

**FINANCIAL LITERACY AMONG UNIVERSITY STUDENTS: EVIDENCE
FROM GHANA**

By

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of**

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DECLARATION

I hereby declare that this submission is my own work towards the award of the degree of Doctor of Philosophy (Finance) and that to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any degree of University, except where due acknowledgement has been made in the text.

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DEDICATION

This work is dedicated to my lovely wife, Akua Adwubi Mireku and my son for their
unflinching love, care, support and encouragement.

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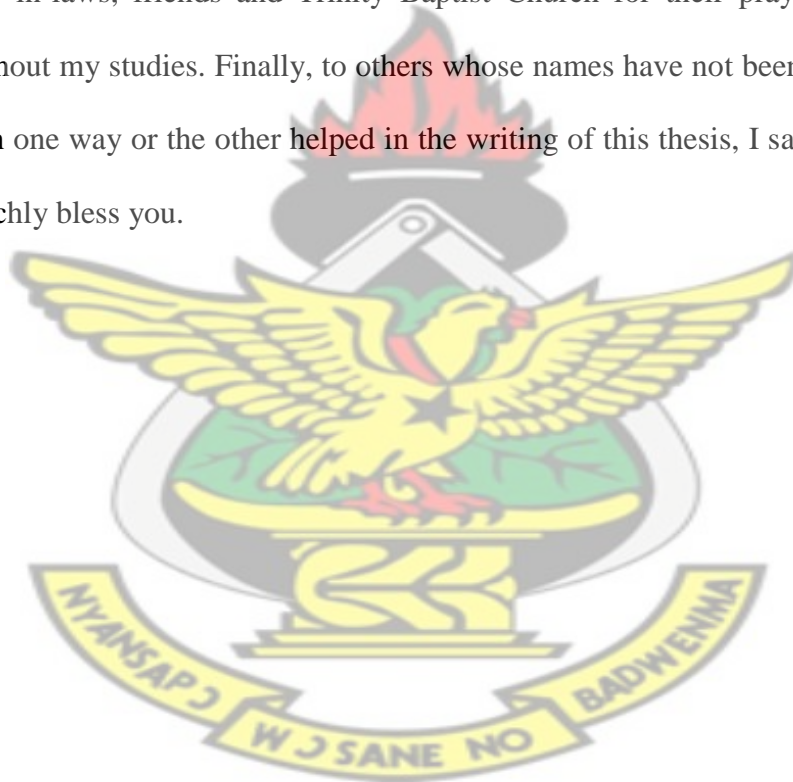


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LIST OF ABBREVIATIONS



ANZ	-Australia and New Zealand Banking Group
ASIC	- Australian Securities and Investment Commission
EFTPoS	- Electronic Funds Transfer at Point of Sale
CBF	- Commonwealth Bank Foundation
CEPA	- Centre for Policy Analysis
DFID	- Department for International Development
ERP	- Economic Recovery Programme
SAP	- Structural Adjustment Programme
IMF	- International Monetary Fund
EMN	- European Microfinance Network
FPSB	- Financial Planning Standards Board,
FINSAP	- Financial Sector Structural Adjustment Programme
GDP	- Gross Domestic Product
GhIPSS	- Ghana Interbank Payment and Settlement Systems
GSE	- Ghana Stock Exchange
GNA	- Ghana News Agency
NFLS	- National Financial Literacy Strategy
NIC	- National Insurance Commission
NBFI	- Non-Bank Financial Institutions
OMO	- Open Market Operations
OECD	- Organisation for Economic Co-operation and Development
SSNIT	- Social Security and National Insurance Trust
BOG	- Bank of Ghana
PACFL	- President's Advisory Council on Financial Literacy

ABSTRACT

In recent years, financial literacy has been recognized as a key skill that leads to healthy financial attitudes. Many studies around the world emphasize the importance of financial literacy in an ever increasing complex financial landscape. In Ghana, there can hardly be a better time to make a case for financial literacy considering the various economic and financial developments (the liberalization of financial markets, the proliferation of financial institutions and complex financial products etc.). In the face of these developments, it is important to assess if the younger generation especially students who are seen as the future leaders, movers and transformers of the economy have the necessary knowledge of financial concepts.

This study examines the level of financial literacy among university students in Ghana. A total of 3,932 students from twelve public and private universities in Ghana participated in this study, making it the first comprehensive study on the state of financial literacy among university students in Ghana. The framework used, assesses students' knowledge in money management, savings and borrowing, investments, and insurance. The study explores three themes. The first part of the study documents the level of financial literacy among the students. The second part of the study uses an econometric model to assess the determinants of financial literacy. The third part examines how a student's level of financial literacy influences his/her financial opinions, decisions and practices.

The study reveals that lack of financial knowledge is widespread among university students in Ghana. Students show moderate knowledge in savings and borrowing but low level of knowledge in other financial issues. The study also finds that gender,

work experience, subject of study, and mother's level of education are all important determinants of financial literacy among the students. Surprisingly, in this study, the lower the mother's level of education the higher the student's level of financial literacy. The results further shows that students with high financial literacy are more likely to have sound judgment about financial issues; make the right decision among financial alternatives and also have sound personal finance practices. Based on the findings of this study, a national policy on financial literacy is urgently needed in Ghana.



CHAPTER ONE

INTRODUCTION

1.0 BACKGROUND OF THE STUDY

The ability to manage personal finances has become increasingly important in today's world. People must plan for long-term investments for their retirement and children's education. They must also decide on short-term savings and borrowing for a vacation, education, emergency, a house, a car loan, and other items. Additionally, they must manage their own medical and life insurance needs (Chen and Volpe, 1998). According to Greenspan (2003) “today's financial world is highly complex when compared with that of a generation ago. Forty years ago, a simple understanding of how to maintain a current and savings account at local banks and savings institutions may have been sufficient. Now, consumers must be able to differentiate between a wide range of financial products and services, and providers of those products and services”.

Increasingly, individuals are in charge of their own financial security and are confronted with ever more complex financial instruments. However, there is evidence that many individuals are not well-equipped to make sound financial decisions (Lusardi, 2008). Studies in the United States of America have shown that people have inadequate knowledge of personal finances (KPMG, 1995; Oppenheimer Funds/GirlsInc., 1997). They fail to make correct decisions because they have not received a sound personal finance education (Hira, 1993; O'Neill, 1993). This has resulted in the increasing new buzz around Financial Literacy through conscious education. The Economist refers to this as the global crusade which is under way to teach personal finance to the masses so as to make them

literate in finance (Padoan, 2008). The need for financial literacy would continue to grow because individuals are expected to become more self-reliant (The Adult Financial Literacy Advisory Group, 2008).

Financial literacy is the ability to understand finance. More specifically, it refers to the set of skills and knowledge that allows an individual to make informed and effective decisions through their understanding of finances. Financial literacy is more than a measure of knowledge, it also reflects competency in actively managing one's own money from the point of accumulation to the point of consumption (Remund, 2010). Financial literacy seems more important now. Financial institutions, the student loan community, financial professionals and educators, and others from the United States of America and some European countries have identified personal financial management education as a priority (Cude et al, 2006).

Financial education can benefit consumers of all ages and income levels. For young adults who are just starting their working lives, it can provide basic tools for budgeting and saving so that expenses and debt can be kept under control. In a survey of 3,500 randomly selected Australian adults, Australia and New Zealand Banking Group (ANZ) (2008) emphasizes that most people overrate their financial capability and therefore financial education ensures that people have a realistic view of their own financial knowledge and accordingly approach investments and financial decisions with the caution that their particular level of understanding warrants. Financial education can help families acquire the discipline to save for a home of their own and/or for their children's education. It can help older workers ensure that they have enough savings for a comfortable retirement by providing them

with the information and skills to make wise investment choices with both their pension plans and any individual savings plans. Financial education can help those at lower income levels to make the most of what they are able to save and help them avoid the high cost charged for financial transactions by non-financial institutions. This means that one's level of financial literacy may affect his/her quality of life profoundly. It shapes the ability of one to provide for self and the family; invest in his/her future and the future of his/her children and contribute to the community as a good citizen. Financial literacy can promote sound personal financial management practices among which will enable them manage effectively hectic financial times. Financial literacy also reinforces behaviours such as timely payment of bills and avoidance of over-indebtedness that help consumers to maintain their access to loans in tight credit markets.

Several organizations have demonstrated an interest and commitment in improving the financial literacy of consumers for which college students are part. One such commitment in Ghana is the financial literacy week organised by the Ministry of Finance in conjunction with financial institutions. This is important for a number of reasons particularly when it comes to college students. Obviously, the financial decisions students make in college have an important influence on their financial situation after college. In addition, their financial situation in college can affect their academic performance. Lyons (2003) finds that one in three students reported his/her financial situation was "likely" or "somewhat likely" to affect the ability to complete a college degree. Bodvarsson and Walker (2004) report that after controlling for a wide variety of factors that affect college performance, students receiving at least partial coverage from their parents for tuition and books were more likely to fail their

courses, be placed on academic probation, and earn lower GPAs than self-financed students.

Students need financial skills perhaps more now than ever before. The reason being that the current developments in the financial market have focused renewed attention on the importance of people being both well informed about their financial option and discerning financial consumers-in short, being financially literate. Also, financial literacy can help to prepare consumers for tough financial times, by promoting strategies that mitigate risk such as accumulated savings, diversifying assets, and purchasing insurance. Research in financial literacy has typically related individuals' knowledge of economics and finance with their financial decisions related to savings, retirement planning, or portfolio choice. There is a cornerstone of economic theory: where you have well-informed consumers, you will find vigorous competition and efficient markets. In other words, financial literacy is essential for business, the economy, the country and in this age of globalization (Lusardi, 2013). Financial competence has become more essential as financial markets offer more complex choices and as the responsibility for saving and investing for the future (retirement) has shifted from government and employers onto individuals. As the credit crises of the recent past show, borrowing decisions are also critical (Lusardi and Tufano, 2009). Experts also generally agree that financial knowledge appears to be directly correlated with self-beneficial financial behaviour (Hilgert, Hogarth, and Beverly, 2003).

Understanding financial literacy among young people is essential for developing effective financial education programmes (Cameron et. al., 2014). It is therefore

crucial to research and find ways to improve the financial literacy competences of people especially students who are seen as the future generation of every country. For the purpose of this study, college students and university students are used to represent students in tertiary institutions pursuing a programme to obtain a first degree or beyond. For this matter, the words, college and university are used interchangeably.

1.1 PROBLEM STATEMENT

Savings and investment as well as insurance and money management are key ingredients that promote economic growth. In every economy, accumulated savings is the main source of capital stock which plays a crucial role in creating investment, production, and employment which eventually enhance economic growth. Every nation seeks to achieve high economic growth where the citizenry live more comfortably, have better standard of living than ever before and holding a better welfare supported by sound insurance policies and proper money management by the populace. To achieve the aim of economic growth, governments must implement programmes and policies to encourage savings so as to stimulate investment and production in their countries and the citizenry must have better understanding of these key ingredients that promote economic growth. What do university students know about saving, borrowing, investing, insurance or managing money? To promote economic growth in Ghana, this is a critical question that needs to be answered comprehensively, hence, the need for a financial literacy study.

Studies in the US have shown that university students are in danger of beginning a downward financial spiral of debt that they will not easily repay while in university

or after they have gained fulltime entry into the workplace (Henry et al, 2001; Joo et al, 2003). In Ghana, a report by the Financial Controller of the Social Security and National Insurance Trust (SSNIT) indicates that as of April, 2004, over 500 billion cedis in outstanding debts accrued under the SSNIT Students' loans. As a result of this debt phenomenon, stakeholders have argued that they do not see the importance of the loans granted to student since in their view most students misuse the money. Genuinely, some students need the loan for their sustenance and academic progression in school. The question here is: do students have the relevant knowledge in personal finance so as to make informed decisions regarding monies that come into their hand? Providing a vivid answer to this question makes this research vital.

Enhancing financial literacy is even essential in developing countries with low levels of formal education. Ironically, a search through literature suggests that there has been little research on this topic in developing countries for which Ghana is part. A search through literature revealed that studies and programmes on personal finance are very rare in Ghana. The only programme or activity on it is the annual financial literacy week organized by the ministry of finance and the banking industry. The contents of the week celebration were never addressed directly to young consumers. Results from the 2010 population census show that Ghana has a youthful population with 66.6% below 30 years. The mean age of Ghana's population is 24 years so it is very important that financial literacy research and programmes should target the youth in Ghana. There is the need to help the youth, specifically, students at the university level to improve their financial literacy level so as to have positive money management attitudes before they enter the job market. This will propel them to practice sound personal financial management as working adults. The realisation of

good financial behaviour is achieved through the development of knowledge and skills, which provides the basis for making informed decisions (Chen and Volpe, 1998). The financial habits students have while in college tend to carry on to their adult life. Consumers of which students are part must confront complicated financial decisions at a younger age in today's demanding financial environment, and financial mistakes made early in life can be costly. The better their financial literacy is when they leave college, the fewer financial hardships they may have in life (Grable and Joo, 1998). In this regard, to aid younger consumers, it is critical for researchers to explore how financially knowledgeable young adults are. Understanding the factors that contribute to students' acquisition of financial knowledge can help policy makers design effective interventions targeted at the young population, hence the need for this research.

1.2 OBJECTIVES OF THE STUDY

The purpose of this study is to provide evidence of finance literacy among university students in Ghana. To achieve this, the research is conducted around the following sub objectives:

1. To examine students understanding of and knowledge in money management, savings and borrowing, investment and insurance.
2. To examine whether some group of students are relatively more knowledgeable than others.
3. To examine how a student's knowledge influences his/her personal opinions and decisions on issues in finance.
4. To determine the avenues or channels through which students expect to learn or improve their financial knowledge.

1.3 RESEARCH QUESTIONS

Based on the above research problem and objectives, the following questions have been developed for the study:

1. How well do students understand general finance issues, savings and borrowing, insurance and investment?
2. What are the determinants of financial literacy among students?
3. What impact does financial literacy have on students' opinions, decisions and practices?
4. What avenues or channels do students expect to learn or improve their financial knowledge?

1.4 SIGNIFICANCE OF THE STUDY

Financial literacy is very important to the growth and development of every nation. The importance of personal finance decisions cannot be overemphasized because they have a direct impact on people's quality of life. There can hardly be a better time to make the case for economic and financial literacy considering the various economic and financial developments like: economic recovery programme and structural adjustment programme; the proliferation of financial institution and complex financial products; the oil discovery that is expected to move Ghana into a middle income country; etc. that have taken place in Ghana since independence. In the face of all these developments, it is important to empower the younger generation, especially students who are seen as the future leaders, movers and transformers of the economy with financial knowledge. The old adage goes “knowledge is power”. How can we give them the right financial knowledge?

It is very crucial to ascertain students' level of financial knowledge now so that we can design courses that will help close the financial knowledge gap. The university environment provides a perfect and conducive atmosphere for the young and the old who are pursuing different degrees on campus to receive sound financial education. Thus the intended final outcomes of the research will provide evidence of students' knowledge in personal finance for the development of guidelines for implementing an effective financial literacy programme so as to improve the quality of life of the people in Ghana. To the best of my knowledge, this is the first comprehensive study on financial literacy of university students in Ghana. Results would provide baseline data from which further progress can be assessed.

It also adds to the available literature in the field and helps create the necessary atmosphere for future studies in Ghana as well as other developing countries. This research could also be a source of useful information for curriculum development on personal finance by Universities in Ghana. The useful recommendations that are provided below can be adopted to improve students' personal finance capabilities of which in the long-run will affect the economy at large.

Results of the study are of interest to policymakers concerned with financial well-being and the balance between personal and institutional responsibility. Targeting financial education programmes to the groups that need them most could increase their effectiveness. Information on factors that influence the accumulation of financial knowledge reported in this study can aid policymakers trying to help younger consumers navigate today's increasingly complex financial marketplace. Understanding the factors that contribute to or detract young consumers from the

acquisition of financial knowledge can help policymakers design effective interventions targeted at the young population.

This research adds to the Organisation for Economic Co-operation and Development (OECD), the Department for International Development (DFID), and the World Bank programme in promoting financial literacy in developing and emerging markets because of the positive direct impact this can have on access to finance and savings, which in turn support livelihoods, economic growth, sound financial systems, and poverty reduction.

1.5 SCOPE AND LIMITATIONS OF STUDY

The study covered 12 universities in Ghana. A sample size of 5000 students was used for the study with a response rate of 79%. Students from six public and six private universities were considered in the study. The study is limited by the inability to cover all universities in Ghana. However, this limitation would not have significant impacts on the validity, purpose and findings of the study because the sample size is large enough.

1.6 RESEARCH METHODOLOGY

This study used a comprehensive questionnaire designed to cover major aspects of personal finance. It included financial literacy on general knowledge, savings and borrowing, insurance, and investments. The survey was used in a pilot study to refine the instrument and then re-administer for the main work. The responses from each participant were used to calculate the mean percentage of correct scores for each question, section, and the entire survey. This is consistent with the existing literature

(Danes and Hira, 1987; Volpe, Chen, and Pavlicko, 1996). The mean percentage of correct scores is grouped into (1) 80% and above, (2) 60% to 79%, and (3) below 60%. The first category represents a relatively high level of knowledge. The second category represents a medium level of knowledge. The third category represents a relatively low level of knowledge.

Previous research suggests that levels of financial literacy vary among subgroups of students (Volpe, Chen, and Pavlicko, 1996). This study provided further evidence of the differences using analysis of variance (ANOVA) and Levene test for equality in means. The differences were further analysed using logit regression models. The participants were classified into two subgroups using the median percentage of correct answers of the sample (Volpe, Chen, and Pavlicko, 1996). Students with scores higher than the sample median were classified as those with relatively more knowledge. Students with scores equal to or below the median were classified as students with relatively less knowledge. This dichotomous variable was then used in the logit regression as the dependent variable. The independent variables in the logit regression included variables such as academic discipline, level of student, gender, work experience, age, income, family characteristics, residential characteristics and financial market participation.

1.7 ORGANIZATION OF THE STUDY

This study is organized into nine chapters. Chapter one, which is the introduction, provides a background to the study. The chapter also presents the statement of the problem, objectives of the study, relevance of the study, the research questions and the scope and limitations of the study. Chapter two contains detailed review of the

relevant literature on financial literacy. Chapter three covers the hypothesis development while chapter four examines developments in Ghana that call for the need for a research in financial literacy. Chapter five gives an overview of the methodology and the actual process through which the study was carried out. The findings and results of the analysis of the data gathered are presented and discussed in Chapters six, seven and eight. Finally, chapter nine presents the summary, recommendations appropriate for policy direction and future research and conclusion.



CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter presents a review of relevant related literature on financial literacy. In this direction, the chapter provides broad discussion and review of the meaning of various terminologies relating to financial literacy and empirical evidence by prior researchers regarding the objectives of the study.

2.1 MEANING AND OVERVIEW OF FINANCIAL LITERACY

Financial literacy is gaining the attention of various stakeholders including financial institution, government agencies, consumers, international bodies such as Organisation for Economic Co-operation and Development (OECD), World Bank and other organizations. In this regard, various definitions exist in literatures in relation comes to the meaning of financial literacy. Basically, the term financial literacy refers to the ability of an individual to make informed judgments and decisions regarding the use and management of money (Australian Securities and Investment Commission (ASIC), 2003; Noctor et al, 1992; Godsted and McCormick, 2007). It can be extended as “enabling people to make informed and confident decisions regarding all aspects of their budgeting, spending and savings and their use of financial products and services, from everyday banking through to borrowing, investing and planning for the future” (Ray Morgan Research, 2003). According to Worthington (2006) financial literacy can be defined broadly or narrowly. A broad definition of financial literacy adopts an ‘understanding of economics’ and how economic conditions and circumstances affect household decisions. A narrow

definition of financial literacy focuses on basic money management tools such as budgeting, saving, investing and insurance (Gallery, Newton and Palm, 2011).

The President's Advisory Council on Financial Literacy in the US (PACFL, 2008), defined financial literacy as the ability to use knowledge and skills to manage financial resources effectively for a lifetime for one's financial well-being. It is the knowledge of basic economic and financial concepts, as well as the ability to use that knowledge and other financial skills to manage financial resources effectively for a lifetime of financial well-being. Financial literacy skills enable individuals to navigate the financial world, make informed decisions about their money and minimize their chances of being misled on financial matters (Beal and Delpachitra, 2003; Commonwealth Bank Foundation, 2004b). It refers to the set of skills and knowledge that allows an individual to make informed and effective decisions through their understanding of finances (Institute of Economic Affairs, 2012).

OECD (2005) reports that financial literacy is the combination of consumers'/investors' understanding of financial products and concepts and their ability and confidence to appreciate financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being. Financial literacy has been described as the ability to make use of financial education (Wiener et al., 2005). Also the centre for financial inclusion defines financial literacy as "the ability to understand how to use financial products and services and how to manage personal, household, or micro-enterprise finances over time".

Also the definition of Financial Literacy used by the New America foundation and cited by Vitt et al. (2000) is “the ability to read, analyse, manage and write about the personal financial conditions that affect material well-being. 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’s financial decisions, including events in the general economy” (Parrish and Servon, 2006).

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As observed by Hogarth (2002) there is a consistent theme running through most definitions of financial literacy including:

- Being knowledgeable, **educated and informed** on the issues of money and assets, banking, investments, credit, insurance and taxes;
- Understanding the **basic concepts** underlying the **management** of money and assets (e.g. **the time value of money in investments and the pooling of risks in insurance**);
- Using that **knowledge and understanding to plan and implement financial decisions**.

Critically looking at the **various definition of financial literacy** given above, it is evident that financial literacy is related to the following terms: Personal Finance; Financial Education; and Financial Capability. These are core issues various authors talk about when they try to explain financial literacy. These issues are reviewed below.

2.1.1 Personal Finance

Personal Finance involves all financial decisions and activities of an individual, including budgeting, insurance, savings, investing, debt servicing, mortgages and more. Personal financial decisions may involve paying for education, financing durable goods such as real estate and cars, buying insurance, e.g. health and property insurance, investing and saving for retirement (Lusardi and Mitchell, 2011). Central to personal finance is personal financial planning. The six key areas of personal financial planning, as suggested by the Financial Planning Standards Board include financial position, Adequate protection, Tax Planning, Investment and Accumulating goal, Retirement Planning and Estate Planning (FPSB, 2011).

2.1.1.1 Financial Position

It is concerned with understanding the personal resources available by examining net worth and household cash flow. Net worth is a person's balance sheet, calculated by adding up all assets under that person's control, minus all liabilities of the household, at one point in time. Household cash flow totals up all the expected sources of income within a year, minus all expected expenses within the same year. From this analysis, the financial planner can determine to what degree and in what time the personal goals can be accomplished (FPSB, 2011; Worthington, 2006).

2.1.1.2 Adequate Protection

According to FPSB (2011), it involves the analysis of how to protect a household from unforeseen risks. These risks can be divided into liability, property, death, disability, health and long term care. Some of these risks may be self-insurable, while most will require the purchase of an insurance contract. Determining how

much insurance to get, at the most cost effective terms requires knowledge of the market for personal insurance. Business owners, professionals, athletes and entertainers require specialized insurance professionals to adequately protect themselves. Since insurance also enjoys some tax benefits, utilizing insurance investment products may be a critical piece of the overall investment planning (FPSB, 2011; Lusardi and Mitchell, 2008)

2.1.1.3 Tax Planning

Managing taxes is not a question of one's will to pay taxes, but when and how much taxes are to be paid. Government gives many incentives in the form of tax deductions and credits, which can be used to reduce the lifetime tax burden (FPSB, 2011; Mandell, 1998). Most modern governments use a progressive tax. Typically, as one's income grows, a higher marginal rate of tax must be paid. Understanding how to take advantage of the myriad tax breaks when planning one's personal finances can make a significant impact.

2.1.1.4 Investment and Accumulation Goals

This entails planning how to accumulate enough money for large purchases, and life events is what most people consider to be financial planning (FPSB, 2011). Major reasons to accumulate assets include, purchasing a house or car, starting a business, paying for education expenses, and saving for retirement. Achieving these goals requires projecting what they will cost, and when you need to withdraw funds (Huston, 2010). A major risk to the household in achieving their goal is the rate of price increases over time, or inflation. Using net present value calculators, the financial planner will suggest a combination of asset earmarking and regular savings

to be invested in a variety of investments. In order to overcome the rate of inflation, the investment portfolio has to get a higher rate of return, which typically will subject the portfolio to a number of risks. Managing these portfolio risks is most often accomplished using asset allocation, which seeks to diversify investment risk and opportunity. This asset allocation will prescribe a percentage allocation to be invested in stocks, bonds, cash and alternative investments (FPSB, 2011; Willis, 2008). The allocation should also take into consideration the personal risk profile of every investor, since risk attitudes vary from person to person.

2.1.1.5 Retirement Planning

It is the process of understanding how much it costs to live on retirement and coming up with a plan to distribute assets to meet any income shortfall. Methods for retirement plan include taking advantage of government allowed structures to manage tax liability including: individual structures, or employer sponsored retirement plans (FPSB, 2011; Mandell and Klein, 2009).

2.1.1.6 Estate Planning

In most developed countries, it involves planning for the disposition of one's assets after death. Typically, there is a tax due to the state or federal government on your death. Avoiding these taxes would mean that more of your assets will be distributed to your heirs. You can leave your assets to family, friends or charitable groups (FPSB, 2011; Moore, 2003).

Most of the items discussed under personal financial planning are used in financial literacy test. One's understanding of personal finance is core in appreciating the concept of financial literacy.

2.1.2 Financial Education

According to OECD (2005) "Financial education is the process by which individuals improve their understanding of financial products and concepts; and through *information, instruction* and/or objective *advice* develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices to know where to go for help, and to take other effective actions to improve their financial well-being.

In a nutshell, it is where information involves providing consumers with facts, data and specific knowledge to make them aware of financial opportunities, choices and consequences; instruction involves ensuring that individuals acquire the skills and ability to understand financial terms and concepts, through the provision of training and guidance; and advice involves providing consumers with counsel about generic financial issues and products so that they can make the best use of the financial information and instruction they have received.

Financial education is the process by which people improve their understanding of financial products, services and concepts, so they are empowered to make informed choices, avoid pitfalls, know where to go for help and take other actions to improve their present and long-term financial well-being. As noted by the PACFL (2008),

financial education is a process through which financial knowledge and skills are gained, rather than the knowledge and skills themselves.

Financial institutions, the student loan community, financial professionals and educators, and others have identified personal financial management education as a priority in US educational institutions (Cude et. al., 2006). Financial education can benefit consumers of all ages and income levels. For young adults just beginning their working lives, it can provide basic tools for budgeting and saving so that expenses and debt can be kept under control. Financial education can help families acquire the discipline to save for a home of their own and/or for their children's education. It can help older workers ensure that they have enough savings for a comfortable retirement by providing them with the information and skills to make wise investment choices with both their pension plans and any individual savings plans. Financial education can help those at low income levels make the most of what they are able to save and help them avoid the high cost charged for financial transactions by non-financial institutions.

Financial education enhances and influence financial knowledge, attitudes, and behaviours (Ajzen and Fishbein, 1980; Varcoe and Wright, 1991; DeVaney, et al., 1996; Grable and Joo, 1998; NEFE, 1998). For instance, Fletcher et al. (1997) completed a pre and post assessment of financial knowledge, attitudes and behaviours to evaluate the effectiveness of Iowa State's personal finance workshops and found that participants had improved in knowledge, attitudes, and behaviours. Increased financial knowledge is also found to influence students' attitudes positively toward business in general and their ability to be wise consumers in

society (Langrehr, 1979). Hence, financial education should be considered a concept that promotes financial literacy.

