13F Library
Section A: About yourself

Please answer the questions by circling the number corresponding to your response or writing down your answer in the space provided.

1. What is your gender?
   - Male 1
   - Female 2

2. What is your age category?
   - 18 – 20 1
   - 21 – 23 2
   - 24 – 25 3
   - Older than 25 4

3. Which one of the following languages do you mostly speak at home?
   - Afrikaans 1
   - English 2
   - French 3
   - Nguni (Zulu, Xhosa, Swati or Ndebele) 4
   - Portuguese 5
   - Sotho (Northern Sotho, Sesotho or Setswana) 6
   - Venda 7
   - Tsonga 8
   - Other (please specify) 9

4. What is your race? (optional)
   - Asian 1
   - Black 2
   - Coloured 3
   - White 4
   - Other (please specify) 5

5. What is your marital status?
   - Single 1
   - Married 2
   - Divorced or separated 3
   - Engaged or living together 4
   - Widowed 5
6. How many biological children do you have?

<table>
<thead>
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</tr>
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<tbody>
<tr>
<td>1</td>
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<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4 or more</td>
<td>5</td>
</tr>
</tbody>
</table>

7. Where do you stay during the academic year?

<table>
<thead>
<tr>
<th>At home with parents</th>
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</tr>
</thead>
<tbody>
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<td>At a university residence on campus</td>
<td>2</td>
</tr>
<tr>
<td>Shared student accommodation off campus</td>
<td>3</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>4</td>
</tr>
</tbody>
</table>

8. How many years of full or part-time work experience do you have?

<table>
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<tr>
<td>1 year part-time</td>
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</tr>
<tr>
<td>2 years part-time</td>
<td>3</td>
</tr>
<tr>
<td>3 years part-time</td>
<td>4</td>
</tr>
<tr>
<td>4 or more years part-time</td>
<td>5</td>
</tr>
<tr>
<td>1 year full-time</td>
<td>6</td>
</tr>
<tr>
<td>2 years full-time</td>
<td>7</td>
</tr>
<tr>
<td>3 years full-time</td>
<td>8</td>
</tr>
<tr>
<td>4 or more years full-time</td>
<td>9</td>
</tr>
</tbody>
</table>

9. What is the highest level of schooling your father completed?

| Did not complete high school | 1 |
| Completed high school | 2 |
| Diploma graduate | 3 |
| Degree graduate or higher | 4 |
| I do not know | 5 |

10. What is the highest level of schooling your mother completed?

| Did not complete high school | 1 |
| Completed high school | 2 |
| Diploma graduate | 3 |
| Degree graduate or higher | 4 |
| I do not know | 5 |
11. Which diploma are you enrolled for?

<table>
<thead>
<tr>
<th>Diploma</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport Management (Faculty of Health Sciences)</td>
<td>1</td>
</tr>
<tr>
<td>Accounting (Faculty of Economic and Financial Sciences)</td>
<td>2</td>
</tr>
<tr>
<td>Architectural Technology (Faculty of Art, Design and Architecture)</td>
<td>3</td>
</tr>
</tbody>
</table>

12. Which of the following methods did you use to finance your studies for the diploma programme at the UJ?

<table>
<thead>
<tr>
<th>Method</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>I paid for it myself</td>
<td>1</td>
</tr>
<tr>
<td>My parents and/or family paid</td>
<td>2</td>
</tr>
<tr>
<td>I have a bursary</td>
<td>3</td>
</tr>
<tr>
<td>I have a sponsorship</td>
<td>4</td>
</tr>
<tr>
<td>NSFAS</td>
<td>5</td>
</tr>
<tr>
<td>Edu-loan</td>
<td>6</td>
</tr>
<tr>
<td>Bank loan</td>
<td>7</td>
</tr>
</tbody>
</table>

13. Do you have a bank account?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

14. Do you have a credit card?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

15. Have you ever attended or taken any personal finance courses?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
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</table>

16. To what extent do you consider yourself to be financially literate?

<table>
<thead>
<tr>
<th>Extent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>To no extent</td>
<td></td>
</tr>
<tr>
<td>To a small extent</td>
<td></td>
</tr>
<tr>
<td>To a moderate extent</td>
<td></td>
</tr>
<tr>
<td>To a large extent</td>
<td></td>
</tr>
<tr>
<td>Completely financially literate</td>
<td></td>
</tr>
</tbody>
</table>

Please justify your answer:

........................................................................................................................................................................................................................................
........................................................................................................................................................................................................................................