2.1.3 Financial Capability

According to Liu et al. (2009) financial capability is the ability to display sound judgment when faced with actual financial decisions. Financial capability encompasses “people’s knowledge and skills to understand their own financial circumstances, along with the motivation to take action. The Scottish Government's 'Financial Capability Discussion Paper' (2010) defines financial capability as the motivation to efficiently manage finances and effect change in day-to-day management of finances. Thus, a financially capable person will be able to appreciate financial management and seek advice from professionals.

Financial capability plays an important part in a wider role in the ability of individuals to access financial services and support. Alongside income maximization, debt advice and measures to ensure access to affordable credit, improving financial capability should help people participate more fully in society and reduce poverty. Financially capable consumers plan ahead, find and use information, know when to seek advice and can understand and act on this advice, leading to greater participation in the financial services market.” (Her Majesty’s Treasury January 2007:19). Researches carried out mainly in developed countries have shown that financial literacy is an important component of sound financial decision making and can have important implications for financial behaviour (Despard and Chowa, 2014; Lusardi and Mitchell, 2011; Rutledge, 2010; Atkinson et al., 2007). Improved financial capability is a function of financial literacy.

For the purpose of this research, financial literacy will be defined as an individual understanding and knowledge of general money management, savings and borrowing, investment and insurance as well as the ability to use that knowledge to improve his/her financial opinions, make informed financial decisions and enhance his/her personal financial management practices.

2.2 IMPORTANCE OF FINANCIAL LITERACY

Several researches have demonstrated the importance of financial literacy (Danes and Hira, 1987; Grable and Joo, 1998; Kerkmann et al., 2000). Greenspan (2002) states that financial literacy can turn consumers into 'responsible' and 'empowered' market players, motivated and competent to engage in financial behaviours that increase their own welfare. A number of writers have noted that improving financial literacy can benefit all levels of the economy and will support the financial services sector; social and economic exclusion will also be reduced; spending power, innovation and competitiveness will increase and loan defaults will decrease (Currie, 2005).

According to OECD, DFID and World Bank (2009) financial literacy is especially important in our modern era for three main reasons. First, the recent financial crisis has reduced access to credit and increased its cost in many developing-country markets, just as it already has in the United States and Europe. Second, financial literacy can help to prepare consumers for tough financial times, by promoting strategies that mitigate risk such as accumulating savings, diversifying assets, and purchasing insurance. Third, financial literacy can reinforce behaviours such as

timely payment of bills and avoidance of over-indebtedness that help consumers to maintain their access to loans in tight credit markets.

Capuano and Ramsay (2011) listed a number of benefits of financial literacy to consumers, community and the broader economy. Below are some of the benefits:

2.2.1 Saving and Retirement Planning

Financially literate people have a greater capacity to save for retirement (Garman, 1997). This is achieved by financial efficiency which results in saving money, making an effort to set aside money and an enhanced ability to set realistic retirement goals and select suitable investments to realize those retirement goals. A better-informed consumer will save for the future, for retirement and for unforeseen circumstances and emergencies. A Survey, conducted by the Employee Benefit Research Institute (EBRI, 2010) in the United States, realized that financial literacy is useful in life stages where important decisions are made, and as such financial education at these stages can successfully alter behaviour relating to retirement planning and saving. Financially literate people were more inclined to save regularly, possess a savings account and pay off credit cards. Financial literacy increases students' likelihood to save, invest, get out of debt, spend less than they earn, and live on a budget (Bauer et al., 2000). Danes (1994) finds that a higher level of financial knowledge was positively correlated to a higher level and regular source of income as well as a higher savings rate.

2.2.2 Life Skills and Bargaining Power

The realisation of good financial behaviour is achieved through the development of knowledge and skills, which provides the basis for making informed decisions (Chen and Volpe, 1998). The financial habits students have while in college tend to carry on into adult life. The better their financial literacy is when they leave college, the fewer financial hardships they may have in life (Grable and Joo, 1998). A skilful and knowledgeable person with a good attitude is in the best position to make the most of life's opportunities and to budget and plan spending (Bell et al, 2009). The European Commission (2010) has recognized that financial literacy gives consumers greater bargaining power through understanding finance and terms in consumer contracts. Consumers can gain better deals and demand more from service providers. In light of the fact that contact with financial institutions is necessary for a normally productive and enjoyable life, the ability to understand financial institutions and the products they offer is an important benefit of financial literacy.

2.2.3 Financial Efficiency

Financial literacy results in financial efficiency (Capuano and Ramsay, 2011). Financial efficiency refers to the use of financial products and investing without waste and unnecessary cost. Financial literacy therefore gives consumers the ability to live more efficiently, without unnecessary cost and waste. Financial efficiency can include selecting the best value product on the market, and the lowest possible price on the market for a particular product or service. Financial efficiency is achieved by comparison shopping, an attribute of financially literate consumers. Comparison shopping leads to savings by purchasing the best value products. The European Commission (2010) noted that people who understand financial issues make better

choices of financial services for their particular needs. They are less likely to purchase products they do not need, be tied into products that they do not understand, or take risks that could drive them into financial difficulty. Financial literacy prevents students from making poor consumer decisions (Grable and Joo, 1998; Hayhoe et al., 2000). Increasing financial literacy is a way to financially empower people and improve their quality of life (Knapp, 1991; Voydanoff, 1990). Energy, thought, and time are spent pursuing money and limiting the unnecessary waste of money. Thus, when students gain more knowledge and more positive attitudes toward money, they make better decisions, which save resources and improve their situation (Knapp, 1991).

2.2.4 Activity in Financial Markets

Financially literate consumers have been seen to possess more financial products and be productive investors (Capuano and Ramsay, 2011). Limited financial market participation, or inertia, may be a consequence of low levels of financial literacy. Van Rooij, Lusardi and Alessie (2007) find that people with low levels of financial literacy are significantly less likely to hold shares and stocks. Financial literacy does not only enhance participation, but also encourages sound investment strategies such as diversification. The assumption is that financial illiteracy causes anxiety when dealing with financial products. Accordingly, financially illiterate people avoid financial products which are perceived to be difficult to understand. As a result, the optimal approach for a person who is financially illiterate is to abstain from market participation, and avoid purchasing costly products or borrowing. However, in the long term financial exclusion may be extremely costly and cause a person to miss the

benefits and opportunities offered by the financial system. Financial literacy can increase financial inclusion which eventually will promote economic growth.

A financially literate consumer will be more confident when making decisions about finance, thereby increasing participation in the market. Consumers benefit from investment in financial because their stock of financial knowledge allows them to increase the returns on their wealth (Jappelli and Padula, 2013). Financial literacy can influence the types of products selected, and the types of investments made. The fast moving nature of financial markets means that individuals who understand product features and market environments are best placed to make an informed decision about their financial needs. This also leads to consumers avoiding unnecessary costs. An improved understanding of financial products and services develops greater financial confidence in consumers, who select the most appropriate products and organise those products (such as by diversification strategies, for example) in the best possible way.

2.2.5 Consumer Rights and Regulatory Intervention

Education in consumer laws and fraudulent schemes is a component of financial literacy. This knowledge gives people the tools and understanding to identify and avoid fraudulent schemes and reduce the severity of falling victim to such schemes. This translates into lower levels of regulatory intervention because consumers are better able to take care of themselves. Kempson (2010) writes that a financially capable person knows where to go for help.

2.2.6 Greater Competition, Innovation and Quality Products

According to Capuano and Ramsay (2011), Alessie, Van Rooij and Lusardi (2011), Worthington (2006) and Braunstein and Welch (2002) financially literate consumers are more financially efficient. Seeking and purchasing better, cheaper and more appropriate products and services can drive efficiencies in the financial industry. This leads to increased competition, better quality products and greater innovation and diversity in the market. Knowledge of consumer rights and contracts also allows consumers to evaluate products more carefully and as a result demand more from suppliers. Also, Hall (2008) promotes the view that financial literacy bolsters market discipline, which is the collective consumer influence on financial institutional behaviour, making these institutions 'more likely to operate in a safe, sound and efficient manner'. As a result, better informed consumers are collectively able to influence the ways that financial institutions are managed, and thus reward those institutions which offer better quality products and services, at the best value.

2.2.7 Coverage of Risk

Financially literate consumers have a greater appreciation of risk, and therefore the problem of under coverage of risk (for example, underinsurance) is not prevalent in markets in which people are financially educated (EMN, 2010). A greater appreciation of risk translates into the purchasing of appropriate insurance and careful investment decisions, therefore reducing the burden on the financial system from under coverage of risk and underinsured ventures, reducing costly insolvencies, bankruptcies and business inefficiency. It is possible that an increased level of financial literacy could lead to more entrepreneurial activity and a decrease in new venture failures.

2.2.8 Self-Funding of Retirement

The increased saving and retirement planning resulting from increased financial literacy also has positive effects on the financial system and economy, by reducing the burden on the state to provide pensions and government funding for people experiencing financial hardship (Capuano and Ramsay, 2011). Instead, people are more willing to build wealth during their working lives to fund retirement.

2.2.9 Financial Inclusion

Greater financial understanding and knowledge allows those members of society who are otherwise excluded from the main stream financial sector to get the opportunity to use financial products and services (Capuano and Ramsay, 2011). For example, knowledge of a term deposit may prompt a person to earn more interest, whereas no knowledge of the existence of such a product will result in less interest being earned and an opportunity lost. Financial literacy provides the understanding required to access particular products which allows people to borrow and also become financially active. The European Commission (2010) notes that those who have received some form of education on financial matters are far more likely to be engaged with the mainstream financial industry, and not have to rely on higher-cost and higher risk fringe providers or loan sharks. It can encourage citizens, even those on low incomes, to plan and save some part of their incomes. It can help to develop the skills to form the financiers of tomorrow.

2.2.10 Understanding of Government Financial Policies

Financially literate people are also able to better assess financial policies of governments and the actions of financial institutions. This creates better informed

citizens who are able to make sense of policy reform to the financial sector. Financial literacy promotes understanding and acceptance of important political reforms, such as health care or pension reforms. While many political reforms are highly complex, transparent financial sector reforms which can be understood by an informed public are important because they give the public the ability to critique government policies (Capuano and Ramsay, 2011).

According to OECD (2005) financially educated consumers can help ensure that the financial sector makes an effective contribution to real economic growth and poverty reduction. Financial literacy is also crucial for more developed economies, to help ensure consumers save enough to provide an adequate income in retirement while avoiding high levels of debt that might result in bankruptcy and foreclosures. Therefore knowledge in Finance is relevant for both household, individuals, businesses and the nation as a whole. It is evident from the review above that financial literacy is very beneficial to the individual, community, financial system and economy as a whole.

2.3 DANGERS OF BEING FINANCIALLY ILLITERATE

Obviously, the less knowledge people have, the more they run into trouble. People with low level of financial literacy are likely to make costly financial planning mistakes. A study by economists at the Atlanta Fed finds that thirty per cent of people in the lowest quartile of financial literacy thought they had a fixed-rate mortgage when in fact they had an adjustable-rate. Lusardi and Tufano (2008) in their work find that people with lower debt literacy end up paying higher fee and generally have higher borrowing costs. People fail to make correct decisions because

they have not received a sound personal finance education (Hira, 1993; O'Neill, 1993).

Financial literacy deficiencies can affect an individual's or family's day-to-day money management and ability to save for long-term goals such as mortgage decisions, seeking higher education, or financing retirement. Ineffective money management can also result in behaviours that make consumers vulnerable to severe financial crises. People with low financial literacy are more likely to have problems with debt (Lusardi and Tufano, 2009). They are also less likely to participate in the stock market (Van Rooij, Lusardi, and Alessie, 2007) and less likely to choose investment products with lower fees (Hastings and Tejeda-Ashton, 2008). The financially illiterate person is less likely to accumulate wealth and manage wealth effectively (Stango and Zinman, 2007; Hilgert, Hogarth, and Beverly, 2003), and less likely to plan for retirement (Lusardi and Mitchell, 2006, 2007a, 2009).

Students who lack financial knowledge have increased financial difficulties that continue into later years (Danes and Hira, 1987; Hira, 2002). Chen and Volpe (1998) find that students with less financial knowledge had more negative opinions about finances and made more incorrect financial decisions. Having a low level of financial knowledge limits students' ability to make informed decisions (Jorgensen, 2007).

The consequences of financial illiteracy cannot be down played since it has very daring effect. The negative effects of financial illiteracy transcend from the individual consumer to the nation as a whole.

2.4 EMPIRICAL EVIDENCE OF KNOWLEDGE IN PERSONAL FINANCE

Below is a detailed review of people's general knowledge in personal finance; knowledge in savings and borrowings; investment and insurance which are the knowledge based theme of this research.

2.4.1 General Knowledge in Personal Finance

Prior studies of high school and college students in the US consistently find that students are not receiving good education in personal financial fundamentals and have poor knowledge (Bakken, 1967; HSR, 1993; Chen and Volpe, 1998). Also, Al-Tamimi and Kalli's (2009) research study in financial Literacy in UAE reveal that generally, financial literacy of UAE investors is below the needed level. Also, the working young in urban India exhibit inferior financial knowledge (Agarwalla, et. al., 2015). Lusardi, Mitchell and Curto (2009) examined financial literacy among the youth in the United States of America using data from the 1997 National Longitudinal Survey of Youth. They report that less than a one-third of young adults possess basic knowledge of interest rates, inflation, and risk diversification. This suggests that young people's general knowledge in finance is very low. Mandell (1997), Huddleston et al. (1999), Williams-Harold (1999), the National Council on Economic Education (NCEE, 2005) and the JumpStart Coalition (2005, 2006) investigated financial literacy levels among US high school students and conclude that students lack both personal financial skills and knowledge. According to Kotzè and Smit (2008) there is the need to increase financial education and financial literacy in South Africa as a result of the low rate in students personal finance knowledge. In addition, the findings reveal that students have a low level of confidence in their money management skills and expressed a desire for more

financial education. According to Chen and Volpe (1998) college students' knowledge in general issues in finance is medium.

Princeton Survey Research Associates (1997) surveyed 1,770 households nationwide on their financial knowledge and find an average correct score of 42%. This result shows that household financial decision makers do not have a good grasp of basic finance concepts. The Media Research Consultants Ltd (2005) found that, in general, Singaporeans had fairly healthy attitudes towards basic money management and financial planning matters. Most of the respondents also recognized the importance of financial planning and have done some basic financial planning. However, the study finds that many respondents do not manage and plan their finances in a disciplined or structured manner.

A study on personal financial literacy, conducted with a sample of high school seniors in urban and rural high schools in South Western Indiana, conclude that there is a financial literacy deficiency among high school students (Valentine and Khayum, 2005). To measure the students' level of financial literacy, the researchers administered a personal financial literacy quiz that covered questions on credit cards, current and savings accounts, automobile insurance, housing rental, food and car purchases. They find that of the entire sample of 312 students, the majority of students merely answered 51 percent of the questions correctly, demonstrating a lack of financial literacy. Similarly, Danes and Hira (1987) survey 323 college students from Iowa University and find that participants had a low level of knowledge regarding overall money management.

Cole and Fernando (2008) noted that similar to the findings of developed countries, the small number of studies in developing countries shows that the level of financial literacy is very low. The Department for International Development conducted a study in Zambia and find that only half the adult population knew how to use basic financial products. Again, a research conducted for the OECD's study on financial education indicates that the level of financial literacy is low in most countries, including in developed countries.

2.4.2 Knowledge in Savings and Borrowing

The Media Research Consultants Ltd (2005) finds that majority of Singaporeans understand what saving is and as a matter of fact they do save, monitor their spending and is generally responsible in the use of credit. As noted by Avard et al (2005) most students in United State are unable to balance a cheque book and do not know the fundamental principles of earning, spending, saving and investing. Ironically, about 80% of these teens from the ages of 18 to 20 have credit cards today (Clarke et al, 2005). Overall, the average student graduates from high school lacking basic financial skills when it comes to savings and borrowing. Chen and Volpe (1998) find that college students have a very low knowledge of savings and borrowing.

One report that covered middle age respondents was the 2004 Health and Retirement Study (Lusardi and Mitchell, 2007). In this case, the study examined how workers made saving decisions, how they collected the information for making these decisions, and, most importantly, whether they possessed the financial literacy needed to make informed decisions. Overall, the research concluded that only half of

the respondents from the Health and Retirement Survey could answer two simple questions regarding interest compounding and inflation correctly. While over 80 percent got the Percentage Calculation question correct, only about half could divide \$2 million by 5 to get the Lottery Division right. More worrisome is the fact that only 18 percent were able to correctly compute the compound interest question; of those who got that interest question wrong, 43 percent undertook a simple interest calculation, thereby ignoring the interest accruing on both principal and interest (Lusardi and Mitchell, 2007). Those findings are especially alarming considering that the majority of the respondents in the sample are only a dozen years from retirement and should already have the financial experience that comes from handling numerous financial decisions during their life. Danes and Hira (1987) noted that students had a low level of knowledge regarding savings and credit card.

2.4.3 Knowledge in Investment

Volpe et al. (1996) assessed the knowledge of personal investment among 454 college students and the relationship between investment literacy level and gender, academic discipline and experience. The results indicate that in general college students were illiterate about personal investment specifically in the topics about global investing, stock market valuation, impact of interest rate changes and tax planning. The study concludes that college students have inadequate knowledge of personal investment's basics. According to Chen and Volpe (1998) college students' knowledge in investment is very low.

Also, Volpe et al. (2002) analyse the investment literacy of online investors. The study finds that the level of investment literacy was low. In another study of 522

adult women, 56% are found not to be very knowledgeable about investing (Oppenheimer Funds/Girls Inc., 1997).

2.4.4 Knowledge in Insurance

The Media Research Consultants Ltd (2005) finds that majority of Singaporeans are not well-versed in key features and mechanics of common financial products such as life insurance policies and unit trust. According to Danes and Hira (1987) students have a low level of knowledge regarding insurance. Chen and Volpe (1998) find that college students have a very low knowledge of insurance.

2.5 CHARACTERISTICS AND FINANCIAL LITERACY

The level of knowledge in any subject, including financial knowledge, can be connected to variables, such as: Age, gender, level of education, accessibility to media, sources of education on money matters, place of work, among others. There is considerable evidence that people who studied economics or business courses are more likely to be financially knowledgeable. This argument was supported by research of Lusardi and Mitchell (2007b) and Chen and Volpe (2002). Research has shown that financial literacy in certain population groups are particularly low – like those with little or no education, in low income groups, young individuals and women (Lusardi, 2012; Hastings and Mitchell, 2011).

The findings of Chen and Volpe (1998) indicate that, in terms of participants work experience and ages, participants with more years of work experience are more knowledgeable than those with less experience. Participants in the age category of ‘20-29’ and ‘40-or-older’ exhibited greater knowledge than the other age groups.

According to Agarwal et al. (2009) an increase in age also comes with the accumulation of knowledge based on practical life experiences. The initial rise with age might be interpreted as an increase in experience, while the subsequent decline could be the result of deteriorating cognitive functions.

Gender has been identified by several empirical studies to have a relationship with the level of knowledge on financial differences. Bernheim (1998) finds that males perform better on both financial and macroeconomic questions. Goldsmith, Goldsmith and Heaney (1997) suggest that women score worse than men because in general they are less interested in the topics of investment and personal finance and, consequently, use financial services more seldom. Chen and Volpe (2002) and Goldsmith, Goldsmith and Heaney (1997) link risk taking, and confidence as contributors to gender differences in financial literacy. Similarly, Chen and Volpe (2002), Bajtelsmit and Bernasek (1996) and Powell and Ansic (1997) report that women were more risk averse than men. Women generally have less enthusiasm for, lower confidence in and less willingness to learn about personal finance topics (Chen, 2002, p. 289). There are also many excuses they use to become less involved in their financial well-being. Some of the excuses include: someone else will do it, I am not interested in money matters, I do not make enough, I do not have time, and I just do not want to think about it (Frankel, 2008). Haiyang and Volpe (2002) in their survey of financial literacy among college students in the USA, find that women generally have less knowledge about personal finance topics. According to Danes and Hira (1987) males know more about insurance than females.

Chen and Volpe (1998) show that men tend to know more about insurance and personal loans compared to women who usually are more knowledgeable in financial areas such as spending and saving, taxes and personal financial planning. While men tend to feel more confident of their money handling abilities which lead them to take higher financial risks, women have more negative and conflicting feeling about money, as their financial attitudes tend to be more conservative (Edwards, Allen and Hayhoe, 2007) . This cautious approach towards money management might explain why undergraduate debt discourages women more than men from entering graduate training (Davies and Lea, 1995). Consistent with previous research, college-aged women repeatedly show lower levels of financial literacy compared to college-aged males (Chen and Volpe, 1998; Murphy, 2005). Women and men show differences in their level of financial literacy.

Another study exploring the financial literacy of adults in the U.S. was conducted by Hilgert and Hogarth (2002) using data from the University of Michigan's 2001 Survey of Consumers. The sample of the study included about 1,000 respondents age 18-97. The 28 True/False Financial Literacy question included questions covering financial topics such as knowledge about credit, saving patterns, mortgages, and general financial management. The study shows that, in general, less financially knowledgeable respondents were more likely to be single, relatively uneducated with relatively low income, minority, and either young or old (not middle aged).

Chen and Volpe (1998) examined the personal financial literacy of 924 college student from 13 campuses located in the USA. The results of the study indicate that subgroups of academic discipline, class rank and years of work experience were

significantly different in terms of financial literacy level. Non business majors, students in the lower class ranks and those with little work experience had lower level of financial literacy. In addition, women were far less literate than men, and foreign students were less knowledgeable than USA citizens. The level of financial literacy tends to vary according to education and income levels, but the evidence shows that highly educated consumers with high incomes can be just as ignorant about financial issues as less educated, lower income consumers. Volpe et al. (1996) demonstrate that female students are significantly less knowledgeable about personal investing than male students specifically in the areas of stock valuation, mutual fund performance, business mathematics and global investing. They also find that prior experience in securities trading and age do not affect the investment knowledge level and the investment illiteracy existed across all age groups with or without prior investment experience. The study concluded that college students had inadequate knowledge of personal investment's basics.

From these findings one can say that financial knowledge among individuals is determined by variables such as age, work experience, and place of work.

2.6 EFFECT OF FINANCIAL LITERACY ON FINANCIAL DECISIONS AND OPINIONS

Those who study financial literacy generally agree that many, if not most, consumers lack the financial literacy necessary to make important financial decisions in their own best interests (Perry 2008; Braunstein and Welch 2002). Several studies show that financial literacy is positively related to self-beneficial financial behaviour. Hilgert, Hogarth, and Beverly (2003) added financial behaviour and financial

literacy questions to the nationwide Survey of Consumer Finances. They form a Financial Practices Index based upon behaviour in four variables: cash-flow management, credit management, savings, and investment practices. Comparing the results of this index with scores on the financial literacy quiz, they find that those who are more financially literate had higher Financial Practices Index scores, indicating that financial knowledge is related to financial behaviour. In a study of Dutch adults, Van Rooij, Lusardi, and Alessie (2007) find that those with low financial literacy are more likely than others to base their behaviour on financial advice from friends and are less likely to invest in stocks. Mandell (2006) finds that high school seniors with higher financial literacy scores are less likely than others to bounce a cheque and more likely to balance their cheque books.

While financial behaviour seems to be positively affected by financial literacy, the effects of various forms of financial education on financial behaviour are less certain. Research on the impact of retirement seminars has shown mixed results. Bayer, Bernheim, and Scholz (1996) find that employer retirement seminars increased the participation in and contributions to voluntary savings plans. Duflo and Saez (2003) report that retirement seminars have positive effect on participation in retirement plans. Lusardi and Mitchell (2007) find retirement seminars to have a positive wealth effect; however, this effect is found mainly for those with less wealth or education. Lusardi and Mitchell (2007) have clearly established that there is a very high relationship between financial literacy and economic outcomes.

2.7 GAPS IN LITERATURE

From the literature reviewed above, several gaps have been identified. Firstly, most of the studies did not include insurance in their financial literacy test/questions. The review at 2.4.4 suggests that only Media Research Consultants Ltd (2005) and Danes and Hira (1987) included insurance in their financial literacy studies. This study included basic questions on insurance as part of the financial literacy questions since insurance is a key component of personal finance. Since the insurance industry is growing steadily in Ghana, it is very important to ascertain the level of students' knowledge in insurance so as to design interventions to improve their knowledge and also stimulate their interest in utilizing insurance products.

Secondly, most studies ignored the effect of financial literacy on personal financial management practices of people. This study provides robust evidence in this regard, by including questions on practices. Thirdly, some studies have examined factors that influence the acquisition of financial knowledge but none of them sought to find out from their respondents where they expect to consciously acquire financial knowledge. Financial education can be provided effectively only when the right channels or avenues are used. This study provides evidence of the avenues students expect to acquire financial knowledge to ensure that the right channels are used in educating students on financial matters.

Lastly, studies on financial literacy in Ghana is scanty and sometimes with limited coverage. The few studies in Ghana include Oppong-Boakyie and Kansanba (2013) and Ansong and Gyensare (2012). The study of the former was limited to only business students of Kwame Nkrumah University of Science and Technology while

the latter was limited to students of University of Cape Coast sandwich programme excluding regular students who are the majority. However, this study covers extensively 12 universities (both public and private) in Ghana and also the sample cut across several programmes. This study also examines comprehensively students' financial knowledge from four main dimensions (general finance, savings and borrowing, investment and insurance).

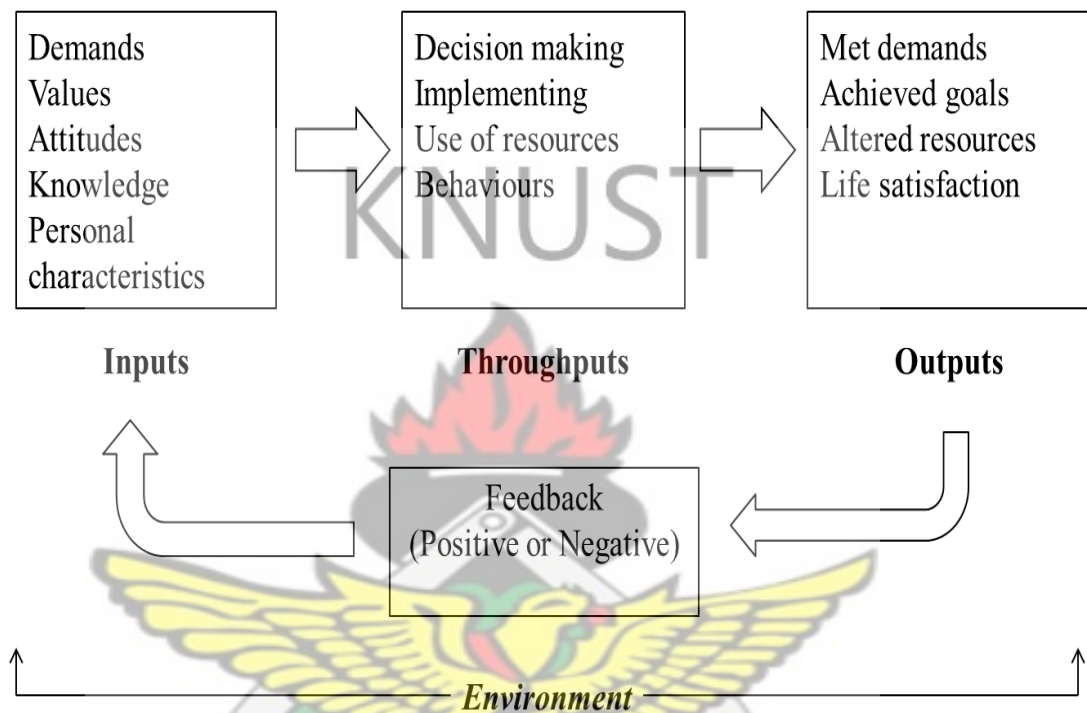
2.8 THEORETICAL FRAMEWORK

The theoretical paradigm mostly used by researchers when studying financial decisions and how resources are managed is systems theory (Goldsmith, 2005). Systems theory looks at input, throughput, output and feedback in a flow chart model. Financial management is a concept grounded in human ecology and utility theories which are quite related to family resource management theory, which is embedded in the systems theory (Bubolz and Sontag, 1993). This study adapted the family resource management theory to understand and appreciate the financial literacy level of university students and how their financial knowledge shapes their financial decisions, opinions and practices. Also, the Social Learning Theory postulated by Bandura (1977) was used to complement the family resource management theory.

According to Goldsmith (2005) family resource management theory was advanced by Deacon and Firebaugh (1981) as a management process with an orientation where management is “the process of using resources to achieve goals”. The four steps in the family resource management model explain how people make financial decisions and develop financial behaviours. The steps are inputs, throughputs, outputs, and

feedback loop as depicted in Figure 1 above. These steps are explained in line with how they fit the model designed for this study.

Figure 1: Family Resource Management Model



Source: Jorgensen (2007)

2.8.1 Inputs

The first phase of the family resource management model which is the input stage depicts the resources the individual has at any given time (Goldsmith, 2005; Hayhoe et al., 2005). These resources include demand, value, attitude, knowledge etc. For people to have sound judgement about financial issues, make the right decision among financial alternatives and also have sound personal finance practices, the basic resource needed is financial knowledge. Thus financial literacy is critically examined as the input for this study.

2.8.2 Throughputs

The second phase of the model is the throughput where decisions are made based on the individual's available resources. Throughputs include planning, implementing, decision making, communicating, and use of resources (Goldsmith, 2005). In this study, the throughput phase reflects students' financial opinions, decision making and personal financial management practices because it epitomizes the use of resources (financial knowledge) from the inputs phase.

2.8.3 Outputs

Output, which is the third phase, looks at whether the preferred goal was achieved. It is the recognized outcome that emanates based on the decisions made by the individual (Jorgensen, 2007). According to Rice and Tucker (1986) "the final output is the satisfaction or dissatisfaction with the quality of life produced by the solutions generated in response to demands and resource inputs". Longitudinal data is required to measure outputs (Jorgensen, 2007). Since this study is cross-sectional rather than longitudinal, the outputs phase is excluded.

2.8.4 Feedback

Feedback loop is the fourth stage. Rice and Tucker (1986) posit that feedback is incessantly used in all phases of the resource management system. Feedback ensues once there is an imbalance in the individual's life (Hayhoe et al., 2005 and Goldsmith, 2005). This can be as a result of having goals not achieved. Feedback relays to input by means of increased knowledge. The fresh resources offered allow the process to occur again as the individual make use of the new resources to make decisions with the expectations of a better output that will bring equilibrium and

satisfaction with the output (Goldsmith, 2005). This phase is excluded from this study since it requires a longitudinal data to measure it (Jorgensen, 2007).

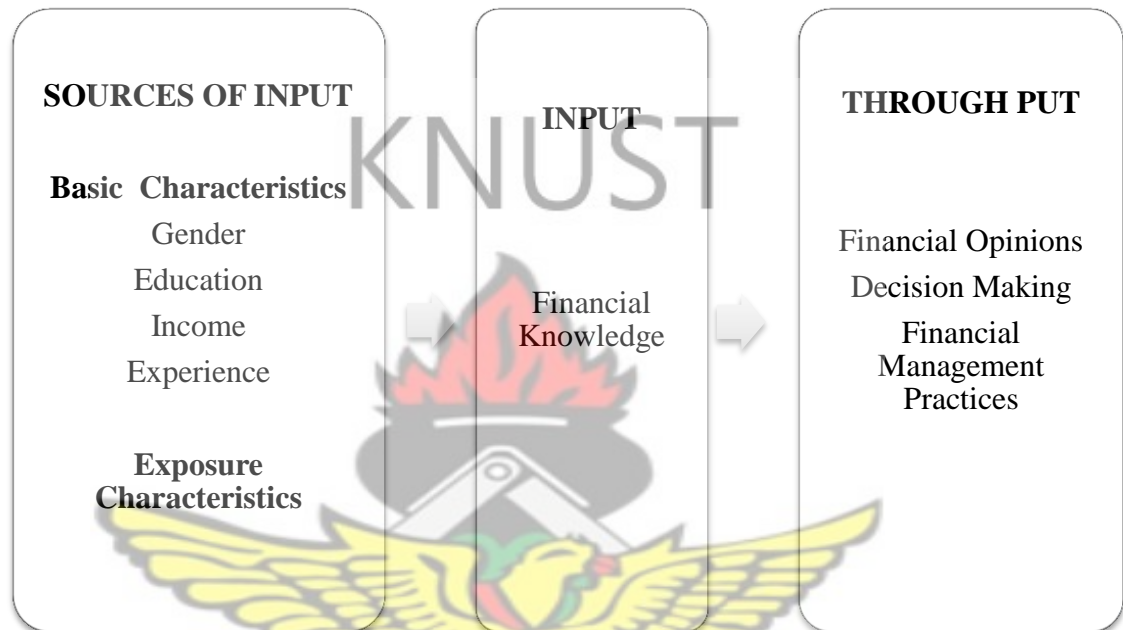
2.8.5 Determinants/Sources of Financial Knowledge

To fully meet the objectives of this study, I had to go one step back of the family resource management theory to add sources/determinants of financial literacy as depicted by Figure 2. The extant literature reviewed in section 2.5 reveal that financial knowledge is acquired through ones basic characteristics such as gender, education, experience etc. Thus basic characteristics of students are added at the first phase of the model used for this study.

Also, based on the social learning theory, exposure characteristics were included as part of the sources of financial knowledge. Social learning theory posits that learning is a cognitive process that takes place in a social context and can occur purely through observation or direct instruction, even in the absence of motor reproduction or direct reinforcement. The social learning theory helps to explain how university students acquire financial knowledge through environmental influences (family influence, financial inclusion, residential characteristics etc.). These variables are important since student learn through social interaction. According to Bubolz and Sontag (1993) family, school, church and media all shape university students' knowledge. The inclusion of these exposure variables in this research is a major contribution to this study.

In summary this study combines family resource management theory and social learning theory to develop a model which I have christened Financial Literacy Impact Model (FLIM) as shown in Figure 2 above.

Figure 2: Model of the Study – Financial Literacy Impact Model



Source: Author's construct

Table 1: Summary of Key Papers on Financial Literacy

Name of Author(s)	Sample Size	Methodology/Measurement	Findings
Lusardi, Mitchell and Curto (2010)	7,417	Questionnaires, Levene test of mean difference Multivariate conditional analysis using probit	They find that financial literacy is low among young adults. They also find that financial literacy is strongly related to socio-demographic characteristics and family financial sophistication.
Lusardi and Tufano (2009)	1000	Survey using phone interview, Multinomial logistic analysis	They find that debt literacy is low: only about one-third of the population seems to comprehend interest compounding. Even after controlling for demographics, They find a strong relationship between debt literacy and both financial experiences and debt loads.
Van Rooji, Lusardi and Alessie (2007)	2,000	Questionnaires and interviews Ordinary Least Squares regression Generalised methods of moment (GMM)	They find that while the understanding of basic economic concepts related to inflation and interest rate compounding is far from perfect, it outperforms the limited knowledge of stocks and bonds, the concept of risk diversification, and the working of financial markets. They also find that the measurement of financial literacy is very sensitive to the wording of survey questions. Those who have low financial literacy are significantly less likely to invest in stocks.
Jorgensen (2007)	1084	Online survey, Analysis of Variance (ANOVA)	The author finds that financial knowledge, attitude, and behaviour scores of the respondents are low. Further, students who are financially influenced by their parents have higher financial knowledge, attitude, and behaviour scores. Finally, students with higher financial knowledge also have higher financial attitude and behaviour scores.
Cude, Lawrence, Lyons, Metzger, Le Jeune, Marks, and Machtmes (2006)	8,266	Online survey Percentages and multiple regression analysis	They find that parents play a key role in their children's financial socialization. They also find that some college students are not managing their finances well.

Table 1 continued

Name of Author(s)	Sample Size	Methodology/Measurement	Findings
Chen and Volpe (2002)	1800	Survey questionnaires, Analysis of Variance (ANOVA), Logistic regression analysis	They find gender differences in financial literacy to be statistically significant after controlling for other factors such as participants' majors, class rank, work experience and age. Males are more financially literate than female.
Chen and Volpe (1998)	924	Questionnaires, Analysis Of Variance (ANOVA), Logistic regression analysis	They find that college students have inadequate financial knowledge. Non-business majors, women, students in the lower class ranks, under age 30, and with little work experience have lower levels of financial knowledge. Less knowledgeable students tend to hold wrong opinions and make incorrect decisions.
Volpe, Chen, and Pavlicko (1996)	454	Questionnaires, Percentiles	They find that college students have inadequate knowledge of personal investment. They also find that female students, non-business majors, non-financial accounting majors are less knowledgeable in investment.
Ansong and Gyensare (2012)	250	Questionnaires, Analysis Of Variance (ANOVA), Pearson's product moment correlation	They find that age and work experience are positively related to financial literacy. Also, mother's education is positively correlated with respondents' financial literacy. However, level of study, work location, father's education, access to media and the source of education on money are all not significantly correlated with financial literacy
Hilgert, Hogarth, and Beverly (2003)	1,004	Questionnaire survey, Percentages	They find that those who are more financially literate have higher Financial Practices Index scores, indicating that financial knowledge is related to financial behaviour.

Source: Author's construct

CHAPTER THREE

HYPOTHESES DEVELOPMENT

3.0 INTRODUCTION

This chapter examines the hypotheses developed in this study. The research seeks to find out whether subgroups based on gender, education (academic discipline and level), experience (work and age), income and exposure to monetary matters have any influence on financial literacy in Ghana. The study will further explore whether there is a relationship between financial literacy and financial decisions, opinions and practices.

Previous studies find that levels of financial literacy vary among subgroups of persons particularly students (Volpe, Chen and Pavlicko, 1996). Al-Tamimi and Kalli (2009) in their research in the United Arab Emirates indicate that financial literacy level is affected by income levels, education level, and workplace activity. Also, research has shown that financial literacy in certain population groups are particularly low, example, those with little or no education, in low income groups, young individuals and women (Lusardi, 2012; Hastings and Mitchell, 2011). Chen and Volpe (1998) examine the personal financial literacy of 924 college students from 13 campuses located in the USA and find that subgroups of respondents based on academic discipline, class rank and years of work experience were significantly different in terms of financial literacy level. De Clercq and Venter (2009) in their study of undergraduate students studying to become chartered accountants in South Africa conclude that the level of financial literacy vary among subgroups of students based on their gender, age, language, race and income levels. Given the review

above, the hypotheses will focus on the following: gender, education, experience, income and exposure to monetary and financial matters.

3.1 GENDER

Gender has been identified by several empirical studies to have a relationship with the level of knowledge on financial matters. In a financial literacy survey conducted on students from the University of Southern Queensland, Australia, Beal and Delpachitra (2002) find that students with higher financial literacy scores were more likely to be male. Al-Tamimi and Kalli (2009) find a significant difference in the level of financial literacy between men and women. Specifically, women had a lower level of financial literacy than men. They attribute this to women generally having less enthusiasm for, lower confidence in and less willingness to learn about personal finance topics (Chen, 2002). Bumcrot et al (2011) also examined the level of financial literacy across of the fifty US states and report that financial literacy varies by gender. Specifically, using financial literacy index, they find lower financial literacy levels among women.

Lusardi and Mitchell (2008) document that financial illiteracy is more prevalent among women than men. Zissimopoulos, Karney, and Rauer (2008) find that less than 20% of middle-aged college-educated women were able to answer a basic compound interest question compared to about 35% of college-educated males of the same age. Chen and Volpe (2002) in their survey of financial literacy among college students in the USA, find that women generally have less knowledge about personal finance topics. Danes and Hira (1987) in their research find that males know more about insurance and personal loans, but females know more about issues covered in

the section of overall financial management knowledge. In their survey of 454 students, focusing on knowledge of investment, Volpe, Chen, and Pavlicko (1996) find that male students are more knowledgeable than female students. Bernheim (1998) finds that males performed better on both financial and macroeconomic questions. Goldsmith, Goldsmith and Heaney (1997) in their research revealed that women scored worse than men because in general they are less interested in the topics of investment and personal finance and, consequently, use financial services more seldom.

One of the proposed explanations for the financial literacy gender gap, for example by Hsu (2011) and Fonseca et al. (2012), is that gender disparities emerge due to specialization within the household; specifically, men are more involved in financial decision-making. It could be that women are less financially literate because of their traditional roles in society. They are more likely to stay home and take care of children and less likely to deal with financial topics or discuss them with colleagues, family, and friends. This may be applicable to university student in the sense that children mimic the behavioural role of their parents in the house. Girls and boys are likely to pick a lot of character traits from their mothers and fathers respectively which later might influence their understanding of and the importance attached to financial issues. Although, gradually, the roles of women in society in many areas are changing, there is still a substantial gender gap with respect to financial literacy and, in particular, among the young. Another reason for the persistent gender gap in financial literacy may be that women are less confident in their financial knowledge and thus are more inclined to answer “do not know.” There is ample evidence from psychologists and economists that women are less confident than men in many

situations (see Barber and Odean, 2001; and Beyer, 1990). This study will examine thoroughly the responses of males and females to see whether this is a probable reason for the gender gap issue in financial literacy.

Some studies indicate that while men appear to be over-confident, women seem under-confident (see Dahlbom et al., 2011; and Barber and Odean, 2011). In the context of financial knowledge, Chen and Volpe (2002) find that female college students are less confident and enthusiastic about financial topics. Webster and Ellis (1996) indicate that even among financial experts, women show lower self-confidence in financial analysis compared to men. Available evidence suggests that gender differences in financial knowledge and financial behaviour, especially in terms of making ends meet and saving, are partly related to socio-economic differences between men and women, and in particular to their lower incomes. This suggests that women's financial weaknesses are due to higher constraints that women face with respect to men in accessing economic and financial opportunities, as well as to lower financial literacy. Also, Goldsmith, Goldsmith and Heaney (1997) suggest that women are less financially literate than men because in general women are less interested in the topics of investment and personal finance.

The literature suggests that women and men show differences in their level of financial literacy in many countries. Therefore based on the above review, the following hypothesis (in the alternate) would be tested:

H1: There is a significant difference in the level of financial literacy of Ghanaian students based on their gender.

3.2 EDUCATION (ACADEMIC DISCIPLINE AND LEVEL)

There is considerable evidence that people who studied economics or business courses are more likely to be financially knowledgeable. This argument was supported by the research of Lusardi and Mitchell (2007b) and Chen and Volpe (2002). Volpe, Chen, and Pavlicko (1996) find that business majors are more knowledgeable than non-business majors. This is so because curriculum requirements of business majors give them more opportunity to take finance and related courses. Business students study a lot of finance and economics related subjects as compared to non-business students. Business students are likely to study subjects such as financial management, investment management, business finance, accounting etc. The fact that business majors take courses in finance and accounting related subjects give them superior knowledge in financial matters as compared to those who are in the category of non-business majors.

Chen and Volpe (1998) conclude that students in the lower class ranks had lower level of financial literacy. Students in higher class ranks such as senior or final year students had more financial knowledge than those in lower class ranks. They further explained that those in senior classes were more exposed to issues of finance as they would have rented apartments, taken loans etc. and as such had more financial knowledge than their juniors who were less exposed to financial issues. Within business major, students in higher levels would have covered more finance related modules. They therefore concluded that students' experience on campus contributed to the significant differences in the level of financial knowledge among students, positing that those in senior classes were more experienced than freshmen and junior students. Also, graduate students are normally more matured and have greater family

and work responsibilities as compared to undergraduate students. Most graduate students have jobs and plan well financially so as to cater for themselves while they study. However, most undergraduate students are supported by their parents or guardians. So it is expected that post-graduate students would be more exposed to financial and monetary matters as compared to under-graduate students. Al-Tamimi and Kalli, (2009) find that respondents who hold high educational degrees, had a higher financial literacy level than others. In his study into factors affecting individuals' financial literacy in US, Cude (2010) finds that higher level of education increases people's financial literacy. Several research works have shown that financial literacy is very low among persons with little or no education (Lusardi, 2012; Hastings and Mitchell, 2011). Hilgert and Hogarth (2002) in their research concluded that in general, less financially knowledgeable respondents were more likely to be relatively uneducated. Generally, we expect educated people to have the ability to understand financial issues relating to savings, borrowing, investment, insurance etc. They will have better appreciation of the various financial products available in the market. Also, they have the confidence in dealing with financial institutions as compared to the uneducated. Based on the evidence above, the second and third hypotheses (in the alternate) are formulated as:

H2: There are significant differences in the levels of financial literacy among students based on their academic discipline.

- a. Business students are more likely to be financially literate than non-business students
- b. Accounting and finance students are more likely to be financially literate than non-accounting and finance students

H3: There are significant differences in the levels of financial literacy of students based on their year of study.

3.3 EXPERIENCE (AGE, WORK)

In their exploratory study, De Clercq and Venter (2009) evaluated age, gender and the amount of pocket money that learners receive to determine their impact on the level of learners' financial literacy. They concluded that of the three variables, only age has a significant effect on the level of learners' financial literacy. Prior studies such as those of Chen and Volpe (1998) find age to be positively related to personal financial literacy among tertiary students in California, Florida, Kentucky, Massachusetts, Ohio, and Pennsylvania. Similar studies by Ansong and Gyensare (2012) in Ghana find a positive relationship between age and personal financial literacy of working university students. Financial literacy is seen to be low especially among young individuals (Lusardi, 2012; Hastings and Mitchell, 2011). Less financially knowledgeable respondents are more likely to be young (Hilgert and Hogarth, 2002).

In his study into factors affecting individuals' financial literacy, Cude (2010) finds that there was a positive correlation between aging and people's financial literacy. Agarwal et al. (2009) also argues that as people grow older they accumulate more knowledge about various facets of life through practical life experience thereby accounting for the positive relationship between age and financial literacy. Several researchers including Micomonaco (2003), Chen et al. (1996), Chen and Volpe (1998) in their studies US find that students between 18 to 24 years were less financially literate as compared to those aged above 24. They further explained that

students below 25 years are less exposed and inexperienced with little financial responsibility accounting for their low level of financial literacy. Many of these students gain independence and a greater sense of financial responsibility for the first time. So the reason for the low level of knowledge can be ascribed to the fact that majority of them are in a very early stage of their financial life cycle. Chen and Volpe (1998) further argue that at this stage of the cycle, students are exposed to a limited number of financial issues related to general knowledge, savings and borrowing and insurance. During this period, most of their incomes are spent on consumption rather than investment. In a study by Van Rooij, Lusardi and Alessie (2007), participants with ages above thirty (30) years were found to be more financially literate than those below age thirty (30). They argued that those with ages above thirty (30) were more exposed to financial issues such as savings, borrowings, investments and insurance than those below thirty. They further explained that, those in this age group were more inclined to savings as they would have been preparing for acquiring a house, car and the like.

When it comes to working experience, Cude (2010) in his study into factors affecting individuals' financial literacy, finds that high work experience increases people's financial literacy. In a financial literacy survey conducted on students from the University of Southern Queensland, Australia, Beal and Delpachitra (2002) find that students with higher financial literacy scores were more likely to have greater work experience. Ansong and Gyensare (2012) in their research with data randomly collected from 250 undergraduate and postgraduate students of a public university in Ghana find that work experience has a positive relationship with financial literacy. Thus, as one gathers more work experience his/her knowledge on financial issues

also increases. Ansong and Gyensare (2012) explain that the more acquainted an employee is to a particular job, the more experienced he/she would be and hence the likelihood that he/she would be acquainted with financial issues like wages and salaries, fringe benefits, and savings and investment. The findings of Chen and Volpe (1998) indicate that in terms of participants' work experience, participants with more years of work experience are more knowledgeable in finance than those with less experience. The reason assigned to this is that the work environment provides a platform for people to accumulate knowledge based on experiences gained from their area of work over a period of time. Al-Tamimi and Kalli (2009) in their study find that those who work in the field of finance/banking or investment had a higher financial literacy level than others.

It can be deduced from the review that increases in age and work experience go with knowledge accumulation based on practical life experiences and thus, both are expected to have a positive relationship with respondents' financial literacy level. It is worth mentioning that age and work experience are both positive predictors of university students' financial literacy (Ansong and Gyensare, 2012). As depicted by several researches reviewed above, experience is one key factor that determines the level of financial level of students. Hence, the fourth and fifth hypotheses are formulated as:

H4: There is a significant difference in the level of financial literacy of students based on their age.

H5: Students with more work experience are more likely to be financially literate than those with less work experience.

3.4 INCOME

Existing literature points overwhelmingly to the fact that high income earners tend to be more financially literate than low income earners (Lusardi, 2012; Hastings and Mitchell, 2011). As was revealed in the research of Al-Tamimi and Kalli (2009) high-income respondents had a higher financial literacy levels than low income respondents. In his study into factors affecting individuals' financial literacy, Cude (2010) finds that there was a positive correlation between income and people's financial literacy. A study conducted by Hilgert and Hogarth (2002) in the U.S. showed that, in general, less financially knowledgeable respondents were more likely to be relatively of a low income. Financial literacy varies positively with the income levels of people. In a financial literacy survey conducted on students from the University of Southern Queensland, Australia, Beal and Delpachitra Study (2002) find that students with higher financial literacy scores were more likely to have a higher income.

We expect people who earn relatively high income to save more. Savings bring about accumulation of funds and as such prudent use of such funds is very necessary. The saver must decide where to invest or what to use the savings for. To decide effectively, high income earners seek information to improve their knowledge on how to manage their income. So we expect income earners to have a higher financial literacy level than those who have low or do not earn income.

In an Adult Financial Literacy Survey conducted in Australia in December 2011, primary amongst the groups identified as being those with low financial literacy were people with relatively low levels of incomes and assets. Monticone (2010)

posits that financial knowledge is positively correlated to wealth and/or income. Fowdar *et al* (2008) in their study of the financial literacy level of Mauritius came to the finding that the income level of an individual was positively related to his level of financial knowledge or literacy at 1% significance level. This implies that as the income level of an individual improves, there is a corresponding improvement in his financial literacy level. The trend taken by existing literature regarding income levels as a determinant of financial literacy is one that is expected as it stems from the interaction of several factors. Low income earners do not have the capacity to save much as their income mainly goes into necessities like food and housing costs. This leaves them entrapped in the poverty cycle with no means of enhancing their financial literacy levels. Also, low income earners are not enthusiastic in improving their knowledge in savings, investment, and financial products since the income they earn barely meet their day to day spending. Based on the evidence above, the sixth hypothesis (in the alternate) is formulated as:

H6: There is a significant difference in the level of financial literacy of students based on their income.

3.5 EXPOSURE

The literature on financial literacy and exposure is quiet scanty and still developing. An extensive review of the few ones however indicates there is a relationship between financial literacy and exposure. Exposure is perceived as the socio-cultural environment within which the individual lives; the attributes of the family setting, the locality where the person has spent majority of his life and the kind of financing and housing arrangement used by the respondent in his/her university education.

Lusardi et al (2010) investigated the factors associated with financial literacy among American youth. The research sample which consisted of 7417 individuals was collected through random sampling. The results of these researchers showed that social factors, family factors, family financial status, and parents' academic education influenced individuals' financial literacy. This study also showed that the cultural level of the family, their income, parental participation in equity investment, parents' investment and their race were related to financial literacy level.

It has been argued by researchers such as Ansong and Gyensare (2012) that external factors such as mother's level of education have a positive and significant impact on the financial literacy of children. Arguing from a sociological perspective, they concluded that an 'educogenic' family (a family with both parents educated) will invariably motivate their children to move in the same direction as they the parents. Therefore, holding other things constant, the higher the educational level of a mother, the more knowledgeable the child is likely to be in financial issues. Hence, mother's level of education is posited to be a positive predictor of respondents' financial literacy. Since it is equally important that we know the impact of fathers' educational level on the financial literacy of their wards, fathers' educational level would be included in this study.

Ansong and Gyensare (2012) further reveal that there is no relationship between students' source of funding for tertiary education and their level of financial literacy. They documented that university students level of financial literacy did not vary based on their source of funding; students' on SSNIT loan, self-financing etc. were

found to have the same level of financial literacy thereby making source of funding an insignificant determinant on financial literacy.

From the above, it can be deduced that exposure (the socio-cultural environment) has a positive and significant impact on financial literacy. It is therefore posited that financial literacy is positively related to level of exposure implying that people with greater exposure (educated parents etc.) should be more financially literate than those whose parents are uneducated. Based on the evidence above, the seventh hypothesis (in the alternate) is formulated as:

H7: There is a significant difference in the level of financial literacy of students based on their exposure to financial matters.

- a. There is a significant difference in the level of financial literacy of students based on their family characteristics.
- b. Students who are financially included are more financially literate than those who are not.
- c. Students who have lived most of their life in the capital towns are more likely to be financial knowledgeable than those who have not.

3.6 FINANCIAL LITERACY AND FINANCIAL DECISIONS/BEHAVIOURS

Research carried out mainly in developed countries has shown that financial literacy is an important component of sound financial decision making and can have important implications for financial behaviour. For example, people with low financial literacy are more likely to have problems with debt (Lusardi and Tufano, 2009). They are also less likely to participate in the stock market (Van Rooij,

Lusardi, and Alessie, 2007), less likely to choose investment products with lower fees (Hastings and Tejeda-Ashton, 2008). According to Sabri, Cook, and Gudmunson (2012) financial literacy affects financial well-being. Al-Tamimi and Kalli (2009) find a significant relationship between financial literacy and investment decisions. Several studies have confirmed the positive association between financial knowledge and household financial decision-making (Lusardi and Mitchell, 2009). Tamimi and Culli (2009) studied the impact of financial literacy on financial decisions. Their results showed that participants who invested in banks and stock exchange had a higher financial literacy level.

Lusardi and Mitchell (2009) indicated that empirical research shows that financial literacy continues to be an important determinant of planning. Financial literacy is an important predictor of retirement planning and other important financial decisions. Their study revealed that those who were financially literate when young are also more likely to plan for retirement. Oseifuah (2010) in his study revealed that financial literacy among youth entrepreneurs in the Vhembe District in South Africa appears to be good and contributes meaningfully to their entrepreneurial skills. Beal and Delpachitra (2003) in their research concluded that university students were not skilled, nor well-informed in financial issues and that this would tend to impact negatively on their future lives through incompetent financial management.

Several studies have also shown that financial literacy is positively related to sound financial behaviour. Hilgert, Hogarth, and Beverly (2003) added financial behaviour and financial literacy questions to the nationwide Survey of Consumer Finances. They formed a Financial Practices Index based upon behaviour in four variables:

cash-flow management, credit management, savings, and investment practices. Comparing the results of this index with scores on the financial literacy quiz, they find that those who were more financially literate had higher Financial Practices Index scores, indicating that financial knowledge is related to financial behaviour. Mandell (2006) finds that high school seniors with higher financial literacy scores were less likely to bounce a cheque and more likely to balance their cheque books than others. Also low levels of financial literacy presents a serious problem for both the economic well-being of nations and the personal well-being of such individuals (CBF, 2004a; Morton, 2005; RMR, 2003). Financial literacy skills help people to navigate the financial world, make informed financial decisions and reduce their chances of being deceived on financial issues (Beal and Delpachitra, 2003; CBF, 2004b). Financial literacy skills is an indispensable tool for avoiding and solving financial problems, which, in turn, are vital to living a prosperous, healthy and happy life (CBF, 2004b). In his study, Cude (2010) finds that people with higher financial literacy are more successful in their professional and personal life. They have less financial concerns and they have more long-term saving and investments and by having this long-term vision, they will experience a better future. From the above review, the eighth hypothesis (in the alternate) is formulated as:

H8: There is a positive significant relationship between financial literacy and financial decisions and opinions.