17. How important do you believe it is for a diploma graduate to be financially literate once they have completed their studies?

<table>
<thead>
<tr>
<th>Importance</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>Unimportant</td>
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<tr>
<td>Marginally important</td>
<td></td>
</tr>
<tr>
<td>Important</td>
<td></td>
</tr>
<tr>
<td>Very important</td>
<td></td>
</tr>
</tbody>
</table>
Section B

The questions in Section B are aimed at gauging your knowledge regarding finance and financial concepts. Please read each question carefully and think about the answer before you respond. Please answer each question honestly and to the best of your ability by circling the applicable letter. You do not need a calculator to answer any of the questions

You are once again assured that this is an anonymous survey.

1. Christina and Britney co-signed a loan agreement to borrow money for Britney’s studies. If Britney spends all the money, drops out of university and has no money to make the payments, what happens to the loan?
   a. Christina does not have to pay anymore, because Britney dropped out of university.
   b. Christina must continue paying her half of the monthly payment.
   c. Christina must pay the full monthly payment.
   d. Christina and the lender must renegotiate the terms of the loan.

2. If you receive 3% interest on a R50 000 investment and the inflation rate is 4% do you think if you withdrew the money in a year’s time you will be able to buy the same amount of goods as if you spent the R50 000 today?
   a. Yes
   b. No, you will be able to buy more.
   c. No, you will be able to buy less.

3. What is generally true about the relationship between insurance premiums and risk?
   a. The higher the risk, the higher the premium
   b. The higher the risk, the lower the premium
   c. The lower the risk, the higher the premium
   d. There is no relationship between premiums and risk.

4. Themba and Khaya work together in the finance department of the same company and earn the same pay. Khaya spends his free time taking work-related classes to improve his computer skills; while Themba spends his free time socializing with friends and working out at a fitness centre. After five years, what is likely to be true?
   a. Themba will make more money, because he is more social.
   b. Themba will make more money, because Khaya is likely to be laid off.
   c. Khaya will make more money, because he is more valuable to his company.
   d. Themba and Khaya will continue to make the same money.

5. Which of the following credit card users is likely to pay the MOST in finance charges per year, if they all charge the same amount per year on their cards?
   a. Thuli, who pays at least the minimum amount each month and more, when she has the money.
   b. Avika, who generally pays off her credit card in full but, occasionally, will pay the minimum when she is short of cash.
   c. Julia, who always pays off her credit card bill in full shortly after she receives it.
   d. Linda, who pays the minimum amount each month.
6. Being financially literate can help you
   a. avoid being victimised by financial scams.
   b. buy the right kind of insurance to protect you from catastrophic risk.
   c. learn the right approach to invest for your future needs.
   d. lead a financially secure life through forming healthy spending habits.
   e. do all of the above.

7. Which of the following statements is NOT TRUE about ATMs (automatic teller machines)?
   a. You can generally get cash 24 hours-a-day.
   b. You can generally obtain information concerning your bank balance at an ATM machine.
   c. You are charged the same fee at all ATM’s.
   d. You must have a bank account to have an ATM Card.

8. If each of the following persons had the same amount of take home pay, who would need the greatest amount of life insurance?
   a. An elderly retired man, with a wife who is also retired.
   b. A young married man without children.
   c. A young single woman with two young children.
   d. A young single woman without children.

9. Personal financial planning involves
   a. establishing an adequate financial record keeping system.
   b. developing a sound yearly budget of expenses and income.
   c. minimising taxes and insurance expenses.
   d. preparing plans for future financial needs and goals.
   e. examining your investment portfolios to maximise returns.

10. If you have a R1 000 in your savings account and earn 10% interest compounded annually, assuming there are no charges and you do not withdraw any money from the account, how much will be in the account at the end of 2 years?
   a. Less than R1 200
   b. R1 200
   c. More than R1 200

11. Jay and Zee are young men. Each has a good credit history. They work at the same company and make approximately the same salary. Jay has borrowed R6 000 to take a foreign vacation. Zee has borrowed R6 000 to buy a car. Who is likely to pay the LEAST in finance charges?
   a. Zee will pay less because the car is collateral for the loan.
   b. They will both pay the same because the rate is set by law.
   c. Jay will pay less because people who travel overseas are better risks.
   d. They will both pay the same because they have almost identical financial backgrounds.
12. James went to the grocery store to buy a box of cereal. The type of cereal he liked came in three different brands and three different size boxes. To select the brand and the box with the lowest unit cost, he should look at the…
   a. largest cereal box on the shelf.
   b. price per kg of cereal in each box.
   c. most popular brand of cereal.