3.7 CONCLUSION

These hypotheses have been formulated to examine the financial literacy level of students. For financial literacy improvement, what educational programme is most

needed, and at whom should it be directed? For example, do women need more financial education than men and in what age group or at what income level? For financial literacy improvement, it is important to consider the effect of gender, education (academic discipline, level), experience (age, work), income and exposure to financial matters. Finally, the relationship between students' financial decisions and financial literacy will also be considered.

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CHAPTER FOUR

DEVELOPMENTS IN GHANA

4.0 INTRODUCTION

This chapter examines the economic and financial developments in Ghana that justify the need for a research in financial literacy. Emphasis is placed on the implications of these developments on financial literacy. Financial system globally, has been shaped and re-shaped by international finance, economic and trade systems. Such systems have promoted privatization, market-based pricing, free trade and capital market liberalization. These developments have gradually led to a shift in financial responsibility from government and institutions to the individual, thus making financial literacy relevant to the individual consumer. Some of the financial developments in Ghana that call for the need to urgently promote financial literacy are reviewed below.

4.1 FINANCIAL SECTOR LIBERALISATION PROGRAMMES

The financial sector liberalization may be described as one that evolved with programmes and policies that constituted the financial sector reforms as the need for economic development and financial sector deepening inter alia became highly recognized in most developing countries including Ghana. Liberalization is broadly defined as giving greater role and more freedom to markets (Goyal, 2012). The Economic Recovery Programme initiated in 1983 laid the ground works for the implementation of the financial sector liberalization programmes (Aryeetey et al., 2000).

4.1.1 FINANCIAL SECTOR STRUCTURAL ADJUSTMENT PROGRAMME

I (FINSAP I)

Ghana's financial sector has witnessed a remarkable turnaround from the pre-1988 reform period. The comprehensive economic adjustment programme which embodied the financial sector reform started in April 1983. According to Emenuga (2004), the liberalisation of interest rates was gradual and it was not until September 1987 that the prescription of minimum and maximum deposit rates was abolished. The phased transition to market-determined interest rates was stepped up in 1988 with the introduction of the Financial Sector Structural Adjustment Programme (FINSAP). As a by-product of the Economic Recovery Programme (ERP), FINSAP, was implemented between 1988 and 2000 and encapsulated several issues. Its specific focus on the financial sector was aimed at: creating a sound, prudential and regulatory framework for banking; strengthening bank supervision, restructuring distressed banks; human resource development in banks; and development of fully liberalized money and capital markets.

The thrust of FINSAP was therefore to fully deregulate the financial sector through the introduction of market-oriented monetary management instruments and at the same time ensure the protection of the overall health of financial institutions through adequate regulation and supervision. As part of the FINSAP, government completely deregulated interest rates, eliminated selective credit guidelines and implemented measures to usher in indirect monetary controls. Open Market Operations (OMO) was introduced for liquidity management. Other features of the financial sector reform included licensing new private banks, establishing a stock exchange, granting

more supervisory powers to the Central Bank and promulgating of laws to formalize the activities of Non-Bank Financial Institutions (NBFI).

Emenuga (2004) report that FINSAP I resulted in the liberation of interest rates in 1987 and the removal of maximum lending rates and minimum time deposit rates. Minimum savings deposit rates were removed in the following year as were all the sectorial credit guidelines with the exception of the stipulation that at least 20% of each bank's loan portfolio be allocated to agriculture which was subsequently removed in 1990. Bank charges and fees were also abolished. The bank's specific credit ceilings, which had been the main instrument of monetary control employed during the ERP, were removed in 1992, and replaced with an indirect market based system of monetary control involving the weekly auctioning of treasury bills and other government and BOG securities, backed up with statutory cash reserve and liquid asset requirements (Alexander et al, 1995, pp. 47-49). Hence by the early 1990s banks were free to price deposits and loans and to allocate loans according to market criteria, although the very high reserve ratios imposed by the BOG were a major constraint on the volume of credit they could extend.

4.1.2 FINANCIAL SECTOR STRUCTURAL ADJUSTMENT PROGRAMME

II (FINSAP II)

By 1991, FINSAP I had successfully been completed and paved way for FINSAP II with its objective of reducing state shareholding in Ghanaian banks, to continue the bank restructuring programme launched in FINSAP I and to enhance the activities of non-bank financial institutions. The aim was to develop an efficient and competitive financial system that would support and facilitate the functioning of a liberalised and

market based economy. The liberalization resulted in the revision of the banking legislation to create the new Banking Act in 1989 which has subsequently been amended in 2002 and 2004. For the first time an Act (Non-Banking Financial Institution Act 1993) was enacted to cater for the activities of Non-Banking Financial Institution (NBFI).

4.1.3 FINSAP I AND II IMPLICATION FOR FINANCIAL LITERACY

The liberalization in the financial sector led to increased competition among financial institutions. Most of the financial institutions, who were predominantly situated in the urban areas, expanded their areas of operations into the rural areas. One key product they used was the “susu” scheme. The financial institutions sold their products to the rural folks while at the same time providing financial education so as to sensitize their rural customers on the benefits of their financial products.

Moreover, the liberalization of interest rate also had an implication for financial literacy. This was so because with the liberalization of interest rates, financial institutions were free to charge their own rates on the products they offered. Given that financial institutions could charge different interest rates coupled with the rising competition among them, they were compelled somehow to informally educate their prospective customers about the implications of interest rates on loans offered by banks. Further, the competition compelled financial institutions to adopt innovative ways of appealing to their customers with their products. Further, the establishment of the Ghana Stock Exchange also provided avenue for the general public to invest in securities. With this development, the scope of an individual’s financial decision was

broadened in that the stock market provided rich information on different kinds of investment opportunities.

Thus it was vital for customers to gain knowledge about savings, financial products, interest rates, investment choices, workings of a stock exchange etc. under FINSAP I and II programmes. The need for financial education is very crucial since the various reforms over the years are yielding some positive results in the financial sector. Ghana cannot harness the benefits of reforms introduced in the financial sector by government through the ministry of finance, Bank of Ghana and other external bodies, if the majority of Ghanaians remain financially illiterate. Financial education is therefore needed at all levels and for the entire population. Economies function more efficiently and effectively if the inhabitants are financially knowledgeable.

4.2 PROLIFERATION OF FINANCIAL INSTITUTIONS

The aftermath effect of the various structural adjustment programmes also resulted in the proliferation of financial institutions in the country. Also since 1988, there has been several amendments to banking laws including the promulgation of the following acts: Banking Act 2004 (Act 673) which replaced the Banking Law 1989 (PNDC Law 225); Foreign Exchange Act 2006 (Act 738) and Borrowers and Lenders Act 2008 (Act 773). As part of these amendments, the Bank of Ghana lifted the restrictions on the scope of operations of commercial banks and other banks that specialized in segments of the banking industry. With regards to insurance, the National Insurance Commission (NIC) was established under Insurance Law 1989 (PNDC Law 227), but now operates under Insurance Act, 2006 (Act 724). The object of the Commission, as detailed in Act 724 is to ensure effective administration,

supervision, regulation and control the business of Insurance in Ghana. NIC is mandated to perform a wide spectrum of functions including licensing of entities, setting of standards and facilitating the setting of codes for practitioners. These interventions led to the proliferation of universal banks, microfinance institutions, insurance companies, rural and community banks with numerous branches and innovative products.

4.2.1 Universal and Rural Banks

At independence, there were only three banks operating in Ghana namely; British Bank of West Africa, Barclays Bank DCO (Dominion Colonial and Overseas), and the Bank of the Gold Coast with limited products. As at now, there are twenty eight (28) licensed universal banks with so many branches offering variety of financial products. The Bank of Ghana (BOG) introduced the universal banking system in the year 2003. With this system in place, commercial banks are increasingly diversifying into non-traditional financial activities such as leasing and insurance services. Commercial banks these days have expanded beyond their traditional deposit-taking and balance sheet lending businesses as regulators increasingly allow banks to undertake investment banking, asset management and even insurance, enabling them to diversify their revenue sources and business risks. Aside the various products they are offering, the industry's branch network grew from 360 branches in 2004 to 833 branches in 2012. The branch network of the Ghanaian banking industry is set to increase in the next three years as banks implement their expansion strategies (Ecobank, 2013). Also, as at July 2014, 137 rural banks had been licensed to offer banking services to rural folks in Ghana. Thus since independence there has been tremendous growth in the banking sector.

With all these developments in the banking sector, it is expected that most of the populace would be financially included however, evidence available prove otherwise. Naushita (2013) reports that as at 2011, only 29% of the adult population of Ghana had an account at a formal institution. Although, this is slightly higher than the Sub-Saharan African average of 24%, it falls below the world average of 50%. The World Bank Global Financial Inclusion Index (2012) reveals that only about 30% of Ghanaians have bank accounts. Most Ghanaians are not patronizing the services being offered by the banks. May be paying much attention at improving the financial literacy of Ghanaians can help promote high financial inclusiveness.

4.2.2 Microfinance and Non-Bank Financial Institutions

Since 1994 FINSAP has focused on the development of non-bank financial institutions to fill the gaps in the financial markets not served by the formal banks (Aryeetey and Kanbur, 2005). The financial sector reforms paved way for the development of non-bank financial institutions and micro finance institutions among others. As at December 2013, the Bank of Ghana had on its register 58 Non-Bank Financial Institutions. Also as gathered from the Bank of Ghana website, Ghana now boast of 7 registered Financial Non-Governmental Organization, 50 registered Money Lenders and 390 registered Micro Finance Institutions. In addition, there are over 402 credit unions and financial cooperatives as well as thousands of “susu” collectors, who serve people in specific areas (Ecobank, 2013).

Although, informal financial service providers play an important role in financial service delivery to the poor and the disadvantaged, the operations of these financial service providers often pose a number of risks to customers. Apart from occasional

reports of companies ceasing operations abruptly or owners bolting with the monies of depositors, there are concerns that informal financial providers are charging high interest rates and/or using unconventional lending and recovery practices, thereby creating a sense of insecurity and tension among the operators and customers. These risks can threaten confidence in the financial system, if not addressed. Perhaps, educating consumers financially can help them shop around and choose the right accredited financial institution to deal with and also negotiate for better interest rate.

4.2.3 Insurance Industry

Towards Ghana's independence, local insurance companies began to emerge. The first among them was Gold Coast Insurance Company which was formed in 1955. General Insurance Company and Cooperative Insurance Society were later formed in 1957 and 1958 respectively. Government of Ghana purchased Gold Coast Insurance Company and took over Cooperative Insurance Society and merged them together to form State Insurance Corporation (SIC) which was incorporated in February 1962. Recently, the insurance market is becoming more vibrant and continues to make progress. As at January 2014, the insurance industry was made up as follows: 26 non-life companies, 19 life companies, 2 reinsurance companies, 63 broking companies, 1 loss adjuster, 1 reinsurance broker, 1 oil and gas company, and 4,537 insurance agents. The industry offers variety of life and non-life products namely: Liability Policies; Engineering Policies, Marine Policies, Fire Insurance Policy / Property Insurance, Motor Insurance Policy, Miscellaneous Insurance Policies, Life Products, Without Profit Conventional Products, With Profit Conventional Products, Unit - Linked Products, Pensions and Annuities Products and Index-Linked or Inflation Protection Products (www.nicgh.org).

Although, the insurance industry has been growing at an annual average rate of about 32 per cent for the past five years, patronage is still low. According to the Acting Commissioner of Insurance, despite the steady growth of the insurance industry in Ghana, only five per cent of the country's population hold any insurance policy, excluding public health insurance. He expressed regret that access to insurance services in Ghana was limited, especially among the low income-earning population. He said the low patronage of insurance services in the country was due to lack of knowledge about insurance products and services. Also lack of confidence and trust in the insurance companies due to negative publicity concerning payment of claims as well as benefits to individuals, and corporate entities also affected the industry (GNA, 2013). Perhaps one sure way to improve the patronage of insurance products and also boost the confidence of Ghanaians in insurance companies is through financial education.

4.3 DEVELOPMENTS IN THE CAPITAL AND MONEY MARKET

Ghana has witnessed massive development in the capital market in recent years. The various reforms and restructuring discussed in previous sections enabled the creation of private equity due to the liberalised nature of the economy after the reforms. For example government divested parts of her investments in state owned enterprises and also facilitated the thriving of private business through legislations and tax reforms. These reforms further culminated in the development of a capital market where entities could raise capital for their businesses. This section examines some of the developments in Ghana's capital market.

4.3.1 THE GHANA STOCK EXCHANGE

The Ghana Stock Exchange (GSE) was incorporated in July, 1989 as a private company limited by guarantee under Ghana's Companies Code, 1963 (Act 179). The Exchange was given recognition as an authorized Stock Exchange under the Stock Exchange Act of 1971 (Act 384) in October 1990, and trading on the floor of the Exchange commenced in November 1990. In April 1994, it was converted into a public company limited by guarantee. In 1993, the GSE was adjudged the sixth best performing index emerging among stock markets, with a capital appreciation of 116%. Twelve months later, it was the best performing index among all emerging markets, gaining 124.3% in its index level. As of October 2006, the market capitalization of the Ghana Stock Exchange was about 111,500 billion cedis (\$11.5 billion). As of December 31 2007, the GSE's market capitalization was 131,633.22 billion cedis (Acheampong and Agalega, 2013). In 2007, the index appreciated by 31.84%. In 2008 the GSE index was among the best performing index in the world and it continues to grow rapidly from its humble beginnings. As of 2011 market capitalization was GH¢ 47,347.23 million, and this shows a continuous increase over the years. Although, the exchange has performed creditably well since its insertion, only 37 companies are listed. There have been appeals for many more companies to get listed but they are adamant since they are not sure whether they can raise the needed capital considering the cost of floatation. Most of investors are more glued to short-term returns than long-term returns making the market unattractive to existing and potential investors.

These developments in the capital market have implications for financial literacy. More companies are likely to go public if they are sure that the public will subscribe

to their shares and that the floatation will be very successful. The public has a bigger role to play if companies are to get listed. The public can only play their part effectively if they have adequate information and also understand the operations of the stock exchange and opportunities for investment. There is the need to provide sound financial education to existing and potential investors which in the long-run will increase demand for shares and thereby attracting companies to get listed.

4.3.2 COLLECTIVE INVESTMENT FUNDS/MUTUAL FUNDS

Collective investment funds are administered by experts with sufficient knowledge and information in the area where investments are proposed to be made. This allows them to correctly plan the timing for purchase and subsequent sale of these investments. It provides a reasonably cheap means for various categories of investors to get a full-time manager to monitor their investments. In addition to the benefit of being administered by experts, the funds are highly regulated and closely supervised by authorities with a view to protecting the interest of the existing and potential investors and to prevent the promotion of schemes which are set up with the intention to swindle investors. Each fund has a predetermined investment objective to meet the short, medium and long-term needs of investors.

In recent time, collective investment schemes are fast becoming popular and more accessible to individual investors. Investments in mutual fund provide an effective and efficient way of raising funds for public and private sector development (Yeboah, 2009). The private sector, over the years in Ghana, had difficulties mobilizing sufficient funds for investment and other business ventures. This problem propelled government to undertake a number of financial sector reforms. The

surfacing of mutual funds into the Ghanaian financial market has been as a result of these reforms. This is to aid the private sector in their capital generation and funds mobilization drives so as to enable them achieve their organizational goals. The mutual fund industry in Ghana has registered significant growth during the past decade and has emerged as a significant financial intermediary (Yeboah, 2009). Databank Annual Report (2008) reports that mutual fund was first introduced in Ghana by Databank (Epack) Group in 1994 with a value of over ₵200 billion and 12,000 investors. Currently, there are about 30 collective investment schemes in Ghana. However, the culture of saving or investing in mutual fund in this part of the world has not formed part and parcel of the individual Ghanaian (Yeboah, 2009). How can companies or businesses especially the small ones raise adequate capital from mutual funds for their growth and expansion if the public is not saving or investing in mutual funds? How can the public or investors enjoy the numerous benefits provided by investing in mutual funds if they are not aware or have enough information about them? How can investors appreciate that there is no guarantee that one particular scheme will give them an “above average return” if they do not cautiously evaluate all facts concerning a particular scheme? Financial education is needed to stimulate investment in mutual funds, growth of businesses and the economy as a whole.

4.4 PENSION REFORMS

The Pensions landscape in Ghana has undergone several developments since the colonial era. In 1946, the Government introduced a non-contributory pension scheme, which was the first pension programme of its kind in the country, to cater for the retirement benefits of those who worked in the offices of the Colonial

Administration. Later, in the early 60's the "CAP 30" and Superannuation Schemes were introduced for certified teachers, university lecturers, and all government workers. The vast majority of ordinary Ghanaian workers could not benefit from these schemes. Therefore, the Social Security Act (No. 279) was passed in 1965 to cover all private and public sector workers who were not covered by the "CAP 30" schemes. The scheme was originally started as a Provident Fund to provide lump sum benefits for old age, invalidity and survivor's benefits.

Seven years later, the Social Security Act (279) was repealed to pave way for the establishment of the Social Security and National Insurance Trust (SSNIT) in 1972 under the NRCD 127 to administer the National Social Security Scheme. The Scheme ran for twenty-five years until it was converted to a Social Security Pension Scheme. During this period the funds generated from the contributions were invested in special government bonds at very low interest rates and very long maturity periods. As a result of the low interest rates and the rising inflation at the time the lump sum benefits due to retiring beneficiaries were insignificant. To resolve this situation, the Social Security Act, 1991 (PNDC Law 2427) was enacted to transform the 1972 Scheme from Provident Fund to a Defined Benefit Scheme, which brought some element of adequacy into workers' pension package.

However, the disparity between the two major public pension schemes – the "CAP 30" and SSNIT Schemes became more pronounced as the years went by. Consequently, there were agitations and protests by some public sector workers on the SSNIT Scheme demanding to be placed on the "CAP 30" scheme which was considered more favourable, particularly in terms of the lump sum benefit. These,

among other factors, resulted in the promulgation of the National Pension Act 2008 (Act 766) and the inauguration of the three-tier pension scheme (www.nbcghana.com).

In the old scheme, the informal sector (hairdressers, farmers, drivers etc.) had been excluded. However, provision has been made for them in the new pension scheme. The inclusion of the informal sector which constitutes about 85% of the working population is to enable them save towards their retirement or old age and also generate long term funds for economic development. This will also go a long way to reduce dependency and hardships that most retirees currently experience in their old age. The nature of the new pension scheme is such that it requires active participation of the contributors unlike the old regime, where contributors played no role apart from the payments made towards his/her pension. For instance, the second tier which is 'occupational based pension' scheme is mandatory for all employees and it is to be privately managed under a trust to provide benefits based on a defined contribution formula in the form of a lump sum payable on termination of service, death or retirement. Contributors are supposed to play an active role in identifying the trustee as such it places premium on a critical understanding of financial matters such as interest rate and rates of return. Again, the third tier which is a voluntary scheme comes with so many tax benefits inducing contributors to invest portions of their salary. Workers now have to search for information on financial matters so as to take advantage of the benefits associated with the new pension scheme. The third tier for example covers people who are self-employed and as such widens the scope of pension coverage thereby enhancing financial inclusiveness.

4.5 OIL FIND

The government of Ghana in 2001 continued its search for oil by embarking on an all-inclusive approach which served as an incentive to private companies to participate in the oil discovery process. Further incentives in the areas of taxation resulted in the involvement of several major international oil and gas firms like Tullow, Kosmos and Gasop. With the involvement of these private interest groups alongside a re-equipped GNPC, new discoveries of oil and gas in commercial quantities were made by both Kosmos and Tullow in what is now known as the Jubilee field. These efforts subsequently led to the production of oil in commercial quantities in December 2010.

Since the announcement of the discovery of oil in commercial quantities in 2008, both the government and the public at large have had heightened expectations about how the exploitation of the oil resources will propel Ghana to the path of accelerated economic growth and development and the achievement of international middle-income status. Available estimates suggest that oil revenues may increase government revenues by 30 percent and contribute between 6-9 percent to national income (Centre for Policy Analysis (CEPA), 2010).

Ghana stands to gain from increased growth of its Gross Domestic Product. Revenues from oil are expected to be sizable, being estimated to average US\$1 billion per year from 2011 to 2029, or about 5 percent of GDP (Bell, Heller and Heuty, 2010). The Jubilee field is expected to produce for a start 120,000 barrels per day increasing to about 240,000 barrels per day with expected revenue averaging \$5 billion. According to the current Minister of Energy and Petroleum, Ghana earned

\$1.4 billion from the commercial production and export of oil from 2011 to June 2013. Over the medium term to 2015, the economy is likely to record strong growth of around 8%, boosted by enhanced oil and gas production, improved private-sector investment and better public infrastructure development (African Economic Outlook, 2014).

Revised GDP estimates for 2013 as given by the Ghana Statistical Service showed a growth (including oil) in the economy of about 7.1%. Oil GDP for 2013 was at GHS 93.4625 billion recording an increase from 2012's GHS74.959 billion. Per Capita GDP for 2013 is at GHS 3,529.6 (USD 1,799.3). Ghana's growth prospects are anticipated to be positive in the long-term. Growth in 2014 is expected to remain modest at around 5% but it is projected to recover in 2016 when Ghana commences the production of gas and explores its new oil fields, barring any macroeconomic instability (World Bank Report, 2014). Through the Annual Budget Funding Amount (ABFA) as stipulated in the Ghana Petroleum Revenue Management Act, 2011 (Act 815), revenues will be made available to finance the development of sectors like agriculture, health and education for a diversified economy that supports poverty reduction efforts. Analysts have projected that the developments in the oil sector will propel developments in the non-oil sector.

According to World Bank Report (2014) Ghana has attained a lower middle income status. It is expected that with more oil discoveries and commercialization, Ghana's GDP will be boosted significantly, thereby enabling her to attain a middle income status. This means there will be direct and indirect creation of businesses and their associated employment effects. All things being equal, the citizenry will have an

improvement in their income. Since Ghanaians are going to earn much, it is expected that the cycle of spending most of their income on consumption will change. Ghanaians will have enough to save and invest. Where will they save or invest their surplus income? It is very imperative that we prepare as a nation to educate the citizenry on savings, investment, insurance and money management so they can make informed decisions when they receive a boost in their income.

4.6 FINANCIAL PROGRAMMES AND EDUCATION

The government of Ghana has put in place some measures to improve the state of financial literacy in Ghana. The government approved a National Financial Sector Strategic Plan in 2003 which aims, among other things to create awareness and educate consumers on access to financial services, make consumers understand their rights and responsibilities as clients of financial services and change attitudes to translate knowledge into behaviour. Also, annual financial week celebration was introduced by the Ministry of Finance and Economic Planning in September 2008 to hoist awareness and boost public understanding of the various products financial institutions are offering. During the launch in Accra there was a call on Ghanaians to learn about the key concepts of savings, budgeting and financial planning. So far four of the annual financial week celebrations have been organized under different themes.

The Ministry of Finance and Economic Planning is developing a National Financial Literacy Strategy (NFLS) to ensure that financial education is carried out in a sustainable manner. The NFLS is expected to be completed by the end of the year. It is also to ensure that tailor-made products are developed for the un-banked. This was

disclosed by the Deputy Minister of Finance at the opening of the 2014 National Financial Literacy Week. Also, according to the deputy minister of finance in Ghana, the government has included financial education in the syllabuses (Management in Living, Social Studies and Business Management) for Senior High School (SHS). The hope of this in general is to train SHS students with sufficient knowledge of fundamental financial issues and to aid them to make well-versed financial decisions as potential patrons of financial services.

Some non-governmental agencies have also initiated some form of financial literacy programme to complement the efforts of Ghana government. One such programme is the CAMFED model. This programme consists of 12 modules, jointly developed by Campaign for Female Education (CAMFED) and the University of Cambridge International Examinations, with inputs from Planned Parenthood Association of Ghana (PPAG), International Federation of Women Lawyers (FIDA) and Tamale Polytechnic Business School. Ghana Institute of Linguistics, Literacy and Bible Translation (GILLBT) supported in translating key words into Dagbani, Gonja, Anufo and Moor. The programme is being funded by The MasterCard Foundation. The modules are delivered in schools with the kind permission of Ghana Education Service, and to women groups and members of trades associations. The aim of the Financial Literacy programme is to enable young people acquire financial knowledge and skills so as to empower them to become activists in their communities. The Financial Literacy Programme embarked on by CAMFED seeks to fill the knowledge gap in financial literacy in the country, which is an essential catalyst for achieving economic growth and poverty reduction in underdeveloped economies. The programme educates people on budgeting, spending wisely,

calculating interest rates, starting and running a business, calculating profit, and savings, among others. These basic concepts are not a preserve of people in business; they are basic knowledge that everyone needs to have to enable them make right decisions about spending, investing excess resources and borrowing for various purposes (Atia, 2012).

Also, the Head of State Award Scheme in collaboration with Commonwealth Youth Programme Africa Centre has been implementing the Commonwealth Financial Literacy programme in Ghana for young people between the ages of 12 and 18 years. The objectives of the project are: to make sure that young people have a superior understanding of the worth of money, saving products and opportunities; to make young people appreciate and have a better understanding of the banking sector; to contribute towards enhancing the financial knowledge of young people in Ghana; and to translate adequate knowledge on good financial management into entrepreneurial attitudes and skills among young people. It is the ultimate dream of the programme to ensure that eventually, every child will have access to financial services, financial awareness through education, a dependable source of income and the will to save and build assets to promote their future stability. With this programme, it is expected that many young people will be equipped with the ability to make informed judgments and to take effective decisions regarding the use and management of money, and further build a solid relationship with financial institutions from their tender age (Head of State Award Scheme (Ghana), 2013)

These are about some of the few financial literacy programmes being run in Ghana. A lot needs to be done by the government, financial institutions and other

stakeholders to educate the youth since they are financially vulnerable. The youth require sound financial education and it's not just their problem. It's also Ghana's problem. The future of Ghana's economy is in danger if we do not provide tomorrow's adults the necessary education to boost their capabilities to handle and manage their own finances. Providing sound financial education is the key to enhancing skills, attitude, and behaviour in personal finance, thus leading to better financial outcomes.

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4.7 TECHNOLOGY AND INNOVATION IN THE FINANCIAL SECTOR

Almost all transactions being done in financial and non-financial institutions worldwide currently involve the use of technology because it makes transactions more accurate, faster, secure and profitable as compared to the manual approach formerly in use. Over the years, there have been tremendous technological and innovative advancements in the financial sector and payment system in Ghana. These innovations include the introduction of Automated Teller Machines (ATM), Internet Banking, Telephone/Mobile Device Banking, Credit Card Transactions, PC-Banking, Electronic Funds Transfer at Point of Sale (EFTPoS), Mobile Money, Mobile Insurance etc. These products are expected to improve financial inclusiveness and also make the Ghanaian economy a cashless one. The move from cash to electronic payments involves behavioural change which takes time (Bawumia, 2010).

The ATM cards/debit cards which were introduced to decongest the banking hall usually allow card holders to withdraw cash, current account balance and even print mini-statement. Internet banking products and services are also on offer by financial

institutions. The idea behind internet banking according to Essinger (1999) is: “to give customers access to their bank accounts via a web site and to enable them to enact certain transactions on their account, given compliance with stringent security cheques”. Internet banking by its nature offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking. Ghanaian banks have started offering financial services via the internet. Customers can now access their account balances and order payments from their accounts.

Mobile banking is also one of the innovative products on the market. Mobile Banking is usually defined as carrying out banking business with the help of mobile devices such as mobile phones or personal digital assistant(s) (Georgi and Pinkl, 2005). Major banks in Ghana have started using the mobile platform to deliver services such as balance inquiry, transaction notice etc. account. Telephone banking is also one of the innovative products on offer. The services available with this system are; ascertaining credible information about the bank’s products, customers’ complaints, bank statements, cheque book request and any other complaints and inquiry (Abor, 2004). Marfo-Yiadom and Ansong (2011) report that banks have several benefits to gain from innovative banking products such as telephone banking nonetheless little has been done by them to popularize the phenomenon. Recently, however, most banks operate telephone banking extending their services beyond their usual working hours of 8 hours a day.

There has also been an introduction of financial services via mobile devices by some telecommunication giants such as MTN and Airtel Ghana. The Mobile Money is a cash management service available on the mobile phone or internet. It mainly

facilitates money transfer in the Ghanaian market. The service can also be used for reloading of airtime units and for payment of utility bills, goods and services. The service is available to both mobile and non-mobile users. With this service, customers are able to save money in their “wallet” and this gives them immediate access to their money anytime and anywhere they wish using their mobile phone or the Internet. It also enables clients to send money easily to family and friends, withdraw cash at authorized mobile money merchants, service centres or partner bank branches, pay utility bills easily without commuting or queuing as well as top up airtime for their mobile phones. The introduction of branchless banking which allows banks to partner telecom companies to deliver mobile money services has also been made possible. Another innovative product on offer is mobile insurance. In recent times, both MTN and Airtel Ghana have introduced insurance policies. The policies cover death and health related issues. The premium payment for insurance is deducted from the subscriber’s Mobile Money wallet or credit. These services offer subscribers or mobile phone user the opportunity of having insurance cover easily.

In a bid to further enhance financial inclusion, the Bank of Ghana is supporting the harnessing of Information Communication Technologies (ICT) to deliver financial services through a number of innovative and varied ways. This led the bank to establish Ghana Interbank Payment and Settlement Systems (GhIPSS) to promote the usage of the gh-link platform, e-zwich payments platform and smart card involving the use of biometric smart card technology to facilitate savings and payments for the unbanked and under-banked. There are more plans by GhIPSS to introduce more products on the gh-link platform. Clients with banks that are linked to the gh-link platform can now access their funds from about 1,000 ATMs across

the country with their local cards. This is because 17 banks now have their ATMS linked to gh-link and therefore share a common electronic platform (GNA, n.d). The interconnectivity makes it possible for their clients to use each other's bank ATM.

These are about some of the innovative and ICT driven products in the Ghanaian market. It is expected that as competition continues to heighten, most financial and non-financial service providers will come out with more innovative products for the benefit of consumers. These financial products are intended to make the most of the payment platform, provide enhanced and convenient banking to clients. Such products come in handy for organizations who want a fast and secure way of making or receiving payments. These products will be valuable for service providers, utility companies and other institutions who want to improve on their revenue collections. Products like internet banking will aid customers to monitor regularly, transactions on their accounts, just with a click of a button. These products have also broadened the scope of financial inclusiveness.

Are Ghanaians embracing the current products on offer and will they utilize new ones that will come into the market although these products provide a lot of benefits to the individual consumer and the nation at large? According to Abor (2004) the ATM has been the most successful delivery medium for consumer banking in Ghana. However, a world bank report suggests that although, efforts are being made to decongest the banking halls with the setting up of automatic teller machines (ATM) at vantage points in the country, people still use bank tellers as the major form of bank deposits and withdrawals. The report show that 94.3% of account

holders use the bank tellers as a mode of deposits, while 71.2% use them to withdraw cash. Only 24 percent of account holders make their withdrawals from the ATMs. The report reveals that only 1% of the adult population use mobile phones to send money while only 1.5% of adults use mobile phones to receive money, and only 0.9% use the mobile phone to pay bills.

Despite the numerous benefits that the nation, consumers, financial institutions, service providers etc. stand to gain, it appears that the patronage of these products is low. Consumers probably see these innovations as complex since they do not have enough knowledge about them. Educating the general public about the numerous benefits and even the simplicity of financial products will help reduce long queues in banks for minor transactions such as money transfers. Financial literacy will help individuals to have better understanding of the pros and cons of these innovations which will improve the patronage of financial products. This places a greater need for financial literacy among all consumers especially the youth in order to get them acquainted with these innovations.

4.8 CURRENT ECONOMIC DEVELOPMENTS

According to World Bank Report (2014) Ghana faced major macroeconomic challenges in 2014 as its fiscal and current account deficits remain very high. Economic growth reduced to 0.3% (year on year) in the third quarter of 2013, while inflation is on the rise. The stock of public debt reached close to 60% of GDP in 2013. Ghana's net international reserves have also declined significantly, covering less than one month of imports of goods and services by the end of February 2014.

The high fiscal deficit, which reached 10.9% of GDP in 2013, remains the biggest source of vulnerability of the Ghanaian economy, and does not include accumulation of new arrears. The main drivers of the deficit in 2013 were the high wage bill, increased interest costs, the energy subsidy, and a shortfall in revenue collection. The government has taken some measures to reduce fiscal deficit. These include a 2.5 percent increase in the VAT rate, moratorium on the award of new contracts, and adjustment in utility tariffs and petroleum product prices. However, the deficit is projected to come down to around 10% of GDP (World Bank Report, 2014). Also, headline inflation reached 14.0% in February 2014, up from 13.5% registered in December 2013. Consumer price inflation breached the monetary policy target of $9\% \pm 2$ for 2013. Inflation has been on the rise since January 2013 and the rising trend is expected to continue due to adjustments in prices of petroleum and utilities, rising prices of imported products due to the depreciation of the Ghanaian cedi, and strong demand pressures from the fiscal expansion. Producer price inflation reached 27% in February 2014.

Also, for some time now, the Ghana Cedi has been depreciating against the currencies of the major trading partners during the review year. In the inter-bank market, the Ghana Cedi recorded cumulative annual depreciation of 17.5 percent in 2012. The Ghana Cedi recorded depreciation of 16.7 percent and 20.1 percent against the Pound Sterling and the Euro, respectively, in 2013 according to the minister of finance and economic planning. In the first half of 2014, the cedi saw no sign of stability, depreciating by 17%. However, the cedi has relatively seen some minor stability in the 3rd quarter of 2014. The depreciation in the cedi has badly affected economic activities in the country. Fuel prices have increased due largely to

the depreciation of the cedi, a situation which led to the increase of transport fares. While the depreciation could be positive for some exporters its negative impact to a large extent affect fixed income earners, inflation, interest rates and economic activities. All these developments have affected businesses adversely and have also increased the cost of living in Ghana. So it is very critical for consumers to find innovative ways of managing their personal finance to minimize the negative effects of these developments, hence the need for sound financial education.

Another development that has received massive public criticism in recent times is the introduction of VAT on banking services. The Value Added Tax 2013, (Act 870) which received Presidential assent on 30th December, 2013 and notification in the Gazette on 31st December, 2013 has extended the coverage of the tax to include the supply of financial services that are rendered for a fee, commission or a similar charge. Some members of the public have expressed anger at Government's decision to charge 17.5 percent on their banking transactions. Some business owners think that the government is crippling their market and that since 2013 the government has been increasing taxes, import duties and levies, utility tariffs, and petroleum products prices and now VAT on banking services. Some are of the view that the introduction of VAT is going to make the cost of people getting financial services more expensive. Some Ghanaians have indicated that they might even withdraw their savings from commercial banks. There is also the misconception that the new VAT law applies to all banking services. In the midst of all these views and agitation, the Ghana Revenue Authority (GRA), after a careful evaluation of progress of the on-going publicity and education programme on VAT on financial services, and taking cognizance of the request by sections of the banking community for extension of the

period of preparation for implementation of the tax, the commencement date of 1st July, 2014 originally set, has been postponed until further notice. According to the GRA the decision was taken in consultation with the appropriate stakeholders to allow for more education of the general public and adequate lead time for the banks to achieve the level of preparedness that will ensure a hitch-free implementation. Probably, sound financial education will adequately prepare Ghanaians to embrace and appreciate the introduction of the new VAT law and other financial policies.

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4.9 CONCLUSION

The complex and varieties of financial products on offer call for efforts to ensure that consumers have better understanding of these products. Financial education is therefore vital in equipping consumers with necessary financial knowledge to make wise financial decisions. Sound education can provide Ghanaians especially, the youth, with the financial knowledge required to generate family budgets, instigate savings plans, manage debt and make sound investment decisions. It is important to note that financial literacy is not meant for only sophisticated consumers but all consumers. The benefits of financial literacy are enormous and extend well beyond sound personal financial decisions to the promotion of a sturdy and resilient financial system, and eventually lead to the efficient allocation of resources within the economy. The financial wellbeing of individuals/households can contribute immensely to the wellbeing of the economy since households' spending, saving and investment considerably impact positively on the economy, hence the need for sound financial education for all Ghanaians especially the youth who are the future leaders of our dear nation.

CHAPTER FIVE

RESEARCH METHODOLOGY

5.0 INTRODUCTION

According to Welman and Kruger (2001) research involves the application of various methods and techniques in order to create a scientifically developed knowledge by using objective methods and procedures. The techniques must be appropriate for the tasks. Also the validity and reliability of every research is dependent to a great extent on the research methodology adopted for the study. The methodology for the research must therefore be scientific. That is to say, the process must be rigorous, logical and unbiased. This chapter presents a detail and systematic process that the researcher adopted to achieve the objectives of the study. The main discussions in this chapter include: the research paradigm, the research design, research strategy, population of the study, the sample size and sampling technique, data sources and collection method, validity and reliability of data, data analysis, model specification and ethical considerations.

5.1 THE RESEARCH PARADIGM

An approach to a research is largely influenced by the researcher's philosophical view of the social world. The researcher refers to paradigms to organize his/her observations and these are the windows through which the researcher interprets reality, infused with his/her experience, knowledge and feelings (Neuman, 2006; and Saunders et al., 2007). Research paradigm is the overall map that guides the researcher and the choice of the paradigm adopted determines the research design and data collection methods undertaken (Bryman and Bell, 2003; Sobh and Perry, 2005). This section examines and justifies the appropriate paradigm and the

associated elements guiding this study. There are four main paradigms guiding the researcher, namely, *positivism*, *Interpretivism*, *critical theory* and *realism* (Healy and Perry, 2000; and Neuman, 2006).

5.1.1 Interpretivism

Interpretivism emphasizes the existence of multiple constructed realities relative to the context and shared meanings resulting from the social interactions of people (Neuman, 2006). It is associated with "*heumeneutics*", implying that the real meaning is obscured and embedded within the context (Neuman, 2006) and "*constructionism* or *social constructionism*", implying that reality is socially constructed (Saunders *et al.*, 2007). People interpret different meanings to situations, which affect their actions and interactions with the environment within the context of their socially constructed perception of reality. Researchers adopting this paradigm seek to comprehend the subjective meanings people socially construct and appreciate the complexities of human experience, motivations and interactions (Bryan and Bell, 2003; Neuman, 2006; Saunders *et al.*, 2007). Interpretivists adopt a value position of "*relativism*", that is all values are equally valid for an individual and no single value is better than others (Neuman, 2006). The epistemological stance requires the researcher to gain access to people's subjective perceptions of meanings and interpret their social actions from their perspective (Bryan and Bell 2003). Interpretivists aim to provide rich insights on complex human socially constructed realities within specific contexts (Saunders *et al.*, 2007). As it involves active researcher participation, the findings can be subjective since this depends on the researcher's perception of reality. The subjective nature of this approach may be

unsuitable for more objective research that involves economic, technological or organizational realities (Healy and Perry, 2000).

The interpretive paradigm is unsuitable for this study as this paradigm is more concerned with providing a subjective insight on the complexities of human interactions. This research is relatively objective, generalizable and does not involve evaluating the social context within which people construct their realities.

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5.1.2 Critical Theory

Critical theory emphasizes on transformational research to challenge societal norms and values (Healy and Perry 2000). It seeks to expose myths and uncover hidden truths to empower less powerful people, which may transform the social order (Neuman, 2006). It takes a strong value position approach to radically emancipate people from their historical structures and strongly entrenched beliefs (Healy and Perry, 2000).

The subjective nature of critical theorists' approach makes it inappropriate for this study as this is a descriptive and explanatory research on the extent of financial literacy among university students.

5.1.3 Realism

Realism focuses on the meanings associated with people's perception of reality (Easterby-Smith, Thorpe and Lowe, 1991). It explains that external reality exists independently from human perceptions but recognizes that subjective realities are constructed from human social interactions (Saunders et. al, 2007). This makes

realities 'imperfectly and probabilistically apprehensible' (Healy and Perry, 2000, p.119). This perception of reality depends on the triangulation of other perceptions to give a single apprehensible view of reality, which is difficult to be operationalized (Lincoln and Guba, 1985, p.431). The findings are probably true as opposed to that of the positivist's *absolute truth* (Healy and Perry, 2000, p.119). Realism research predominantly uses qualitative methods when collecting data and focuses on people's attitudes and socially constructed realities (Easterby-Smith et al., 1991; Sobh and Perry, 2005). Qualitative methods such as interviews and focus groups have close participation between the researcher and the participants. Realism research should be conducted using multiple methods to provide a better comprehension of the embedded and unobservable reality.

Since realism focuses on the meanings attached to people's perception of reality, it makes it inappropriate for this study. This is a research that examines the extent of financial literacy among university students and not just students' perception about reality.

5.1.4 Positivism

Positivism emphasizes an absolute truth to reality, objectivity and hypothesizes that the observable phenomenon can be explained using causal generalizations (Neuman, 2006; and Saunders et. al., 2007). Positivists seek to identify universal causal laws to enable control and predictability (Sekaran, 2003).

The other three paradigms utilize mainly qualitative methods, whereby there is active researcher-participant involvement to better comprehend the subjective meanings

constructed by the participants being observed. However, positivists prefer using quantitative data to measure objectively and provide value-free empirical evidence, which are not influenced by social, cultural or other factors (Neuman, 2006). Positive studies assume laws and principles can be developed and generalized for various situations and there is an underlying reality discoverable by an independent observer (Tinker, Merino and Neimark, 1982). However, positive researchers are criticized for ignoring the complexities of human social interactions, which are complex and fluid rather than static (Healy and Perry, 2000; Hines, 1988; Neuman, 2006). Positivists rationally link the abstract ideas to specific measures of the social world and remain independent and neutral when interpreting evidence and replicating other studies (Neuman, 2006; and Saunders et al., 2007).

This study mainly adopts a positivist paradigm since it seeks to objectively investigate the level of financial literacy among university students using procedures and approaches that can be replicated. It seeks to test hypotheses by gathering quantitative data through a survey instrument.

5.2 RESEARCH DESIGN

A research design is a plan developed to attain the research purpose. It aims to ensure that the research can clearly answer the research problem, and involves systematizing the research activity, involving the collection of data and analyzing the data (Easterby-Smith, Thorpe and Lowe, 1991). A good research design can provide valid conclusions and suggestions from the research (Ryan, Scapens and Theobald, 1992). This section examines and justifies the appropriateness of the research design

adopted. There are three main types of research design, namely, exploratory, descriptive and explanatory research design.

5.2.1 Exploratory Research

Exploratory research is conducted into a research problem or issue when there are very few or no earlier studies to which one can refer for information about the issue or problem. The aim of this type of study is to look for patterns, ideas or hypotheses, rather than testing or confirming a hypothesis. In exploratory research, the focus is on gaining insights and familiarity with the subject area for more rigorous investigation at a later stage. Thus, exploratory research becomes handy to the researcher when there is the need to acquire new insights into a phenomenon in order to formulate a more precise problem or hypothesis but in the case where the theory is too general or specific, hypothesis cannot be formulated. Therefore a need for an exploratory research is felt to gain experience that will be helpful in formulating relevant hypothesis for more definite investigation (Babbie, 2007).

Typical techniques used in exploratory research include case studies, observation and historical analysis, which can provide both quantitative and qualitative data. Such techniques are very flexible as there are few constraints on the nature of activities employed or on the type of data collected. The research assesses which existing theories and concepts can be applied to the problem or whether new ones should be developed. The approach to the research is usually very open and concentrates on gathering a wide range of data and impressions. As such, results of exploratory research rarely provide conclusive answers to problems or issues, but

they can provide significant insight into a given situation. Thus they are not useful in decision making by themselves (Kotler et al, 2006).

5.2.2 Descriptive Research

Descriptive research is conducted to describe phenomena as they exist. It gives an accurate description of the characteristics of the subject, population, market, situation or problem the researcher is investigating (Robson, 2002). A descriptive study provides a comprehensive and clear picture by describing the characteristic of variables in the phenomena of interest to the researcher from an individual, organization, industry or other perspective (Sekaran, 2003). It does not answer questions of “how, when and why” characteristics of a situation or population occurred. Rather it addresses the "what" questions (Shields and Rangarajan, 2013). The characteristics used to describe the situation or population are usually some kind of categorical scheme known as descriptive categories. Descriptive research often involves collecting information through data review, surveys, interviews, or observation, to ascertain and describe the characteristics of the pertinent issues of the problem under consideration.

Conclusively, descriptive research aims to achieve the following goals: provide an accurate profile of a group or situation; give description to a process, mechanism or relationship; provide a verbal or numerical picture of the situation; source for information to stimulate new explanations; contextual presentation of basic background information; and categorization of the problems and documentation of information that contradicts prior beliefs about a subject.

5.2.3 Explanatory Research

Explanatory research on the other hand is a continuation of descriptive research. The researcher goes beyond merely describing the characteristics of the situation or problem, to analyzing and explaining the why or how the phenomenon being studied is happening. Thus, while descriptive research may be employed to identify and obtain information on the characteristics of a particular problem or issue, explanatory research aims to understand phenomena by discovering and measuring causal relations among them. In some circles, it is referred to as causal research design (Saunders et al., 2007). Explanatory research is conducted when there is already a hypothesis as to why something is happening. Questions and tests are designed to support that hypothesis, and proven to be correct or not.

Explanatory research tries to: determine the accuracy of a principle or theory; find out which competing explanations is better; advance knowledge about an underlying process; link different issues or problems under a common general statement; build and elaborate a theory so it becomes complete and extend theory or principle to new areas by providing evidence to either refute or support an explanation (Neumann, 1994). Explanatory research frequently includes descriptive elements but goes beyond this to identify and explore the causes underlying the effects and the nature of the relationships between the dependent and independent variables.

In summary, to provide valid conclusions and recommendations, descriptive and explanatory research designs were adopted for this study. The purpose of a descriptive research as earlier mentioned is to portray an accurate profile of persons, events or situation (Robson, 2002). This study seeks to collect data to provide a clear

picture and accurate profile of the financial literacy level of university students in Ghana, hence the use of descriptive research design. Explanatory research studies aim at testing hypotheses to explain the nature of certain relationships, or establish the difference among groups, or the independence of two or more factors in the situation (Sekaran, 2003). This study is deemed to be explanatory since it seeks to establish and explain the relationship between financial literacy and personal characteristics of students. Also, it goes a step further to ascertain whether there is a causal relationship between level of financial literacy and students' financial decisions/opinions/practice. In this study descriptive research was used to establish a factual picture of the issue under investigation, whereas explanatory research was used in explaining the why and how of some group of university students are more knowledgeable than others.

5.3 RESEARCH STRATEGY

Based on the designs chosen for this study, the survey research strategy was adopted. This strategy has been used in many financial literacy studies (see Ansong and Gyensare, 2012; Lusardi, 2012; Hastings and Mitchell, 2011; Beal and Delpachitra, 2002; and Chen and Volpe, 2002). The survey strategy is a popular and familiar strategy in business and management research and is most frequently used to answer who, what, where, how much and how many questions. Surveys are popular as they allow the collection of a large amount of primary data from a sizeable population in a highly economical way (Saunders et al., 2007). Often obtained by using a questionnaire administered to a sample, these data are standardised to allow for easy comparison. In addition, the survey strategy is perceived as authoritative by people in general and is both comparatively easy to explain and to understand (Saunders et

al., 2007). The survey strategy can be used to collect quantitative data which can be analysed quantitatively using descriptive and inferential statistics. In addition, the data collected can be used to suggest possible reasons for particular relationships between variables and to produce models of these relationships. Using a survey strategy therefore gives more control over the research process and, when appropriate sampling is used, it is possible to generate findings that are representative of the whole population at a lower cost than collecting the data for the whole population.

A survey strategy was used since such a method would enable the researcher to collect a large amount of primary data from a sizeable population in a highly economical and timely way. The survey strategy best suits this work considering the large student numbers and sample size selected for the study. It was the most effective strategy since the researcher sought to gather a large amount of data spanning from students' knowledge in personal finance, their financial decisions/opinions/practice and personal data. The survey strategy employed the use of a questionnaire to gather the data. Thus, the use of quantitative approach to data analysis was mostly employed in this study. The research instrument was designed to contain data that could usefully be quantified to help the researcher answer the research questions and to meet the objectives of the study.

5.4 POPULATION OF THE STUDY

The population of a study is the collection of all possible individuals, objects or measurement of interest (Mason et al, 1999). From Saunders et al (2007) population of study is the full set of cases from which a sample is taken. For this study, the

population consists of all university students in Ghana. Data on the estimated total population of university students in Ghana was not readily available. However, information gathered from the sampled universities estimated their total population to be about 217,637 (see Table 2 below). With the population of the major public universities captured and with population of private universities averaging about 3000, it can be deduced that the population of university students in Ghana is in a region of 300,000 or less.

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Table 2: Universities and Sample Distribution

NO.	Public Universities	Student Population	Sample based Proportion	Number of Students Assigned	% of Students
1.	University of Ghana	48,475	1,114	860	17.2
2.	University of Cape Coast	35,922	825	830	16.6
3.	Kwame Nkrumah University of Science and Technology	41,462	953	860	17.2
4.	University of Education, Winneba	43,968	1,010	860	17.2
5.	University for Development Studies	20,000	459	460	9.2
6.	University for Professional Studies	10,000	230	230	4.6
	Private Universities				
7.	Christian Service University College	1,826	42	150	3.0
8.	Garden City University College	2,192	50	150	3.0
9.	Ghana Telecom University College	4,000	92	150	3.0
10.	Presbyterian University College	2,792	64	150	3.0
11.	Catholic University College	4,500	103	150	3.0
12.	All Nations University College	2,500	57	150	3.0
TOTAL		217,637	5,000	5,000	100

Source: Author's construct

5.5 SAMPLE SIZE AND SAMPLING TECHNIQUE

It is often impossible and generally accepted that the entire population for the study cannot be studied. This is normally due to the difficulty on the part of the researcher in getting access to the whole target population normally due to the size of the population, time constraints and the cost involved. To address the challenge of access to the complete population, representative samples are thus prescribed in any scientific study (Saunders et al., 2007). Since it was impossible to cover the entire population given the population size, time and cost, a sample was used. The smaller the absolute size of the sample and, to a far lesser extent, the smaller the relative proportion of the total population sampled, the greater the margin of error. Within this, the impact of absolute sample size on the margin of error decreases for larger sample sizes (Saunders et al., 2007). De Vaus (2002) argues that it is for this reason that many market research companies limit their sampled sizes to approximately 2000. Unfortunately, from many samples, a 100 per cent response rate is unlikely to be achieved, and so the sample will need to be larger to ensure sufficient responses for the margin of error required.

Following, the assertion by De Vaus (2002) and the recommendation of Saunders et al. (2007) on required sample size for a population of 1,000,000 at 98% confidence level, a sample of 5000 was selected which far exceeds the minimum of 2395 recommended (see Table 3). The sample size of 5000 students was drawn from 12 universities in Ghana. The sample included students from six private universities and six public universities. Sampling was done in such a way that students cut across various levels and subject areas in the universities.

Table 3: Sample Sizes for Different Sizes of Population at a 95 Percent Level

Population	Margin of Error			
	5%	3%	2%	1%
50	44	48	49	50
100	79	91	96	99
150	108	132	141	148
200	132	168	185	196
250	151	203	226	244
300	168	234	267	291
400	196	291	343	384
500	217	340	414	475
750	254	440	571	696
1000	278	516	706	906
2000	322	696	1091	1655
5000	357	879	1622	3288
10000	370	964	1936	4899
100000	383	1056	2345	8762
1000000	384	1066	2395	9513
10000000	384	1067	2400	9595

Source: Saunders et al., 2007

Both probability and non-probability sampling techniques were employed in selecting the twelve universities. Purposive sampling technique was used to select the six public universities while simple random sampling method was used in selecting the six private universities. The six public universities included in the study are University of Ghana (UG), Kwame Nkrumah University of Science and Technology (KNUST), University of Cape Coast (UCC), University of Education-Winneba (UEW), University for Development Studies (UDS) and University for Professional Studies (UPS). UG, KNUST, UCC and UEW were purposively selected since they are the traditional universities with large student numbers. UEW for instance has several campuses across the country. UDS was chosen since it is the only prominent university in the northern sector of Ghana and hence could not be excluded from the study. UPS was selected since it is the only university in Ghana that runs academic together with professional programmes. For the private universities, only those accredited by the national accreditation board and have/had

graduated students before were included for selection (see appendix 2 for list of private universities).

Stratified random sampling technique is used to select the students for this study. Stratified random sampling is a modification of random sampling in which the researcher groups the population into two or more strata based on one or a number of features. Grouping the population into different but relevant strata meant that the sample is more representative, as it ensured that each of the strata was well represented within the sample (Saunders et al., 2007). This technique was chosen primarily based on the objectives and hypotheses set out in this study. The population was first divided into three strata based on the area of specialization of the students. The students were grouped under business/economics, other humanities and sciences. After the first stratification, the population was regrouped based on the level of study of the students, namely first year undergraduate, second year undergraduate, third year undergraduate, fourth year undergraduate and finally postgraduate students. Due to the complexity of data collection and to increase participation rate, the researcher personally administered the questionnaires to students at a previously arranged lecture. For the convenience and in agreement with lecturers concerned, questionnaires were administered either at the start of a class or at the end of the class. Thus the questionnaires were distributed to all students who were available.

Convenience sampling method is normally prone to the problems of bias and lack of control. However, these problems are less important where there is little variation in the population (Saunders et al., 2007). Since there are only minor variations in the

population of university students, the problems of bias and non-representation is least important. This method is fully complemented by the stratified sampling which ensures that each type of university (public and private), subject area, and level of study is adequately represented within the sample.

Initially proportional sampling was considered where the sample size was shared in proportion to the population of the universities. However, it was noted that most of the private universities will not get good representation from each of the three academic disciplines (business, humanities and science) and the five levels/academic rank (level 100 to Postgraduate) that were considered in the stratified sampling. In all 15 groups were considered for universities with post-graduate students and 12 from universities without post graduate students. Sample size allocated to all the university was shared equally to all the 12 or 15 groups. For instance, Christian Service University College (12 groups) was going to get 4 students per strata. To ensure that private university students are adequately represented, all the private universities were assigned a minimum number of 150 respondents. The number of students in the sample from public universities was capped at 860 respondents to boost the numbers of the private universities. Table 2 provides information on the universities included in the study, students' population, sample proportion based on the population of the university, sample size assigned to each university and percentage of sample size assigned for the study.

The population of the universities were sourced from university websites, fact/statistics books, staff of the universities and congregational address by Vice Chancellors. Mostly, the figures reflect that of 2012/2013 academic year.

5.6 DATA SOURCES AND COLLECTION METHOD

The research was based on primary data that was collected from the field. A comprehensive questionnaire designed to cover major aspects of personal finance, including financial literacy on general knowledge, savings and borrowing, investments, and insurance, was used to collect the data. The study adapted the questionnaire of Chen and Volpe (1998) which the researcher saw to be comprehensive in addressing the objectives of the study. The questionnaire is structured into seven sections. The first section sought to obtain demographics data about the respondents in order to help in testing the various hypotheses developed for the study. Specific questions are asked on gender, age, level of education, area of study and work experience. The second section of the questionnaire focuses on testing respondents' knowledge of basic issues in general personal finance. Questions in this section bother on financial planning, budget, cash management etc. It is expected that students who are financially literate will have knowledge of basic issues in financial planning and cash management, hence the questions under this section. Section three examines knowledge about savings and borrowing. Generally, questions under this section bother on knowledge of savings, loans and overdraft facilities. Respondents who are financially literate are expected to have knowledge about basic issues in savings and borrowing.