13. If other factors remain constant, the Rand value of an American fund will be
   a. higher if the Rand’s value rises against that of the American dollar.
   b. lower if the Rand’s value rises against that of the American dollar.
   c. unchanged if the American dollar’s value rises against that of the Rand.
   d. lower if the American dollar’s value rises against that of the Rand.

14. Inflation can cause difficulty in many ways. Which group would have the greatest problem during periods of high inflation that last several years?
   a. Older, working couples saving for retirement
   b. Older people living on fixed retirement income
   c. Young couples with no children who both work
   d. Young working couples with children

15. Many young people receive health insurance benefits through their parents. Which of the following statements is true about health insurance coverage?
   a. You are covered by your parents’ insurance until you marry, regardless of your age.
   b. If your parents become unemployed, your insurance coverage may stop, regardless of your age.
   c. Young people don’t need health insurance because they are so healthy.
   d. You continue to be covered by your parents’ insurance as long as you live at home, regardless of your age.

16. Before you went on holiday to America you exchanged rand for dollars at an exchange rate of R6.50 : $1. When you returned from your holiday, you still had some dollars left and exchanged it back to rand at an exchange rate of $1 : R6.45.
   a. You made a profit because the exchange was higher.
   b. You made a loss because the exchange was lower.
   c. You made a profit because the exchange was lower.

17. Which of the following statements is true?
   a. Banks and other lenders share the credit history of their borrowers with each other and are likely to know of any loan payments that you have missed.
   b. People have so many loans it is very unlikely that one bank will know your history with another bank.
   c. Your bad loan payment record with one bank will not be considered if you apply to another bank for a loan.
   d. If you missed a payment more than 2 years ago, it cannot be considered in a loan decision.
18. Rob and Mary are the same age. At age 25 Mary began saving R2,000 a year while Rob saved nothing. At age 50, Rob realized that he needed money for retirement and started saving R4,000 per year while Mary kept saving her R2,000. Now they are both 75 years old. Who has the most money in his or her retirement account?
   a. They would each have the same amount because they put away exactly the same.
   b. Rob, because he saved more each year.
   c. Mary, because she has put away more money.
   d. Mary, because her money has grown for a longer time at compound interest.

19. Your net worth is
   a. the difference between your income and expenditure.
   b. the difference between your assets and liabilities.
   c. the difference between your cash inflow and outflow
   d. the difference between your bank borrowings and savings.

THANK YOU FOR YOUR PARTICIPATION
Appendix 2: Jump$tart coalition (2008) survey of personal financial literacy among college students

Part 1 - 31 Jump$Start Questions

1. Inflation can cause difficulty in many ways. Which group would have the greatest problem during periods of high inflation that last several years?
   a.) Older, working couples saving for retirement.
   b.) Older people living on fixed retirement income.
   c.) Young couples with no children who both work.
   d.) Young working couples with children.

2. Which of the following is true about sales taxes?
   a.) The national sales tax percentage rate is 6%.
   b.) The federal government will deduct it from your paycheck.
   c.) You don’t have to pay the tax if your income is very low.
   d.) It makes things more expensive for you to buy.

3. Rebecca has saved $12,000 for her college expenses by working part-time. Her plan is to start college next year and she needs all of the money she saved. Which of the following is the safest place for her college money?
   a.) Locked in her closet at home.
   b.) Stocks.
   c.) Corporate bonds.
   d.) A bank savings account.

4. Which of the following types of investment would best protect the purchasing power of a family’s savings in the event of a sudden increase in inflation?
   a.) A 10-year bond issued by a corporation.
   b.) A certificate of deposit at a bank.
   c.) A twenty-five year corporate bond.
   d.) A house financed with a fixed-rate mortgage.