The fourth section examines students' knowledge of basic issues in investment such as risk return relationship, short term and long term investment. These are fundamental questions on investment that financially literate persons are expected to know. Section five gathers respondents' knowledge of basic issues in insurance such as premium, rationale for taking an insurance policy and the health insurance

scheme. Students were also quizzed on their personal financial matters, decisions and practice under section six. This section was added to enable the researcher test the last hypothesis of the study which seeks to find out the relationship between financial literacy and financial opinion, decisions and practice. The seventh and final part of the questionnaire focuses on questions that measure how students are exposed to financial issues.

5.7 RELIABILITY AND VALIDITY OF DATA

The validity of a research instrument refers to how well the instrument measures what it is supposed to measure (Crocker and Algina, 1986). One of the ways employed to achieve content and face validity, was the adaptation of research instrument used by researchers such as Chen and Volpe (1998) and of Lusardi, Mitchell and Curto (2010). Due to the differences in socio economic context, the instrument was modified and sent to experts in both academia and industry for vetting. Those in academia have expertise in financial management as well as survey design (Crocker and Algina, 1986). My supervisors also assisted immensely in the design of the questionnaire. Their comments ranged from the ability of the instrument to gather data necessary to answer the research questions, whether the questions were a good measure of the constructs, and whether anything needed to be added to the survey in order to provide the desired data. An expert from the insurance industry reviewed the questions on insurance. The questionnaire was used in a pilot and the feedback received from the participants was used to refine the instrument for the main research.

Reliability is the extent to which an instrument is consistent in its measurement over time and across situations (Crocker and Algina, 1986). In other words, if someone was to take the survey various times, the individual's score should remain relatively consistent with little deviation. Thus, an instrument can be reliable without being valid but it cannot be valid unless it is reliable (Pedhazur and Schmelkin, 1991). The reliability of the survey instrument was assessed using Cronbach's Alpha. This allowed for the measurement of the overall reliability and consistency of the scales from the survey instrument (Crocker and Algina, 1986). The alpha coefficient for the 26 items used to measure financial literacy is 0.89, suggesting that the items have relatively high internal consistency. To encourage participation, the students were promised that a feedback on their financial literacy test will be made available to them. Since most of them provided their email addresses and telephone numbers to get the feedback, it is expected that the responses given by the respondents will be objective and reliable.

5.8 DATA ANALYSIS

The findings are mainly presented in the form of Tables. The mean percentage of correct scores for each question, section and the entire survey was used to measure the level of financial literacy of the students. This approach is very consistent with existing literature (Danes and Hira, 1987; Volpe, Chen, and Pavlicko, 1996; Chen and Volpe, 1998). The mean percentage scores are grouped under correct, incorrect and don't know (Lusardi et al., 2010). Further, the mean percentage of correct scores is grouped into three grades: grade (1) 80% and above, (2) 60% to 79%, and (3) below 60% (Chen and Volpe, 1998). The first, second and third grades represent a relatively high level of knowledge, moderate level of knowledge and a relatively low

level of knowledge respectively. These are used as benchmarks in determining the literacy level of students. Also, the KNUST grading system is used to portray a vivid and familiar picture of the financial literacy level of students. The grading system group students' scores into five categories: 70% and above (A - Excellent), 60-69% (B - Very Good), 50-59% (C - Good), 40-49% (D - Satisfactory) and below 40% (F - Fail). The analysis of the data is in two forms - univariate, and multivariate.

5.8.1 Univariate Analysis

The analyses cover the descriptive statistics of the sample; the literacy level of students in general money management, savings and borrowing, investment and insurance; and univariate analysis of differences in the financial literacy level among subgroup of students. From existing literature, the level of financial literacy is found to vary among subgroups of students (Chen and Volpe, 1998). This study provides further evidence of the differences using analysis of variance (ANOVA) and Levene test for equality of means. Also, the Levene test was used to merge categories with no significant differences in their financial literacy level in the multivariate analysis. Categories with small numerical counts were also merged. For instance, students in level 100 and 200 as well as Level 300 and 400 were merged into rank1 and rank2, respectively.

5.8.2 Multivariate Analysis

The logit model employs an explanatory variable coefficient or marginal effect to predict the occurrence likelihood of a binary dependent measure (Lusardi, Mitchell and Curto, 2010; and Dielman, 2001). The participants are classified into two groups using the median percentage of correct scores of the sample. Respondents with

scores higher than the median are classified as those with relatively more knowledge in finance, coded as "1", and respondents with scores equal to or below the median were classified as students with relatively less knowledge, coded as "0". This approach was used by Volpe, Chen, and Pavlicko, 1996; and Chen and Volpe, 1998. This dichotomous variable was then used in the logit regression as the dependent variable, which was explained by all of the independent variables using four models. The independent variables that were used in the logit regression included variables such as gender, education level, academic discipline, work experience, age, income and exposure to finance and monetary issues. The expanded version of the models can be found in appendix 9. The simplified regression models estimated are of the form:

$$\log\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1(PC) + \varepsilon \dots\dots\dots (1)$$

$$\log\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1(PC) + \beta_2(FAM) + \varepsilon \dots\dots\dots (2)$$

$$\log\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1(PC) + \beta_2(FAM) + \beta_3(EXP1) + \varepsilon \dots\dots\dots (3)$$

$$\log\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1(PC) + \beta_2(FAM) + \beta_3(EXP1) + \beta_3(EXP2) + \varepsilon \dots\dots\dots (4)$$

Where P , the dependent variable denotes a binary outcome which suggests the likelihood that a participant is financially literate (1= financially literate, 0 otherwise). The β_0 and ε represent the regression intercepts and residual terms and β_1, β_2 and β_3 are vectors of regression coefficients. PC, FAM, EXP1 and EXP2 are vectors of variable. The resulting coefficients describe the extent to which the financial literacy of each of the categorical variables employed differs from the reference group and vice-versa.

PC – Variables for Personal Characteristics

Rank1	= 1 if respondent is a level 100 and 200 student, 0 otherwise.
Rank2	= 1 if respondent is a level 300 and 400 student; 0 otherwise.
Shsstudy1	= 1 if respondent studied general arts with economics at SHS; 0 otherwise.
Shsstudy2	= 1 if respondent is non-business and economics SHS students; 0 otherwise.
Accounting	= 1 if respondent is a non-accounting students; 0 otherwise.
Unistudy	= 1 if respondent is non-business major; 0 otherwise.
Male	= 1 if respondent is a male; 0 otherwise.
Experience1	= 1 if respondent has no work experience; 0 otherwise.
Experience2	= 1 if respondent has less than 2yrs of work experience; 0 otherwise.
Age1	= 1 if respondent's age is up to 20 years; 0 otherwise.
Age2	= 1 if respondent is in the age group of 21 to 25 years; 0 otherwise.
Age3	= 1 if respondent is in the age group of 26 to 30 years; 0 otherwise.
Income1	= 1 if respondent earns incomes up to GH¢400; 0 otherwise.
Income2	= 1 if respondent earns incomes from GH¢400 to 1,499; 0 otherwise.

FAM - Variables for Family Characteristics

Fathersch1	= 1 if respondent's father's education is SHS and below; 0 otherwise.
Fathersch2	= 1 if respondent's father has training college and polytechnic/equivalent education; 0 otherwise.
Mothsch1	= 1 if respondent's mother education is JHS and below; 0 otherwise.
Mothsch2	= 1 if respondent's mother has SHS, training college and polytechnic/equivalent education; 0 otherwise.
Fathocc	= 1 if respondent's father is Unemployed; 0 otherwise.
Fathocc1	= 1 if respondent's father is Self-employed; 0 otherwise.
Mothocc	= 1 if respondent's mother is Unemployed; 0 otherwise.
Mothocc1	= 1 if respondent's mother is Self-employed; 0 otherwise.
Discusfinan2	= 1 if respondent has never discussed financial issues; 0 otherwise.
Drive	= 1 if respondent do not drive; 0 otherwise.

EXP1 - Variables for Exposure Via Housing Arrangement and Financing of Education

Capital town	= 1 if respondent is not living in a capital town; 0 otherwise.
House1	= 1 if respondent resides in on-campus hall; 0 otherwise.
House2	= 1 if respondent resides in off-campus rent and hostel; 0 otherwise.
House3	= 1 if respondent resides with parents and relatives; 0 otherwise.
Educfinan1	= 1 if respondent's education is fully financed by family; 0 otherwise.
Educfinan2	= 1 if respondent's education is both financed by self and family; 0 otherwise.
Educfinan3	= 1 if respondent's education is financed by scholarship and sponsorship; 0 otherwise.

EXP2 - Variables for Exposure Via Financial Market Involvement

Personalaccount	= 1 if respondent has no personal account; 0 otherwise.
Investaccount	= 1 if respondent has no investment account; 0 otherwise.

Several considerations guided the selection of the variables that were used in this study. First standard characteristics such as academic discipline, course concentration, class rank, gender, work experience, age and income level were incorporated into the models as explanatory variables. Second, three groups of variables measuring exposure to financial knowledge were added. The exposure variables included are family characteristics (in model II), residential characteristics and funding of education (in model III), and financial market involvement (in model IV). Family characteristics were added because previous studies have shown that individuals learn through interaction with others, in particular, family (Lusardi, Mitchell and Curto, 2010; Li, 2009; and Mandell, 2008). For instance Mandell (2008) finds financial literacy of students to be influenced by parents' level of education. Family characteristics included are parents' education, occupation and driving experience of the students.

Following Chiteji and Stafford (1999), financial market participation was included to investigate the influence of having a bank or investment account on students' financial literacy. The study also incorporated residential and education financing characteristics to assess the extent to which living in the capital town and how students finance their education affect their financial literacy (Volpe and Chen, 2002). These exposure characteristic were used as control variables.

The defining features of the variables employed are outlined above. Class ranks used in the analysis are in three categories: Rank1-level 100 and 200; Rank2-level 300 and 400 and postgraduate (used as reference group). The courses pursued in senior high school was classified into three categories namely Shsstudy1 representing

students who studied general arts with economics, Shsstudy2 for non-business and economics students and business as the reference group. Academic discipline in the university (Unistudy) is classified into two parts, namely, business and non-business majors. Students with business majors were consequently used as benchmark for the analysis. The research wanted to find out if there were differences in the financial knowledge among the business students, so "Accounting" dummy was introduced in the model. Students with accounting options were used as the base group.

Gender was included in the models to test gender differences in financial literacy. Collectively, the Levene test for equality in means for work experience categories of two years and above revealed insignificant differences, meaning their knowledge level in finance was at par. So respondents with work experience 2 to less than 4 years, 4 to less than 6 years and 6 years and above were merged. So in the models, Experience1 and Experience2 represent students with none and less than two years of working experience respectively with experience level of 2 years and above as the reference group. As part of the standard characteristics, age related experience was added to find its impact on students' financial literacy. Ages above 30 years were merged based on the test in means results. In the models Age1, Age2, and Age3 represent ages up to 20 years, 21 to 25 and 26 to 30 respectively with age above 30 as the based group. Income variables used in the analysis were designated income1 as income level below GH¢400 and income2 as GH¢400 to 1,499 with income level GH¢1,500 and above as the reference group. High income levels were merged based on the difference in means test.

On parents' education, fathersch1 represents fathers with senior high school education and below, Fathersch2 representing fathers with Training colleges/Polytechnics education and fathers with bachelor's degree and beyond as the base group. Students' whose mothers have junior high school education and below (Mothsch1) and senior high school or training college and polytechnic form of education (Mothsch2) are used in comparison to students whose mothers have bachelor's degree and above. Students' parents' occupation are labelled as Fathocc (for father) and Mothocc (for mother) for unemployed parents and Fathocc1 and Mothocc1 for self-employed parents. The reference group is parents who are employed in organizations. Students who do not drive labelled "Drive" were compared with those who drive. Driving experience was included to control for respondents' knowledge in insurance. Discusfinan2 represents students whose families have never discussed any form of financial issues in the house before. Their knowledge level is compared to those whose families have had some form of discussion in financial issues in the house before.

Housing arrangement in the university, is classified into four categories namely, House1 (on-campus), house2 (off-campus), house3 (live with parents and relatives) with the reference group being those who live in their own house. On how students finance their education, Educfinan1 (fully family), Educfinan2 (both self and family) and Educfinan3 (scholarship and sponsorship) are used in the model. Students who fully finance their own education are used as the based group for analysis. As a proxy for environmental/geographic influence, capital town is included to test the financial literacy of students who live outside the regional capitals in reference to those who live in the capital. To control for financial market involvement,

Personalaccount (students without personal accounts) and Investaccount (students without investment accounts) are compared to those with personal and investment accounts respectively.

Further analysis was carried out to establish how the level of respondents' financial literacy impacts their opinions, decisions and practices on finance related matters. Concerning their opinions on financial matters, students were asked to rank personal finance issues using five point likert scale: very important, somewhat important, not sure, somewhat unimportant and very unimportant. Respondents were also to make decisions on related financial matters. The approach adopted here is consistent with the work of Chen and Volpe (1998). Respondent's personal financial management practices were also ascertained using a five point likert scale ranging from never to always. Although, most studies did not include the practices, they were considered in this study since they are equally important as the opinions and decisions. As in the logit regression, the sample was categorized into two groups of students with relatively high knowledge and those with relatively low knowledge based on the median percentage of correct answers. Cross-tabulations and Chi-square tests were used to ascertain if the difference of the two groups' opinions, decisions and practices were statistically significant. SPSS, Stata and Microsoft Excel were used to run the data.

5.9 ETHICAL CONSIDERATION

Ethical issues will mostly crop up when planning the research, seeking access to organizations and to individuals, collecting, analyzing and reporting the data. According to Saunders et al. (2007), in the context of research, ethics refers to the

aptness of the researcher's behaviour in relation to the rights of those who become the subject of the study or are affected by it. Blumberg et al. (2005) define ethics as the 'moral principles, norms or standards of behaviour that guide moral choices about our behaviour and our relationships with others'. Research ethics therefore relates to questions about how we devise and make clear our research theme, plan our research and gain right of entry, gather data, process and store our data, analyze data and put in writing our research outcomes in a proper and responsible way (Saunders et al., 2007). This means that the researcher must make sure that the way the research is designed is both methodologically sound and ethically justifiable to all those who are involved.

To ensure that ethical issues are fully addressed, the conduct of this research is guided by School of Graduate School manual for the conduct of postgraduate thesis. Also, a sample of the questionnaire was submitted to the School of Graduate study for ethical clearance. Permission was sought from the authorities of the sampled institutions. The researcher sought the consent and voluntary participation of the students. They were aware of the fact that they had the right to withdraw partially or completely from the research process. They were assured of the confidentiality of the information they had provided. The researcher took reasonable steps in maintaining the confidentiality of data provided by students and their anonymity.

CHAPTER SIX

SAMPLE DESCRIPTION AND UNIVARIATE ANALYSIS

6.0 INTRODUCTION

In the previous chapter, I set out the research methodology and description of data. In this chapter, I present and analyze the findings of the research. Most of the results are presented in Tables. The analyses cover the descriptive statistics of the sample; the literacy level of students in general money management, savings and borrowing, investment and insurance; and univariate analysis of differences in the financial literacy level among subgroup of students.

6.1 DESCRIPTIVE STATISTICS OF RESPONDENTS

In all, 5000 questionnaires were administered to students from 12 universities. The sample was designed to be representative of the university student population in Ghana. Private and public university students and students at different levels and across different subject areas are adequately represented. Three thousand nine hundred and thirty-two (3932) participated in the survey representing a response rate of 79%. However, missing responses on some questions caused the number of respondents to vary slightly for various sections of the survey. Comparatively, the response rate for this study is higher than most financial literacy studies on students. For instance Chen and Volpe (2002), Al-Tamimi and Kalli (2009), Jorgensen (2007) and Sabri (2011) had response rates of 51%, 48%, 43% and 65% respectively. Demographic characteristics of the respondents such as educational background, gender, experience and income levels are presented in Table 4a. Parental and other financial exposure characteristics are reported in Tables 4b and 4c.

Table 4a: Demographic Characteristics of Respondents

	Number of Respondents	Percentage
A. Education		
1. Academic Discipline		
a) Business Majors	1682	42.9
b) Non-Business Majors	2242	57.1
2. Business Concentration		
a) Accounting and Finance Majors	1105	66.0
b) Nonaccounting and finance Majors	570	34.0
3. Class Rank		
a) Level 100	802	20.4
b) Level 200	815	20.7
c) Level 300	968	24.6
d) Level 400 and above	745	18.9
e) PG	602	15.3
4. SHS Education		
a) Business	1528	38.8
b) Arts	1188	30.1
c) Science	1225	31.1
B. Gender		
a) Male	2390	60.8
b) Female	1541	39.2
C. Experience		
1. Years of Work Experience		
a) None	1348	34.4
b) Less than 2 years	1235	31.5
c) Two to less than 4 years	635	16.2
d) Four to less than 6 years	300	7.7
e) Six years or more	403	10.3
2. Years of Age		
a) Up to 20	808	20.6
b) 21 – 25	1911	48.6
c) 26 – 30	749	19.1
d) 31 – 40	406	10.3
e) 41 and above	57	1.5
D. Income		
1. Student personal income		
a) Under GH¢ 400	1444	36.8
b) GH¢ 400 – 1,499	1548	39.5
c) GH¢ 1,500 – 4,999	558	14.2
d) GH¢ 5,000 – 14,999	241	6.1
e) More than GH¢ 15,000	130	3.3

Source: Field Survey, 2014

6.1.1 Gender Distribution of Respondents

Most of the participants in the study are male students representing 60.8% of the entire respondents and 39.2% being female students. The large proportion of male respondents reflects the gender gap in tertiary institutions in Ghana. Information gathered from the fact books and websites of the universities reveal that male students are far more than female students. Although, most public universities over the years have made conscious efforts to close the male to female gap ratio, it seems there is more work to be done in this regard.

6.1.2 Educational Background

Table 4a also shows the distribution of respondents by current educational level and subject area of study at university and high school. The highest percentage of respondents, 42.9%, are business major students. Of the remaining non-business respondents, 32.4%, are science/engineering students and 24.7% are studying humanities. Among the business students, 66% are majoring in accounting and finance with 34% majoring in other areas like marketing, human resource management etc. This could buttress the assertion that most business students in universities in Ghana prefer to major in accounting and finance related programme of study. In terms of class ranks/level of the respondents, 15.3% are postgraduate students and the remaining 84.6% are undergraduate students distributed as 18.9%, 24.6%, 20.7% and 20.4% for level 400, 300, 200 and 100, respectively. Students' area of concentration at senior high school or equivalent was also ascertained. It is believed that educational background of students before entry into the university can also shape their financial knowledge. About 38.8% of the respondents were business students at high school, 30.1% were arts students (general arts with economics 22%,

general arts without economics 6% and visual arts 2%) and 31.1% were science students.

6.1.3 Experience

Experience was considered from two angles, work related experience and age related experience. In terms of work experience, 34.4% of the respondents have no work experience, 31.4% have less than two years' experience, 16.2% have two to less than four years' experience, 7.7% have four to less than six years' experience and 10.3% have six or more years work related experience. This is not surprising as a large proportion of the respondents are post-high school undergraduate students. Results from Table 4a also reveal that about 48.6% of the respondents are in the age range of 21 to 25 years. The remaining 51.4 percent is distributed as follows: 20.6%, 19.1%, 10.3% and 1.5% within the age groups up to 20 years, 26 to 30 years, 31 to 40 years and 41 and above respectively. This implies that this study is dealing with a very youthful population so the findings could apply in general to the youth of Ghana.

6.1.4 Income

Respondent's annual income is measured as the amount of money received by the respondent for personal use over the past year. This includes monies from students' loans, salaries, commissions, regular remittances from family etc. Table 4a shows that 36.8% of the students have income level under GH¢400.00, 39.5% are in the income range GH¢400.00 to GH¢1,499.00, 14.2% earn income in the range of GH¢1,500.00 – 4,999.00, 6.1% earn income in the range of GH¢5,000 – 14,999.00 and 3.3% earn GH¢15,000.00 and beyond. Most of the respondents are earning less than GH¢1,500. Acheampong (2010) reports that tertiary students in Ghana need

income in the range of GH ₵400 - GH₵1000 to help sustain them partially through their academic activities and meet student expenditure. With an increase in inflation from 8.5% in December 2010 to 15.3% in July, 2014, the depreciation of Ghana cedi, rising cost of hostel accommodation, photocopying and printing, the income level of the respondents might not be enough to sustain them for one academic year. So the call by students for increase in the student loan might be legitimate.

6.1.5 Family Characteristics

Table 4b reports on parents' education and occupation. The results suggest that respondents rated the educational levels of their fathers relatively higher than that of their mothers. For example, 42 percent of mothers have no formal education or just the basic level of education, compared to 27.1 percent of fathers. On the other hand, 34.7 percent of fathers have a bachelor's degree or above compared with 15.9 percent of mothers. Parents with masters degree or professional certificates are 16.8% and 5.6% for fathers and mothers, respectively. This is consistent with the assertion that women, especially mothers, are worst off when it comes to high level of educational attainment.

On parent's employment status, the results show that 9.3% (14.8%), 47.4% (61.1%) and 43.3% (24.1%) of students' fathers (mothers) are unemployed, self-employed and employed, respectively. Thus, most mothers (75.9%) are either unemployed or self-employed. This observation may be due to the cultural and social setting that supports the idea that females should make tendering the home their first priority. With the hectic tasks of caring for their children and the house, having their own

business or staying out of full time employment probably are the best options for them.

Table 4b: Distribution of Respondents by Family Characteristics

	Number of Respondents	Percentage
Family Characteristics		
1. Father's Education		
a) None/JSS/MSLC	1047	27.1
b) SHS/Equivalent	647	16.7
c) Training college, nursing, poly etc.	833	21.5
d) Bachelor's degree	692	17.9
e) Master/ doctorate, professional	649	16.8
2. Mother's Education		
a) None/JSS/MSLC	1629	42.0
b) SHS/Equivalent	778	20.0
c) Training college, nursing, poly etc.	858	22.1
d) Bachelor's degree	398	10.3
e) Master, doctorate, professional	218	5.6
3. Father's Occupation		
a) Unemployed	362	9.3
b) Self Employed	1837	47.4
c) Employee	1678	43.3
4. Mother's Occupation		
a) Unemployed	574	14.8
b) Self Employed	2373	61.1
c) Employee	937	24.1

Source: Field Survey, 2014

6.1.6 Area Lived and Funding for Education

Results from Table 4c show that most of the respondents have mostly lived in the two major cosmopolitan regions in Ghana. Over 55% of respondents have mostly lived in the two regions, Ashanti (29.0%) and Greater Accra (26.6%), with the remaining percentage fairly distributed across the other regions as follows; Eastern (7.5%), Brong-Ahafo (6.8%), Western (6.8%), Volta (5.2%), Central (4.8%),

Northern (3.6%), Upper West (3.3%) and Upper East (2.4%). Further, it was noted that 59.4% of these respondents live in the capital towns while 40.6% live outside the regional capitals.

On housing arrangements of the respondents, Table 4c reports that 49.4% and 35.8% are residents of off-campus hostels and on-campus halls, respectively. Respondents who reside in their own houses were about 9.6% while 5.4% live with their parents or relatives. The results further indicate that about 17.7% of the students fully finance their own education while 61.4% are fully supported by their families. About 17.7% of the students finance their education partly from their own resources and partly from family support while only 3.3% use scholarship/sponsorship to support their education. Thus, most of the respondents are very much dependent on their families in financing their university education. The results further show that 30.2% of students have some form of driving experience while 69.8% do not.

6.1.7 Financial Market Involvement

Table 4c also shows that 84.7% of the students have personal accounts (savings and current account) whilst 15.3% do not. It is very encouraging to know that most students have an account with at least one bank. Although, the attainment of high financial inclusion has been a daunting task in Ghana (World Bank, 2012), it is being achieved in Ghanaian universities. Financial inclusion has been made possible because most banks have special accounts tailored for students. Low accounts balance, flexible current accounts that enable students to use cheque books.

The table further reveals that few of the respondents (12.8%) have investment accounts while 87.2% do not have investment accounts. This finding can be attributed to the youthful nature of the respondents and the relatively low income they are earning.

Table 4c: Distribution of Respondents by Exposure Variables

	Number of Respondents	Percentage
Area Lived, Funding for Education and Driving Experience		
1. Region Most Lived		
a) Ashanti	1114	29.0
b) Brong Ahafo	259	6.8
c) Central	186	4.8
d) Eastern	286	7.5
e) Greater Accra	1021	26.6
f) Northern	139	3.6
g) Upper East	91	2.4
h) Upper West	125	3.3
i) Volta	200	5.2
j) Western	260	6.8
k) Foreign	155	4.0
2. Capital Town		
a) Yes	2275	57.9
b) No	1656	42.1
3. Housing arrangement		
a) On-campus	1388	35.8
b) Off-campus rent/hostel	1917	49.4
c) Off-campus own house	366	9.4
d) Live with parents/ relatives	211	5.4
4. Financing Education		
a) Fully self	683	17.7
b) Fully family	2371	61.4
c) Both self and family	684	17.7
d) Scholarship	126	3.3
5. Driving Experience		
a) Yes	1174	30.2
b) No	2711	69.8
Financial Market Participation		
1. Financial Accounts		
a) Personal account	3330	84.7
b) No personal account	601	15.3
2. Investment Account		
a) Investment	502	12.8
b) No investment	3429	87.2

Source: Field Survey, 2014

6.2 DESCRIPTIVE STATISTICS ON KNOWLEDGE IN FINANCE

The financial literacy questions are divided into four components. These are knowledge in: general finance, savings and borrowing, investments, and insurance. The responses to questions under these components are grouped into three categories: correct, incorrect and don't know. The "don't know" option was used to dissuade respondents from guessing the correct answer if they did not know. It is worth noting that in prior research "don't know" answers identified respondents with very low levels of financial knowledge (Lusardi, Mitchell and Curto, 2010; Lusardi and Tufano, 2009; and Lusardi and Mitchell, 2006). Thus, such responses could be equated to an incorrect answer.

The mean percentage of correct scores is interpreted using the bench mark set by Chen and Volpe (1996; 2002) and other researchers. The benchmark grouped percentage correct scores into three categories: over 80% (High Literacy), 60-79% (Medium Literacy) and below 60% (Low Literacy). Also, the KNUST grading system which is quite similar to the grading system of most universities in Ghana is used to portray a vivid and familiar picture of the financial literacy level of students. The grading system groups students' scores into five categories: 70% and above (A - Excellent), 60-69% (B - Very Good), 50-59% (C - Good), 40-49% (D - Satisfactory) and below 40% (F - Fail).

The reliability of the 26-question survey measured by Cronbach alpha is 0.89. The acceptable level as prescribed by Nunnally (1978) and Murphy and Davidshofer (1988) is that the Cronbach alpha should be above 0.7. The large alpha indicates that

the questionnaire is reliable which further increases its validity. The overall results are presented in Table 5.

6.2.1 General Finance Knowledge

From Table 5, it can be observed that 50.7% of respondents answered the personal finance literacy question correctly, 44% provided incorrect answer and 5.3% responded that they don't know the answer. This implies that only about 51% of the respondents know the importance of personal finance literacy.

The correct, incorrect and don't know response to the question on what personal financial planning involves were 50.3%, 44.3% and 5.4% respectively. Only 43.1% of respondents answered the question on personal budget correctly, 53.8% provided incorrect answers and 3.2% responded that they don't know the answer. Student were expected to have much knowledge in personal budget however it appears this is not so. The large incorrect answers and don't know responses are particularly troubling since most students don't know what personal budget can help them achieve.

The test question on asset liquidity produced an encouraging result compared to all the other questions asked under general finance knowledge. About 64% of respondents answered the question correctly, 24.7% gave incorrect answers and 11.2% indicated they don't know the answer. Moderately, most students know those financial and physical assets that can be converted into cash easily. Although most respondents answered the asset liquidity correctly, only 41.5% answered the net

worth or net asset value question correctly. This implies most student do not know what their net worth is.

Table 5: Pattern of Responses to Financial Literacy Questions

	Correct Answer	Incorrect Answer	Don't Know Response
I. General Finance Knowledge			
Personal finance literacy	50.7	44	5.3
Personal financial planning	50.3	44.3	5.4
Personal budget	43.1	53.8	3.2
Asset liquidity	64.1	24.7	11.2
Net asset value	41.5	40.7	17.8
Savings interest rate vrs inflation	53.5	23.3	23.2
Mean percentage score	50.4		
Median percentage score	50		
II. Savings & Borrowing Knowledge			
Higher interest paying account	63.9	27.3	8.8
Loan guarantee	86.0	8.1	5.9
Compound interest	31.8	45.7	22.4
Simple interest	61.9	24.2	13.9
High borrowing source	50.1	39.5	10.4
Overdraft	67.9	15.9	16.3
Most important lending factor	65.1	25.6	9.3
Mean percentage score	60.9		
Median percentage score	71.43		
III. Investment Knowledge			
Security trading	62.5	18.3	19.2
Short term investment	47.0	33.1	19.9
Mutual fund	24.9	41.0	34.1
Diversification	34.1	45.4	20.5
Risk-return	66.5	18.3	15.2
High risk investment	20.7	72.5	6.8
Mean percentage score	42.5		
Median percentage score	50		
IV. Insurance Knowledge			
Car insurance premium	27.3	53.1	19.6
Reason to buy insurance	51.2	35.7	13.0
Comprehensive insurance	39.0	29.0	32.0
Health insurance	38.7	51.7	9.6
Life insurance	46.8	36.0	17.2
House made of wood insurance	49.9	34.2	15.9
Third party insurance	32.0	39.7	28.3
Mean percentage score	40.6		
Median percentage score	42.86		

Source: Field Survey, 2014

On how much savings can buy today if inflation rate exceeds saving interest rate, 53.5% of respondents answered correctly while 46.5 answered wrongly or responded don't know. This is an indication that a lot of students don't know much about the time value of money.

With the exception of the question on asset liquidity that had a mean correct response greater than 60%, all the questions under this section recorded mean correct responses less than 60%. Comparatively, students' knowledge in asset liquidity is moderate while for the rest of the questions is low. Further, using the grading system benchmark, it can be observed in Table 6f below that 38.6% failed the general knowledge in finance test while 21.8%, 17.9% and 21.7% obtained grade C (good), grade B (very good) and grade A (excellent) respectively. The overall mean percentage of correct scores is 50.4%, indicating that on average, the respondents answered only about half of the questions correctly.

The results from Table 6a further reveal that about 7.7% of the respondents had all the general knowledge questions wrong, with the rest distributed as one correct (13.1%), two correct (17.8%), three correct (21.8%), four correct (17.9%) and five correct (13.5%) respectively. A meagre percentage of the respondents representing 8.2% had all the general knowledge questions correct. This implies that while many respondents demonstrate knowledge in some basic finance concepts, their general knowledge of finance is low. This finding is consistent with other studies that find low level of knowledge in personal financial fundamentals among students (Bakken, 1967; HSR, 1993; Chen and Volpe 1998). Similarly, Lusardi, Mitchell and Curto (2009) also find low level of understanding of general finance issue like inflation

among the youth in the United States of America. Kotzè and Smit (2008) find similar low level of knowledge among students in South Africa.

Table 6a: Pattern of Correct Answers - General Knowledge

	Frequency	Percent
All Wrong/Don't Know	302	7.7
One Correct	515	13.1
Two Correct	701	17.8
Three Correct	855	21.8
Four Correct	704	17.9
Five Correct	532	13.5
All Correct	322	8.2
Total	3931	100.0

Source: Field Survey, 2014

6.2.2 Knowledge of Savings and Borrowing

This section examines respondents' knowledge in savings and borrowing. Seven questions were used to explore the level of students' knowledge in saving and borrowing. The first question sought to find out if the respondents know the type of account that pays the most interest. From Table 5, 63.9% of respondents answered the question correctly, 27.3% provided incorrect answer and 8.8% responded that they don't know the answer. This is an indication that most of the respondents know the account that pays the highest interest.

The test question on the implication of guaranteeing a loan produced very encouraging results. In comparison to all the questions in the survey, this question produced the best correct score. 86.0% of respondents answered the question correctly, 8.1% gave incorrect answers and 5.9% indicated they don't know the answer. This suggests that most respondents understand the full implication of guaranteeing a loan for someone.

The correct, incorrect and don't know responses to the question on simple interest were 61.9%, 24.2% and 13.9% respectively. Although, students performed moderately well on the simple interest question, only 31.8% of respondents answered the question on compound interest correctly, 45.7% provided incorrect answers and 22.4% responded that they don't know the answer. Thus, it seems many respondents don't understand the concept of compound interest. Only half of the respondents answered correctly the question on the source of borrowing that is likely to charge a higher interest rate. Of the rest, 39.5% answered it wrongly and 10.4% responded that they don't know the answer. Clearly, about half of the respondents don't know the cost associated with the various sources of loan.

The percentage correct, incorrect and don't know responses to the overdraft question were 67.9, 15.9 and 16.3 respectively. The questions on the most important factor a lender/bank uses when deciding on whether to approve a loan recorded correct, incorrect and don't know percentage response rate of 65.1, 25.6 and 9.3. This implies that the respondents have moderate knowledge in the factors banks consider before approving a loan.

Out of the seven questions, only two questions resulted in mean correct responses of less than 60%. Four questions registered mean correct responses greater than 60% but less than 80%, while one question recorded a mean score above 80%. Students' knowledge in compound interest and cost of borrowing is low while their level of knowledge in interest paying account, simple interest, overdraft and most important lending factor is medium. Their level of knowledge in loan guarantee is high. Using the university grading system for further insight, it can be observed from Table 6f

that 17.3%, 13.2%, 18.1% and 51.5% obtained grade F (fail), grade D (satisfactory) and grade C (good) and grade A (excellent) respectively in the savings and borrowing test. Comparatively, the respondents' level of knowledge in savings and borrowing is better than the other three components of financial literacy. A little more than 50% of the respondents obtained grade A in the savings and borrowing test while less than 50% obtained A in the other components.

Table 6b: Pattern of Correct Answers - Savings and Borrowing

	Frequency	Percent
All Wrong	153	3.9
One Correct	208	5.3
Two Correct	318	8.1
Three Correct	517	13.2
Four Correct	711	18.1
Five Correct	930	23.7
Six Correct	797	20.3
All Correct	297	7.6
Total	3931	100

Source: Field Survey, 2014

From Table 6b it can also be observed that out of the 3931 respondents 3.9% had all the savings and borrowings questions wrong. 5.3%, 8.1%, 13.2%, 18.1%, 23.7% and 20.3% of the respondents had one, two, three, four, five and six questions correct respectively. Only 7.6% had all the questions correct. More than half of the respondents had five to all the seven questions correct. A critical examination of the individual questions depicts that students score higher on issues relating to savings and borrowing. Among all the dimensions, it was expected that students will have more knowledge in savings and borrowing considering the fact that about 73.5% and 25.4% have savings and current accounts respectively. The overall mean percentage of score for this section is 60.9%, indicating on average the respondents answered

60.9% of the questions correctly. This implies that students' level of knowledge in savings and borrowing is medium.

6.2.3 Investment Knowledge

This section examines respondents' knowledge in investment products and principles. In all six questions were used to explore the level of students' knowledge.

The first question was asked to find out if students know where listed shares are traded. As shown in Table 5, 62.5% of the respondents answered the question correctly, 18.3% provided incorrect answer and 19.2% responded that they don't know the answer. This is an indication that more than half of the students have a fair idea of where shares are bought and sold in Ghana. Although, respondents performed moderately well on the question on where securities are traded, respondents performed poorly on the short-term investment, mutual fund, risk diversification and high risk investment questions. Only 47.0% of respondents knew the answer to the question relating to the most common short-term investment product in Ghana, 53.0% provided incorrect answers or responded that they don't know the answer. The test score for the mutual fund question revealed that only 24.9% answered the question correctly, 41.0% answered it wrongly and 34.1% responded that they don't know the answer. This suggests that about 75% of respondents do not really know what mutual funds are.

The percentage for correct, incorrect and don't know responses to the question on risk diversification were 34.1, 45.4 and 20.5 respectively. Thus, most respondents do not demonstrate knowledge of the concept of diversification and risk reduction in investments. The high-risk and high-return strategy question proved to be a very

challenging question to the respondents. Among all the survey questions, this is where students performed poorly. Only 20.7% of the respondents answered the question correctly, 72.5% answered the question wrongly and 6.8% responded they do not know. Most of the students, about 79% have no idea about who should go in for a high-risk and high-return investment. The percentage for correct, incorrect and don't know responses to the risk return relationship question were 66.5, 18.3 and 15.2 respectively.

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Out of the six questions, only two questions recorded mean correct responses greater than 60% but less than 80%. The other four questions resulted in mean correct responses less than 60%. The results in Table 6f further reveal that a whopping 48.9% of the respondents failed the investment test. The knowledge level of 23.7%, 16.1% and 11.3% of the respondents are good, very good and excellent respectively. Comparatively the failure rate for the investment component of the financial literacy test was higher than the other three components.

Results from Table 6c show that 10.8%, 15.8%, 22.3%, 23.7%, 16.1% and 8.5% had all the questions on investment wrong, one correct, two correct, three correct, four correct and five correct respectively. Only 2.8% scored all the investment questions correctly. The overall mean percentage of correct score for this section is 42.5% indicating on average, the respondents answered 42.5% of the questions correctly. This implies that respondents' level of knowledge in investment products, risk and diversification is low. Van Rooij et al. (2011) also find similar low levels of knowledge in these areas in a study of Dutch households. Volpe et al. (1996) also find that college students are illiterate about investment.

Table 6c: Pattern of Correct Answers - Investment

	Frequency	Percent
All Wrong/don't know	424	10.8
One Correct	623	15.8
Two Correct	876	22.3
Three Correct	930	23.7
Four Correct	632	16.1
Five Correct	335	8.5
All Correct	111	2.8
Total	3931	100

Source: Field Survey, 2014

6.2.4 Insurance Knowledge

This section examines respondents' knowledge in the principles of insurance and different types of insurance products on the Ghanaian market. From Table 5, we observe that only 27.3 answered the car insurance question correctly, 53.1% had it wrong and 19.6% responded don't know. Evidently, most students (72.7%) don't know the basis for determining insurance premium. The results also show that 51.2% of the respondents know of the reason for buying insurance but about 48.7% (35.7% incorrect response and 13.0% don't response) don't really know why one might buy insurance. Thus only about half of the respondents answered the question correctly indicating low level of knowledge by students.

The percentage for correct, incorrect and don't know responses to the question on comprehensive insurance were 39.0, 29.0 and 32.0 respectively. Clearly, most respondents' knowledge of the different types of motor insurance is very low. Among all the insurance questions, students were expected to have much knowledge of health insurance because of their familiarity to and use of it. Ironically, the respondents performed poorly in that question too. Only 38.7% answered the question correctly, 51.7% answered the question incorrectly and 9.6% responded

they don't know the answer. Thus, although most respondents do subscribe to the National Health Insurance Scheme (NHIS), they do not really understand the rationale and the benefits to be derived from subscribing to the health insurance scheme. The percentage for correct, incorrect and don't know responses to the question on life insurance were 46.8, 36.0 and 17.2 respectively. More than half of the respondents did not know what life insurance is. Almost half of the respondents (49.9%) answered the question on the kind of house (wood house or brick house) that will be expensive to insure correctly, 34% answered wrongly and 15.9% responded they don't know. The percentage for correct, incorrect and don't know responses to the question on third party insurance were 32.0, 39.7 and 28.3 respectively.

All the seven questions under insurance knowledge resulted in mean correct responses less than 60%. Moreover, in Table 6f it can be observed that 44.6% failed the insurance knowledge test while 20.2%, 16.5% and 18.7% obtained grade D, grade C, and grade A respectively. The results from Table 6d further reveal that 10.7% of the respondents had all the insurance questions wrong, with the rest distributed as one correct (14.2%), two correct (19.7%), three correct (20.2%), four correct (16.5%) and five correct (10.6%) respectively. Only 2.5% of the respondents had all the insurance questions correct.

The overall mean percentage score for this section is 40.6% indicating that on average the respondents answered only 40.6% of the questions correctly. This implies that respondents' level of knowledge in insurance is very low and the relatively higher scores in other areas of finance do not necessarily translate to a

good understanding of insurance. Danes and Hira (1987) also find similar low levels of knowledge in these areas in a study of US students. This finding is consistent with the work of the Media Research Consultants Ltd (2005). They report that majority of Singaporeans are not well-versed in key features and mechanics of common financial products such as life insurance policies and unit trust.

Table 6d: Pattern of Correct Answers - Knowledge in Insurance

	Frequency	Percent
All Wrong	421	10.7
One Correct	557	14.2
Two Correct	775	19.7
Three Correct	794	20.2
Four Correct	649	16.5
Five Correct	417	10.6
Six Correct	234	6.0
All Correct	84	2.1
Total	3931	100.0

Source: Field Survey, 2014

6.2.5 Overall Measure of Financial Literacy

The overall measure of financial literacy is determined as the simple average of the respondent's scores in the four components. Table 6e shows a distribution of the overall composite measure. The average percentage scores for general financial knowledge, savings and borrowing, investment, and insurance were 50.4, 60.9, 42.5, and 40 respectively. Comparatively, students' level of knowledge in savings is medium or very good where as their knowledge in general finance, investment and insurance are low. Thus students have adequate knowledge in savings and borrowing but inadequate knowledge in the other components. From Table 6f it can be observed that overall, 32.6% failed the financial literacy test, 16.8% obtained satisfactory grade, 19.5% obtained good grade, 14.2% had very good grade and

16.9% had excellent grade. The overall mean percentage of correct scores for the entire survey is 48.6%, indicating on average the respondents answered less than half of the questions correctly.

It can be deduced that university students' knowledge in personal finance is low. Thus, the findings show that lack of financial knowledge is widespread among university students in Ghana. This finding is consistent with the assertion by Cole and Fernando (2008) who report that similar to the findings of developed countries, the small number of studies in developing countries show that the level of financial literacy is very low. Tamimi and Kalli (2009) also find similar low levels of knowledge in these areas in a study of UAE investors. Lusardi, Mitchell and Curto (2010) and Chen and Volpe (1998) also find low level of financial literacy among young consumers and students in the US. Thus level of financial literacy is low in both developed and developing countries.

Several reasons could account for the low financial literacy level of students in Ghana. One reason for this could be the lack of personal finance education in the curricula of senior high schools and universities in Ghana. Most of the senior high schools and universities do not have courses consciously designed to educate students on basic issues in finance. Even for times that non-accounting and non-business students are made to take accounting and finance related courses, most of them do not take it seriously because they think that it is not part of their mainstream courses. Even faculty members of those students portray the courses as if they are irrelevant. Considering the lack of attention to finance education, it is not surprising the results depict that university students' financial literacy is low.

Table 6e: Measure of Financial Literacy

Components	Average Scores
General Finance Knowledge	50.4
Savings and Borrowing	60.9
Investment	42.5
Insurance	40.6
Overall Financial Literacy	48.6

Source: Field Survey, 2014

Table 6f: Financial Literacy Grading

GENERAL KNOWLEDGE			
Grading System %	Frequency	Valid Percent	Grade
<= 39	1518	38.6	F
50 – 59	855	21.8	C
60 – 69	704	17.9	B
70+	854	21.7	A
Total	3931	100.0	
SAVINGS AND BORROWING KNOWLEDGE			
Grading System %	Frequency	Valid Percent	Grade
<= 39	679	17.3	F
40 – 49	517	13.2	D
50 – 59	711	18.1	C
70+	2024	51.5	A
Total	3931	100.0	
INVESTMENT KNOWLEDGE			
Grading System %	Frequency	Valid Percent	Grade
<= 39	1923	48.9	F
50 – 59	930	23.7	C
60 – 69	632	16.1	B
70+	446	11.3	A
Total	3931	100.0	
INSURANCE KNOWLEDGE			
Grading System %	Frequency	Valid Percent	Grade
<= 39	1754	44.6	F
40 – 49	793	20.2	D
50 – 59	649	16.5	C
70+	735	18.7	A
Total	3931	100.0	
OVERALL SCORES			
Grading System %	Frequency	Valid Percent	Grade
<= 39	1281	32.6	F
40 – 49	660	16.8	D
50 – 59	767	19.5	C
60 – 69	558	14.2	B
70+	665	16.9	A
Total	3931	100.0	

Source: Field Survey, 2014

The second reason for the low literacy can be linked to the young ages of the participants. As depicted in Table 1, about 69% of the respondents are below 26 years, and about 88.3% are below age 31. Most of them are in their early stage of their financial life cycle. At this stage most of them are catered for by their parents/relatives and issues relating to finance are handled by their parent with little or no consultation with them. Since monetary matters are mostly handled by their parents, their exposure to general finance knowledge, savings and borrowing, investments and insurance are limited. Also, at this time of their life, most of the monies they receive are spent on consumption and pleasure so issues of savings and borrowing, investment and insurance are not important to them.

These and other factors may explain the differences in mean percentages of correct scores among the four dimensions of financial literacy.

6.3 FINANCIAL LITERACY AND STUDENTS' CHARACTERISTICS

The question to be examined here is: who is financially literate? In this section, the relationship between financial literacy and respondents' demographic and family characteristics are examined. The one-way analysis of variance (ANOVA) test is used to test if there are significant differences in the financial literacy scores of the respondents based on the various demographic and family characteristics. Table 7a and 7b reports the mean percent correct responses in General Finance Knowledge, Savings and Borrowing, Investment, Insurance and the overall financial literacy score. Although, the overall level of financial knowledge was low among the respondents, there are significant differences in the financial literacy scores across the various students' and financial exposure characteristics outlined above. It should

be noted that most of the reasons for such differences in the level of financial literacy are discussed in chapter seven

Table 7a: Mean % of Correct Responses by Characteristics and Results of ANOVA

	General Knowledge	Savings & Borrowing	Investment	Insurance	Overall Score
A. Gender					
a) Male	51.9	63.2	44.6	42.8	50.6
b) Female	48.1	57.3	39.3	37.0	45.4
F-Statistics	(17.68)***	(48.86)***	(41.16)***	(49.37)***	(65.15)***
B. Education					
1. Academic Discipline					
a) Business Majors	56.9	68.2	50.3	45.8	55.3
b) Non-Business Majors	45.6	55.4	36.8	36.7	43.6
F-Statistics	(163.56)***	(254.53)***	(282.52)***	(127.31)***	(361.06)***
2. Class Rank					
a) Level 100	44.2	57.4	35.6	34.3	42.9
b) Level 200	46.0	55.8	38.5	35.7	44.0
c) Level 300	52.0	62.6	42.2	40.7	49.4
d) Level 400	51.2	61.8	45.2	41.9	50.1
e) PG	61.1	68.6	54.5	53.6	59.4
F-Statistics	(38.81)***	(27.52)***	(57.14)***	(63.50)***	(79.19)***
3. Business Concentration					
Accounting & Finance	58.6	69.3	51.5	46.7	56.5
Other	53.7	66.1	48.0	43.9	52.9
F-Statistics	(11.63)***	(6.86)***	6.91***	(4.20)**	12.63***
C. Experience					
1. Work Experience					
a) None	46.1	55.6	36.5	34.9	43.3
b) Less than 2 yrs	51.6	62.6	43.9	40.5	49.7
c) 2 to less than 4 yrs	54.3	63.9	49.0	45.6	53.2
d) 4 to less than 6 yrs	51.4	64.2	44.5	47.2	51.8
e) Six yrs or more	55.2	66.1	47.6	46.7	53.9
F-Statistics	(14.83)***	(23.77)***	(35.04)***	(35.13)***	(44.51)***
2. Years of Age					
a) Up to 20	47.4	56.9	37.1	35.9	44.3
b) 21 – 25	49.7	60.2	42.2	38.9	47.7
c) 26 – 30	53.1	63.7	46.4	46.1	52.3
d) 31 – 40	53.7	66.6	46.8	46.5	53.4
e) 41 and above	56.7	62.4	50.0	48.1	54.3
F-Statistics	(6.43)***	(12.97)***	(17.72)***	(25.05)***	(24.44)***
D. Income					
1. Last year income in GH¢					
a) Under 400	46.6	58.1	38.9	36.0	44.9
b) 400 – 1,499	51.1	62.8	43.8	42.2	50.0
c) 1,500 – 4,999	55.7	63.4	46.5	45.1	52.7
d) 5,000 – 14,999	56.4	63.4	49.5	47.0	54.1
e) 15,000 or More	52.1	54.7	39.5	41.1	46.8
F-Statistics	(14.85)***	(10.37)***	(16.60)***	(22.29)***	(25.70)***

*P<0.1, **P<0.05 and ***P<0.01

Source: Field Survey, 2014

The ANOVA test provides evidence of significant differences across the given characteristics. For each characteristic with more than two sub-classifications, the Levene test of equality in means was used to identify specific sub-groups whose means differ significantly from the others. This also enables the merger of sub-groups within a group whose means are not significantly different, in subsequent analysis. The presentation and discussion on the Levene test is done after the presentation and discussion on the ANOVA test. Table 7b provides information on the difference in means between categories in a group.

6.3.1 Financial Literacy and Gender

The results presented in Table 7a show that respondents' financial knowledge varies significantly with their gender. The average overall score of female respondents (45.4%) is significantly lower than that of male respondents (50.6%). Thus male respondents scored on average about 5.2 percentage points higher than female respondents. This pattern persists across all the four financial literacy dimensions. Male respondents scored higher on all the four components of financial literacy.

The male-female performance gap is 3.9%, 5.8%, 5.4% and 5.8% on general finance knowledge, savings and borrowing, insurance and investment, respectively. Chen and Volpe (1999, 2002) report differences of about 7% in their study of college students in the US. See also Lusardi, Mitchell and Curto (2010) who report differences up to 12% among young consumers in the US. Comparatively, the male-female performance gap is lower than that of the two studies indicated above. This implies that the knowledge level of males and females students is closer than that of comparable studies. Notwithstanding the differences in the financial literacy gap,

males are more financially knowledgeable than females. Consequently, in support of Lusardi, Mitchell and Curto (2010), there is now fairly robust evidence confirming that females are less financially knowledgeable.

6.3.2 Financial Literacy and Education

On average, business majors answered correctly 56.92% of the general knowledge questions, 68.18% of the savings and borrowing questions, 50.25% of the investment questions and 45.77% of the insurance questions. The non-business major, however, on average recorded correct scores of 45.55% for general knowledge, 55.41% for savings and borrowing, 36.77% for investment and 36.65% for insurance. Clearly, the average score of the business majors for all the financial literacy dimensions were higher than that of the non-business majors.

The results for the entire survey on academic discipline clearly indicates that the business majors with average correct scores of 55.28% are more knowledgeable than the non-business majors who recorded an average correct score of 43.60%. The differences in the mean patterns show that business majors answered about 12% questions more correctly than non-business majors. The results from ANOVA indicate that the differences are statistically significant at the 0.01 level. This implies that academic discipline has a significant impact on students' financial knowledge. This finding is consistent with the works of Lusardi and Mitchell (2007b), Chen and Volpe (2002) and Chen and Volpe (1998). They report that business and economics majors were more financially knowledgeable than non-business major. Since business and economics students study subjects that are finance based it is obvious that they will be more knowledgeable in finance than students majoring in other

courses. Thus academic discipline plays a role in explaining differences in financial literacy.

The study also explores whether among the business majors there are differences in their financial literacy based on their area of concentration. On the average, business students majoring in accounting/finance answered correctly 58.58% of the general knowledge questions, 69.27% of the savings and borrowing questions, 51.46% of the investment questions and 46.68% of the insurance questions. The non-accounting/finance major, however, on average recorded correct scores of 53.74% in general knowledge, 66.12% in savings and borrowing, 47.96% in investment and 43.88% in insurance. Clearly, the average scores of the accounting/finance majors for all the financial literacy dimensions were higher than that of the non-accounting/finance majors. All the dimensions are statistically significant at the 0.01 level except their knowledge in insurance that was significant at the 0.05 level.

The results for the entire survey, clearly indicates that the accounting/finance majors with average correct scores of 56.50% are more knowledgeable than the non-accounting/finance majors who recorded an average correct score of 52.93%. The gap in the correct response rate between business non accounting/finance students and the accounting /finance students were 4.85%, 3.15%, 3.51%, 2.80%, and 3.58% for questions on general knowledge, savings and borrowing, investment, insurance and the entire survey respectively. These differences were statistically significant at the 0.01 level. The import of this is that business students majoring in accounting and finance are more financially literate than those offering marketing, human resource management etc. This implies that business students' area of concentration

has a significant impact on their financial knowledge. This finding is comparable to Oppong-Boakye and Kansanba (2013) study of undergraduate students of KNUST Business School. They find that financial literacy is highest among accounting students followed by banking and finance, marketing, and human resource management students. This is expected since students majoring in accounting and finance study a lot of finance related subjects than those offering other business courses.

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The results also reveal that respondents from different class ranks have different levels of financial knowledge. Level 100 students recorded mean correct scores of 44.16%, 57.36%, 35.62% and 34.27% in general knowledge, savings and borrowing, investment and insurance respectively. Level 200 recorded average correct scores of 46.03%, 55.76%, 38.51% and 35.74% for general knowledge, savings and borrowing, investment and insurance respectively. Respondents in level 300 recorded mean correct scores of 52.01% in general knowledge, 62.60% in savings and borrowing, 42.17% in investment and 40.67% in insurance. Also respondents in level 400 had mean correct scores of 51.23%, 61.79%, 45.21% and 41.88% in general knowledge, savings and borrowing, investment and insurance respectively. Average correct scores of 61.07% in general knowledge, 68.56% in savings and borrowing 54.49% in investment and 53.61% in insurance were recorded by postgraduate students.

For the entire survey, level 100, level 200, level 300, level 400 and graduates recorded 42.85%, 44.01%, 49.36%, 50.05% and 59.43% mean correct responses respectively. Although, some categories at lower class ranks for some of the

financial literacy dimensions had correct scores slightly higher than high class ranks, generally, graduate students have more knowledge than the undergraduates and level 400 and 300 students are more knowledgeable than level 200 and 100 students. Again, the ANOVA test reveals that the differences in the level of financial literacy among different class ranks are statistically significant at the 0.01 level. This implies that class rank has a significant impact on the financial knowledge of students. This finding is consistent with other studies that found differences in financial literacy according to class rank of university students (Chen and Volpe, 2002; and Chen and Volpe, 1998).

Table 7b also reveals differences in financial literacy according to the categories in the class ranks. The gaps in the response rate between level 100 and 200 were 1.90%, -0.16%, 2.90%, 1.5% and 1.16% for questions on general knowledge, savings and borrowing, investment, insurance and the entire survey respectively. Out of these gaps, only the difference in their knowledge in investment was statistically significant. This implies that the financial knowledge of level 100 students is not different from level 200 students. Therefore in the logit model these categories will be treated as one. The gaps in the correct responses rate between level 200 and 300 were about 6% for general knowledge, 6.85% for savings and borrowing, 3.66% for investment, 4.93% for insurance and 5.36% for the entire survey. These differences were statistically significant at the 0.01 level. It can therefore be deduced that level 300 are more financially knowledgeable than level 200.

The differences in the correct response rates between level 300 and 400 were about - 0.78% for general knowledge, -0.81% for savings and borrowing, 3.09% for

investment, 1.20% for insurance and 0.68% for the overall score. These differences were statistically not significant except their knowledge in investment. It can therefore be concluded that the level of financial knowledge of level 400 and 300 are almost at par so they will be treated as one category in the logit model. Post-graduate students on the average are about 9.84%, 6.77%, 9.23%, 11.69% and 9.38% likely to answer questions correctly on general knowledge, savings and borrowing, investment, insurance and the composite financial score respectively than level 400 students. These differences are statistically significant. Clearly, postgraduate students are more financially knowledgeable than undergraduate students.