5. Under which of the following circumstances would it be financially beneficial to you to borrow money to buy something now and repay it with future income?
   a.) When you need to buy a car to get a much better paying job.
   b.) When you really need a week vacation.
   c.) When some clothes you like go on sale.
   d.) When the interest on the loan is greater than the interest you get on your savings.
6. Which of the following statements best describes your right to check your credit history for accuracy?

a.) Your credit record can be checked once a year for free.
b.) You cannot see your credit record.
c.) All credit records are the property of the U.S. Government and access is only available to the FBI and Lenders.
d.) You can only check your record for free if you are turned down for credit based on a credit report.

7. Your take home pay from your job is less than the total amount you earn. Which of the following best describes what is taken out of your total pay?

a.) Social security and Medicare contributions.
b.) Federal income tax, property tax, and Medicare and Social Security contributions.
c.) Federal income tax, social security and Medicare contributions.
d.) Federal income tax, sales tax, and social security contribution.

8. Retirement income paid by a company is called:

a.) 401 (k).
b.) Pension.
c.) Rents and profits.
d.) Social Security.

9. Many people put aside money to take care of unexpected expenses. If Juan and Elva have money put aside for emergencies, in which of the following forms would it be of LEAST benefit to them if they needed it right away?

a.) Invested in a down payment on the house.
b.) Checking account.
c.) Stocks.
d.) Savings account.

10. David just found a job with a take-home pay of $2,000 per month. He must pay $900 for rent and $150 for groceries each month. He also spends $250 per month on transportation. If he budgets $100 each month for clothing, $200 for restaurants and $250 for everything else, how long will it take him to accumulate savings of $600.

a.) 3 months.
b.) 4 months.
c.) 1 month.
d.) 2 months.
11. Sara and Joshua just had a baby. They received money as baby gifts and want to put it away for the baby’s education. Which of the following tends to have the highest growth over periods of time as long as 18 years?

a.) A checking account.
b.) Stocks.
c.) A U.S. Govt. savings bond.
d.) A savings account.

12. Barbara has just applied for a credit card. She is an 18-year-old high school graduate with few valuable possessions and no credit history. If Barbara is granted a credit card, which of the following is the most likely way that the credit card company will reduce its risk?

a.) It will make Barbara’s parents pledge their home to repay Karen’s credit card debt.
b.) It will require Barbara to have both parents co-sign for the card.
c.) It will charge Barbara twice the finance charge rate it charges older cardholders.
d.) It will start Barbara out with a small line of credit to see how she handles the account.

13. Chelsea worked her way through college earning $15,000 per year. After graduation, her first job pays $30,000. The total dollar amount Chelsea will have to pay in Federal Income taxes in her new job will:

a.) Double, at least, from when she was in college.
b.) Go up a little from when she was in college.
c.) Stay the same as when she was in college.
d.) Be lower than when she was in college.

14. Which of the following best describes the primary sources of income for most people age 20-35?

a.) Dividends and interest.
b.) Salaries, wages, tips.
c.) Profits from business.
d.) Rents.

15. If you are behind on your debt payments and go to a responsible credit counseling service such as the Consumer Credit Counseling Services, what help can they give you?

a.) They can cancel and cut up all of your credit cards without your permission.
b.) They can get the federal government to apply your income taxes to pay off your debts.
c.) They can work with those who loaned you money to set up a payment schedule that you can meet.
d.) They can force those who loaned you money to forgive all your debts.
16. Rob and Mary are the same age. At age 25 Mary began saving $2,000 a year while Rob saved nothing. At age 50, Rob realized that he needed money for retirement and started saving $4,000 per year while Mary kept saving her $2,000. Now they are both 75 years old. Who has the most money in his or her retirement account?

a.) They would each have the same amount because they put away exactly the same
b.) Rob, because he saved more each year
c.) Mary, because she has put away more money
d.) Mary, because her money has grown for a longer time at compound interest

17. Many young people receive health insurance benefits through their parents. Which of the following statements is true about health insurance coverage?

a.) You are covered by your parents’ insurance until you marry, regardless of your age.
b.) If your parents become unemployed, your insurance coverage may stop, regardless of your age.
c.) Young people don’t need health insurance because they are so healthy.
d.) You continue to be covered by your parents’ insurance as long as you live at home, regardless of your age.

18. Don and Bill work together in the finance department of the same company and earn the same pay. Bill spends his free time taking work-related classes to improve his computer skills; while Don spends his free time socializing with friends and working out at a fitness center. After five years, what is likely to be true?

a.) Don will make more because he is more social.
b.) Don will make more because Bill is likely to be laid off.
c.) Bill will make more money because he is more valuable to his company.
d.) Don and Bill will continue to make the same money.

19. If your credit card is stolen and the thief runs up a total debt of $1,000, but you notify the issuer of the card as soon as you discover it is missing, what is the maximum amount that you can be forced to pay according to Federal law?

a.) $500
b.) $1000
c.) Nothing
d.) $50

20. Which of the following statements is NOT correct about most ATM (Automated Teller Machine) cards?

a.) You can generally get cash 24 hours-a-day.
b.) You can generally obtain information concerning your bank balance at an ATM machine.
c.) You can get cash anywhere in the world with no fee.

d.) You must have a bank account to have an ATM Card.

21. Matt has a good job on the production line of a factory in his home town. During the past year or two, the state in which Matt lives has been raising taxes on its businesses to the point where they are much higher than in neighboring states. What effect is this likely to have on Matt’s job?

a.) Higher business taxes will cause more businesses to move into Matt’s state, raising wages.
b.) Higher business taxes can’t have any effect on Matt’s job.
c.) Mark’s company may consider moving to a lower-tax state, threatening Matt’s job.
d.) He is likely to get a large raise to offset the effect of higher taxes.

22. If you have caused an accident, which type of automobile insurance would cover damage to your own car?

a.) Comprehensive.
b.) Liability.
c.) Term.
d.) Collision.

23. Scott and Eric are young men. Each has a good credit history. They work at the same company and make approximately the same salary. Scott has borrowed $6,000 to take a foreign vacation. Eric has borrowed $6,000 to buy a car. Who is likely to pay the lowest finance charge?

a.) Eric will pay less because the car is collateral for the loan.
b.) They will both pay the same because the rate is set by law.
c.) Scott will pay less because people who travel overseas are better risks.
d.) They will both pay the same because they have almost identical financial backgrounds.

24. If you went to college and earned a four-year degree, how much more money could you expect to earn than if you only had a high school diploma?

a.) About 10 times as much.
b.) No more; I would make about the same either way.
c.) A little more; about 20% more.
d.) A lot more; about 70% more.

25. Many savings programs are protected by the Federal government against loss. Which of the following is not?

a.) A U. S. Savings Bond.
b.) A certificate of deposit at the bank.
c.) A bond issued by one of the 50 States.
d.) A U. S. Treasury Bond.

26. If each of the following persons had the same amount of take home pay, who would need the greatest amount of life insurance?

a.) An elderly retired man, with a wife who is also retired.

b.) A young married man without children.

c.) A young single woman with two young children.

d.) A young single woman without children.

27. Which of the following instruments is NOT typically associated with spending?

a.) Debit card.

b.) Certificate of deposit.

c.) Cash.

d.) Credit card.

28. Which of the following credit card users is likely to pay the GREATEST dollar amount in finance charges per year, if they all charge the same amount per year on their cards?

a.) Jessica, who pays at least the minimum amount each month and more, when she has the money.

b.) Vera, who generally pays off her credit card in full but, occasionally, will pay the minimum when she is short of cash.

c.) Megan, who always pays off her credit card bill in full shortly after she receives it.

d.) Erin, who only pays the minimum amount each month.

29. Which of the following statements is true?

a.) Banks and other lenders share the credit history of their borrowers with each other and are likely to know of any loan payments that you have missed.

b.) People have so many loans it is very unlikely that one bank will know your history with another bank.

c.) Your bad loan payment record with one bank will not be considered if you apply to another bank for a loan.

d.) If you missed a payment more than 2 years ago, it cannot be considered in a loan decision.

30. Dan must borrow $12,000 to complete his college education. Which of the following would NOT be likely to reduce the finance charge rate?

a.) If he went to a state college rather than a private college.

b.) If his parents cosigned the loan.

c.) If his parents took out an additional mortgage on their house for the loan.

b.) If the loan was insured by the Federal Government.
31. If you had a savings account at a bank, which of the following would be correct concerning the interest that you would earn on this account?

a.) Earnings from savings account interest may not be taxed.

b.) Income tax may be charged on the interest if your income is high enough.

c.) Sales tax may be charged on the interest that you earn.

d.) You cannot earn interest until you pass your 18th birthday.