6.3.3 Financial Literacy and Experience

In terms of respondents' ages, results presented in Table 7a show means correct scores of 47.44% in general knowledge, 56.88% in savings and borrowing, 37.05% in investment and 35.93% in insurance for ages 20 years and below. Respondent in age category 21-25 years on average answered correctly 49.71% of the general knowledge questions, 60.16% of the savings and borrowing questions, 42.20% of investment questions, and 38.86% of the insurance questions. Table 7a further reveals that respondents in age group 26-30 obtained mean correct scores of 53.14% in general knowledge, 63.72% in savings and borrowing, investment 46.35% and 46.08% in insurance. Also, respondents in age group 31-40 years, on the average obtained correct scores of 53.69%, 66.64%, 46.84% and 46.52% in general knowledge, savings and borrowing, investment and insurance respectively. The last group which is age 40 years and above obtained mean correct scores of 56.73% in general knowledge, 62.41% in savings and borrowing, 50.00% in investment and 48.12% in insurance. It can be deduced from the mean scores for the four dimension

that respondents' financial knowledge increase with age except savings and borrowing where age 31-40 had more knowledge than age group 41 and above. The overall means show that respondents who have advanced in age are more knowledgeable than those who have not. The values of F-statistic for the four dimensions and the entire survey suggest that these differences are statistical significant at the 0.01 level. This implies that age impacts on financial knowledge. This finding is slightly different from Chen and Volpe (1998). While this study reveals a progressive increase in financial knowledge with age, they find that participants in the age category of '20-29' and '40-or-older' exhibited greater knowledge than the other age groups. An increase in age comes with the accumulation of knowledge based on practical life experiences (Agarwal et al., 2009).

Levene test for equality in means presented in Table 7b shows that, on the average, age group 21-25 as compared to age up to 20 years are about 2.30%, 3.27%, 5.20%, 2.94% and 3.4% likely to answer questions correctly on general knowledge, savings and borrowing, investment, insurance and the entire survey respectively. These differences are statistically significant. Also the correct response rate for questions on general knowledge, savings and borrowing, investment, insurance and the composite score were about 3.43%, 3.57%, 4.13%, 7.20% and 4.58% points respectively higher for those in age group 26-30 than those in age group 21-25. These differences were statistically significant. However, the correct response gaps between age groups 31-40 vrs 26-30 and 41 & above vrs 31-40 were statistically insignificant. The import of this is that the financial literacy level of these age groups is the same. Thus financial literacy varies positively with age to a particular point.

Results from Table 7a shows that students with no work experience have mean correct scores of 46.06% in general knowledge, 55.64% in savings and borrowing, 36.46% in investment and 34.93% in insurance. Students with less than two years of working experience record average correct scores of 51.63%, 62.57%, 43.87% and 40.51% in general knowledge, savings and borrowing, investment and insurance respectively. Respondents with more than two but less than four years of working experience recorded mean scores of 54.25% in general knowledge, 63.91% in savings and borrowing, 48.95% in investment, and 45.62% in insurance. Respondents with four to less than six years working experience on the average answered correctly 51.44%, 64.19%, 44.50% and 47.24% of the questions on general knowledge, savings and borrowing, investment and insurance respectively whilst respondents with six or more year of working experience recorded mean scores of 55.17% in general knowledge, 66.11% in savings and borrowing, 47.60% in investment, and 46.72% in insurance. The mean differences for the entire dimension are statistically significant at the 0.01. The means for the entire survey indicate that respondents with six or more years (53.90%) and those with two to less than four years (53.19%) are more knowledgeable than the other groups. Those with two or more years of experience are more financially knowledgeable than those with less than two years work experience.

Table 7b also reveals differences in financial literacy according to the categories in work experience. The gaps in the response rate between students with less than two years' experience and those with no work experience were 5.58%, 6.93%, 7.43%, 5.60% and 6.39% for questions on general knowledge, savings and borrowing, investment, insurance and the entire survey respectively. The differences were

statistically significant at the 0.01. This implies that the students with work experience are financially knowledgeable than those with no experience. The gaps in the correct responses rate between students with 2 to less than 4 years of work experience and those with less than 2 years were about 2.62% for general knowledge, 1.34% for savings and borrowing, 5.06% for investment, 5.09% for insurance and 3.53% for the entire survey. These differences were statistically significant at the 0.01 level with the exception of that of savings knowledge. It can therefore be deduced that students with 2 to less than 4 years' experience are more financially knowledgeable than those with less than 2 years working experience. The differences in the correct responses rate between students with 4 to less than 6 years, and 2 to less than 4 years; and the difference between those with experience 6 years and 4 years to less than 6 years in general were not statistically significant. This means that the financial knowledge of those in these categories are at par. The implication of this is that some level of experience from 2 years makes a student more financially knowledgeable but not necessarily too much of work experience. Thus some work experience is associated with financial literacy. This is consistent with the findings of Chen and Volpe (1998) and Ansong and Gyensare (2012). All things being equal, the more acquainted a worker is to a particular job, the more experienced he/she would be and hence the likelihood that he/she will be acquainted with financial issues like wages and salaries, fringe benefits, and savings and investment Ansong and Gyensare (2012).

6.3.4 Financial Literacy and Income

Table 7a also reveals differences in financial literacy according to income. Respondents within incomes of GH¢1,500 - 4,999 and GH¢5,000 - 14,999 scored

high means in general knowledge (55.70% and 56.43%), savings and borrowing (58.08% and 62.80%), investment (46.45% and 49.52%) and insurance (45.10% and 47.01%), respectively. The table reveals mean correct scores in general knowledge (46.61%), savings and borrowing (63.36%), insurance (35.96%) and investment (38.89%) for incomes under GH¢400. Whilst respondents within income group GH¢400 - 1,499 obtained means correct scores of 51.08% in general knowledge, 63.37% in savings and borrowing, 43.80% in investment and 42.18% in insurance, those in incomes group of more than GH¢15,000 obtained mean scores of 52.05%, 54.73%, 41.10% and 39.49% in general knowledge, savings and borrowing, investment and insurance respectively. The findings suggest that respondents within income group of GH¢5,000 - 14,999 exhibit greater financial knowledge than the other income group. The differences in means are statistically significance at the 0.01 level.

In terms of categories of income, Table 7b shows differences in financial literacy according various income levels. Respondents with income between GH¢400 - 1,499 are more likely than respondents with incomes under GH¢400 to answer all the four financial literacy dimensions questions correctly. The overall literacy gap for these categories is 5.09 which is statistically significant. Respondents with incomes between GH¢1,500 - 4,999 are more likely to answer financial literacy questions correctly than those with income between GH¢400 - 1,499. The overall literacy gap for these categories is 2.69 which is statistically significant at the 0.01 level.

The difference in means between income groups 5,000-14,999 and 1,500-4,999 was not significant. This means that the financial knowledge of these two categories is similar.

Table 7b: Difference in Means (%)

	General Knowledge	Savings & Borrowing	Investment	Insurance	For The Sample
A. Education					
1. Academic Discipline					
Business majors vs Non-business majors	11.4***	12.8***	13.5***	9.1***	11.7***
2. Class Rank					
a) Level 200 vs 100	1.9	-0.2	2.9**	1.5	1.2
b) Level 300 vs 200	6.0***	6.9***	3.7***	4.9***	5.4***
c) Level 400 vs 300	-0.8	-0.8	3.1***	1.2	0.7
d) PG vs Level 400	9.8***	6.8***	9.2***	11.7***	9.4***
3. Business Concentration					
Accounting/Finance vs Non-accounting	4.9***	3.2***	3.5***	2.8**	3.6***
4. SHS field of study					
a) BusvrsGEcons	7.6***	8.3***	7.4***	8.6***	7.7***
b) GEcons v.GArts	6.4***	3.5**	1.0	-0.2	2.7*
c) GArtsv.Science	-4.0**	0.5	-0.3	3.4**	-0.1
d) Science v. Visual arts	4.6	0.6	3.2	-2.9	1.4
B. Gender					
Male vs Female	4.0***	5.8***	5.4***	5.8***	5.2***
C. Experience					
1. Work Experience in Years					
a) Less than 2 vs None	5.6***	6.9***	7.4***	5.6***	6.4***
b) 2 to less than 4 vs less than 2	2.6**	1.3	5.1***	5.1***	3.5***
c) 4 to less than 6 vs 2 to less than 4	-2.8	0.3	-4.5***	1.6	-1.3
d) 6 or more vs 4 to less than 6	3.7*	1.9	3.1*	-0.5	2.1
2. Years of Age					
a) 21- 25 vs Up to 20	2.3**	3.3***	5.2***	2.9***	3.4***
b) 26 - 30 vs 21- 25	3.4***	3.6***	4.1***	7.2***	4.6***
c) 31- 40 vs 26 – 30	0.6	2.9**	0.5	0.4	1.1
d) 41 above vs 31- 40	3.0	-4.2	3.2	1.6	0.9
D. Income					
1. Last year income in GH¢					
a) 400-1,499 vs Under 400	4.5***	4.7***	4.9***	6.2***	5.1***
b) 1,500-4,999 vs 400-1,999	4.6***	0.6	2.6**	2.9**	2.7***
c) 5,000-14,999 vs 1,500-4,999	0.7	0.0	3.1	1.9	1.4
d) 15,000 above vs 5000-14,999	-4.4	-8.6***	-10.0***	-5.9**	-7.2***

***P<0.1, **P<0.05 and ***P<0.01**

Source: Field Survey, 2014

Ironically, respondents with income higher than GH¢15,000 are less likely to answer financial literacy questions correctly as compared to respondents in the income bracket GH¢5,000 - 14,999 implying that higher levels of income do not automatically suggest higher financial literacy. These differences are statistically significant at 0.01 and 0.05 level.

Comparatively, the correct response rate gaps in Table 4 suggest that some amount of income is needed to promote high financial literacy. This is consistent with the findings of Hilgert and Hogarth (2002). Their survey of consumers in the U.S. shows that less financially knowledgeable respondents were more likely to be relatively low income earners.

6.4 FINANCIAL LITERACY AND FINANCIAL EXPOSURE

Apart from the basic characteristics of respondents, family characteristics, area lived, source of fund for education and participation in the financial market are likely means through which students could be exposed to financial matters. This rich set of variables will be used in the logit model as controls. This section therefore examines whether there is a relationship between the exposure characteristics and financial literacy. ANOVA is employed to detect if there exist differences in the level of financial knowledge of the respondents based on the exposure variables. The results are reported in Table 8.

6.4.1 Family Characteristics

The results from Table 8 show that respondents' knowledge varies with family characteristics. Surprisingly, students whose fathers have non university education

have correct mean scores higher than those whose fathers have with first degree and beyond. The differences in financial knowledge are significant at the 0.01 and 0.1 levels for general knowledge, savings and borrowing and the entire survey. The differences in the investment and insurance knowledge were not significant. This implies that fathers' educational level has some influence on the financial knowledge of their children. Comparatively, mothers' educational level as shown by the ANOVA test impacts more on their children knowledge than fathers' education. The differences in mean were all significant for the four dimensions and the entire survey. Consistent with fathers' educational level, students with relatively more financial knowledge have mothers with educational level lower than first degree as evidenced by the means scores in Table 8. This is inconsistent with findings of Lusardi, Mitchell and Curto (2010). They report that those whose mother had some college education or graduated from college are more financially knowledgeable than those whose mothers have low education. Also, Ansong and Gyensare (2012) in their study of students at University of Cape (UCC), Ghana observed that mother's level of education has a positive and significant impact on the financial literacy of children.

In terms of employment status of parents, on average, students whose fathers are unemployed answered correctly 48.62% of the general knowledge questions, 58.68% of the savings and borrowing questions, 41.16% of the investment questions and 37.29% of the insurance questions. Those whose parents are self-employed, on average recorded correct scores of 49.24% for general knowledge, 60.22% for savings and borrowing, 41.44% for investment and 39.40% for insurance. Students whose fathers are employees, recorded mean correct scores of 52.46, 62.37%,

44.35%, and 42.88 in general knowledge, savings and borrowing, investment and insurance respectively. For the entire survey, wards of fathers who are unemployed, self-employed and employees obtained mean scores of 46.44%, 47.58%, and 50.52% respectively. Clearly, the average correct scores of wards of fathers who are employees are higher than the other categories. And also the financial knowledge of students whose fathers are employed is higher than students having unemployed fathers. The differences in means for all the financial literacy dimensions and the entire survey are very significant. This means that the employment status of fathers has an impact on the financial literacy of their wards.

The financial literacy of students according to the mothers' employment status is very similar to that of the father. The only difference is that wards of mothers who are unemployed or self-employed are more knowledgeable in savings and borrowing than wards of mothers who are employees. The differences in means for all the financial literacy dimensions and the entire survey are significant. This implies that the employment status of mothers has an impact on the financial literacy of their wards.

On the average, students with driving experience answered correctly 51.45% of the general knowledge questions, 61.61% of the savings and borrowing questions, 45.20% of the investment questions and 43.5% of the insurance questions. They obtained overall mean score of 50.44% for the entire survey. However, students with no driving experience obtained mean correct scores of 50.15% in general knowledge, 50.44% in savings and borrowing, 41.58% in investment, 39.46% in insurance and 47.97% for the entire survey. The differences in means for general knowledge and

savings and borrowing were statistically not significant. However, the differences in means for knowledge in investment, insurance and the entire survey were statistically significant at the 0.01 level. The implication of this is that students with driving experience are only more knowledgeable in investment and insurance than those with no experience. Overall, driving experience has an impact on financial literacy. Students who drive tend to have more financial literacy knowledge than those who do not drive. Students who drive normally have to make various decisions relating to money management in areas of payments of fuel bills, insurance coverage for their cars, replacement of their car parts, repairs and maintenance of their cars, renewal of road worthy certificates as well as renewal of their driving licences among others compared to their colleagues who do not drive and as such do not have to bother themselves with these money management issues.

6.4.2 Area Lived and Source of Fund for Education

The results in Table 8 reveal that on the average respondents in the various regions record means correct scores above 60% for savings and borrowing. In terms of general financial knowledge of the respondents, five regions namely, Central (51.52%), Eastern (51.05%), Greater Accra (53.53%), Northern (54.20%) and Volta (51.08%) obtained mean scores above 50%. The other five obtained mean scores less than 50%. All the regions recorded mean scores below 50% for knowledge in investment and insurance. Four regions namely Central (51.19%), Greater Accra (51.29%), Northern (51.73%) and Volta (50.50%) obtained composite mean score of 50% and above while the rest obtained means scores less than 50%. The overall test indicates that the means of these groups are statistically significant at 0.01. The

implication of this is that, the region that a student lived could have potential impact on his/her financial literacy.

Table 8 shows that respondents' financial knowledge varies with whether they live in the regional capital or not. The percentage correct answers from respondents who live in the capital town (50.52) for the entire survey are higher than those who live outside the capital (46.68). This pattern persists among all the financial literacy dimensions. On the average, those who live in the capital answered 51.94% of the general knowledge questions, 62.40% of the savings and borrowing questions, 44.89% of the investment questions and 42.84% of the insurance questions correctly. However, students who live outside the capital obtained mean correct scores of 48.07%, 57.34%, 39.28% and 37.04% in general knowledge, savings and borrowing, investment and insurance respectively. The values of F-statistic for the four dimensions and the entire survey suggest that these differences are highly significant. This implies that students who live in the capital town of their regions are more financially literate than those who live outside the capital. The reason why students who live in capital towns tend to be more financially literate than those who do not live in capital towns could be as a result of differences in the level of exposure to financial matters. For instance those in capital towns are often blessed with access to financial services due to the huge presence of financial institutions in those areas. Almost all major financial institutions have their presence in the various regional capitals and as such students who live in those areas are often fed with so much information about various financial services through the print and non-print media.

On average, respondents who live on campus answered correctly 49.66% of the general knowledge questions, 59.44% of the savings and borrowing questions, 41.21% of the investment questions, 37.92% of the insurance questions and 47.13% for the entire survey. Those who live in rented accommodation obtained mean correct scores of 50.62% in general knowledge, 62.24% in savings and borrowing, 42.67% in investment, 41.71% in insurance and 49.31% for the entire survey. Students who live in their own house recorded mean correct scores of 52%, 60.73%, 44.63%, 44.46 and 50.46% in general knowledge, savings and borrowing, investment, insurance and entire survey respectively. On average, respondents who live with their parents/relatives answered correctly 51.26% of the general knowledge questions, 60.80% of the savings and borrowing questions, 48.97% of the investment questions, 43.47% of the insurance questions and 51.13% for the entire survey. From the overall mean scores, respondents who live in campus halls are less financial literate than those who live off campus. The differences in means are statistically significant with the exception of that of general knowledge.

Students who live off campus tend to have high financial knowledge than those who live within campus partly due to the fact that they would have made various decisions relating to money management in areas of payments of rent, light bills, gas and other utilities hostels do not cater for. For instance students who live on campus often do not pay directly for these utilities, as such their money management skills and financial literacy for that matter is often low.

In terms of how students finance their education, the mean score scores for the entire survey (from Table 8) suggest that students who self-finance their education

obtained mean score of 53.04%, those who rely fully on the family had mean score of 46.46, those who are supported by both self and family obtained mean score of 50.42% and those on scholarship obtained average score of 50.59%. Clearly, it can be seen that those who do not have full involvement of their family in financing their education are financially knowledgeable than those with full family involvement. The differences in means are statistically significant 0.01. This is so because students whose families do not support them fully in financing their education are often compelled to take up vacation jobs and other businesses during long vacation in order to raise some money on their own towards their education. In the process of earning money, they get exposed to financial issues such as money management, savings, borrowings, and investments. This therefore results in them having high financial knowledge than their colleagues who receive full support from their family in financing their education and as such do not have to take up these vacation jobs which could have helped expose them to various money management matters.

6.4.3 Financial Market Participation

Table 8 shows that respondents' financial knowledge varies with their involvement in the financial market. On the average, those who have personal accounts answered correctly 51.25% of the general knowledge questions, 61.84% of the savings and borrowing questions, 43.25% of the investment questions, 41.12% of the insurance questions and 49.36% for the entire survey. Those without at least a personal account obtained mean correct scores of 45.76%, 55.53%, 38.63%, and 37.49% in general knowledge, savings and borrowing, investment, insurance and the entire survey respectively. Clearly, it can be deduced from the means scores that students with personal accounts are financially literate than those without account. The values of

F-statistic for the four dimensions and the entire survey suggest that these differences are highly significant.

Also, the overall percentage for correct answers from respondents who have an investment (54.04) for the entire survey is higher than those who don't have investment account (47.80). This pattern persists among all the financial literacy dimensions. The differences in means are significant at the 0.01 level. This implies that students with investment account are more financially literate than those without investment account. Students who have personal and investment accounts have to make a lot of financial decisions regarding which financial institution they should open an account or invest with as well as which particular investment package they should select since there are a lot of investment products on offer by financial institutions. In the process of making these decisions, they might consult individuals with more financial knowledge and expertise for advice and also they usually obtain information from the various financial institutions regarding the various investment opportunities available and their corresponding interest rates as well as the various accounts that can be opened. The implication of all these is that, they will become more exposed to financial issues thereby making them more financially literate than their colleagues who do not have personal or investment accounts.

Table 8: Mean % of Correct Responses by Exposure Variable and Results of ANOVA

	General Knowledge	Savings & Borrowing	Investment	Insurance	For The Sample
A. Family Characteristics					
1. Father's Education					
a) None/JSS/MSLC	51.9	63.4	42.4	41.4	49.8
b) SHS/Equivalent	49.8	60.5	41.7	40.1	48.0
c) Training college, nursing, poly etc.	51.9	62.7	44.4	42.2	50.3
d) Bachelor's degree	48.7	59.3	42.8	38.9	47.4
e) Masters/doctorate /professional	49.7	57.1	41.9	40.6	47.3
F-Statistics	(2.07)*	(7.96)***	(1.34)	(1.91)	(3.82)***
2. Mother's Education					
a) None/JSS/MSLC	52.6	64.1	42.9	41.7	50.3
b) SHS/Equivalent	49.3	59.9	41.5	40.7	47.9
c) Training college, nursing, poly etc.	50.7	60.4	44.2	41.3	49.3
d) Bachelor's degree	45.8	55.0	43.2	36.3	45.1
e) Masters/doctorate /professional	47.6	54.3	38.6	36.5	44.3
F-Statistics	(6.05)***	(16.20)***	(2.59)**	(5.65)***	(9.44)***
3. Father's Occupation					
a) Unemployed	48.6	58.7	41.2	37.3	46.4
b) Self Employed	49.2	60.2	41.4	39.4	47.6
c) Employee	52.5	62.4	44.4	42.9	50.5
F-Statistics	(6.77)***	(4.77)***	(6.31)***	(11.92)***	(12.38)***
4. Mother's Occupation					
a) Unemployed	48.2	60.0	39.8	37.5	46.4
b) Self Employed	50.6	61.7	42.8	41.2	49.1
c) Employee	51.9	59.8	44.1	41.3	49.3
F-Statistics	(2.96)**	(2.30)*	(5.04)***	(5.31)***	(4.68)***

* $P < 0.1$, ** $P < 0.05$ and *** $P < 0.01$ level

Source: Field Survey, 2014

Table 8 Continued

	General Knowledge	Savings & Borrowing	Investment	Insurance	For The Sample
B. Area Lived, Funding for Education and Driving Experience					
1. Region Most Lived					
a) Ashanti	50.0	60.5	41.9	40.1	48.1
b) BrongAhafo	48.8	61.9	40.7	39.4	47.7
c) Central	51.5	65.1	45.3	42.8	51.2
d) Eastern	51.1	61.2	41.3	39.0	48.1
e) Greater Accra	53.5	62.2	46.5	42.9	51.3
f) Northern	54.2	63.2	48.1	41.4	51.7
g) Upper East	49.6	63.0	37.6	40.2	47.6
h) Upper West	45.5	52.9	36.7	35.8	42.7
i) Volta	51.1	65.4	42.8	42.7	50.5
j) Western	48.9	61.9	42.3	41.2	48.6
k) Foreign	40.1	48.3	31.3	33.6	38.31
F-Statistics	(4.22)***	(6.72)***	(7.65)***	(3.02)***	(8.20)***
2. Capital Town					
a) Yes	51.9	62.4	44.9	42.8	50.5
b) No	48.7	59.3	39.7	37.7	46.4
F-Statistics	(11.93)***	(13.99)***	(37.54)***	(38.01)***	(40.68)***
3. Housing arrangement					
a) On-campus	50.0	59.4	41.2	37.9	47.1
b) Off-campus rent/hostel	50.6	62.2	42.7	41.7	49.3
c) Off-campus own house	52.0	60.7	44.6	44.5	50.5
d) Live with parents/relatives	51.3	60.8	49.0	43.5	51.1
F-statistics	(0.58)	(3.26)**	(6.46)***	(10.15)***	(5.50)***
4. Financing Education					
a) Fully self	53.6	66.0	46.8	45.7	53.0
b) Fully family	49.1	59.2	40.7	38.4	46.9
c) Both self and family	51.6	61.9	44.6	43.5	50.4
d) Scholarship	54.1	61.5	46.9	41.2	50.6
F-Statistics	(5.78)***	(13.14)***	(12.48)***	(18.26)***	(19.98)***
5. Driving Experience					
Yes	51.5	61.6	45.2	43.5	50.4
No	50.2	50.4	41.6	39.5	48.0
F-Statistics	(1.74)	(1.09)	(16.37)***	(21.02)***	(12.77)***
C. Financial Market Participation					
1. Financial Accounts					
a) Personal account	51.3	61.8	43.3	41.1	49.4
b) No personal account	45.8	55.5	38.6	37.5	44.4
F-Statistics	(19.49)***	(31.14)***	(16.46)***	(10.40)***	(32.51)***
2. Investment Account					
a) Investment	54.2	65.3	50.3	46.4	54.0
b) No investment	49.9	60.2	41.4	39.7	47.8
F-Statistics	(10.36)***	(16.91)***	(52.98)***	(30.71)***	(43.41)***

*P<0.1, **P<0.05 and *** P<0.01 level

Source: Field Survey, 2014

CHAPTER SEVEN

MULTIVARIATE LOGIT ANALYSIS

7.0 INTRODUCTION

In the previous chapter, we observed from the univariate analysis that financial literacy levels vary with respondent's demographic and family characteristics. In this chapter, a multivariate analysis is used to assess determinants of financial literacy after controlling for many other financial exposure characteristics. Four different models are examined: Model I considers only the basic characteristics of respondents; Model II includes the basic characteristics together with family characteristics; Model III includes variables in Model II and respondents' residential characteristics and how they finance their education; and Model IV includes variables in Model III plus financial market involvement of respondents. The functional forms of the models estimated and the justification for each of the models used are presented in the methodology in chapter five. Using the multivariate models, the marginal effects of specific characteristics on levels of financial literacy beyond the effects of other known characteristics can be assessed. Each of these models is estimated for all the four dimensions to financial literacy as well as the composite measure of financial literacy. Most of the interpretations and conclusions were based on the fourth model since it controls the effect of other variable aside the basic variable. For the test of hypotheses, the conclusions are mostly based on the composite financial literacy score. The logit results are reported in Table 9a and 9b.

7.1 MULTICOLLINEARITY TESTS

The effect of multicollinearity in multivariate regressions is an important issue. Common approaches in identifying multicollinearity problems include the use of

bivariate correlations and assessing the variance inflation factors (VIF) of the independent variables concerned. The VIF for a variable shows the increase in variance of the coefficient associated with the variable that results from the fact that the variable is correlated with the other variables in the multivariate model. The Pearson correlation as well as the VIF was employed to examine the possible degree of multicollinearity among the predictive variables used in this study. Appendix 3 provides summary results of the Pearson correlation between variables used in the prediction of financial literacy among university students. The VIF results are reported in Appendix 4. There are no defined critical values for assessing significant multicollinearity using the bivariate correlations or the VIF. However, a rule of thumb used in the literature is that a VIF greater than five ($VIF > 5$) or a tolerance level of less than 0.2 (Gujarati, 2004) and correlation coefficient greater than 0.8 (Asteriou and Hall, 2011) are indicative of significant multicollinearity. Others suggest a cut-off point of VIF greater than 10 (see for example Neter, et al. 1990; and, Kutner, et al. 2005). Largely, the results from both the Pearson correlation and VIF presented in Appendix 3 and Appendix 4 suggest any potential issues of multicollinearity are not significant since the VIFs and the correlation coefficients fall below the cut-off points of five and 0.8 respectively.

7.2 GENDER

As shown in Table 9a and 9b, there is significant evidence of gender differences in the likelihood of a respondent to be financially literate. Even after accounting for many basic characteristics and exposure variables, male respondents are more likely to obtain a higher score than female respondents in general knowledge in finance. Being male increases the likelihood of being more financially knowledgeable in

general issues in finance by 5%. Regarding savings and borrowing, males are more likely to be more knowledgeable than females (increase in probability by 9%). There is insignificant difference in the investment knowledge of males and females for the model I. However, the difference became statistically significant after accounting for rich set of variables in models II, III and IV. In all, being a male increases the probability of having more knowledge in investment by 3%. In terms of knowledge in insurance, males are more likely to be knowledgeable than their female counterparts. The differences for all the dimensions are statistically significant. The overall survey depicts that males are more likely (increase in probability by 7.8%) to be financially knowledgeable than females at the 0.01 level. The results show that gender is a strong predictor of financial literacy and the effect does not diminish, even after accounting for many other characteristics. Hence, the hypothesis that there is a significant difference in the level of financial literacy of students based on their gender is accepted.

The finding that females are less financially literate than males is consistent with existing literature (Bumcrot et al., 2011; Al-Tamimi and Kalli, 2009; and Beal and Delpachitra, 2002). As seen from the results of the study, males outperformed females in all the dimensions to financial literacy after even accounting for many other characteristics. Many authors have made attempts to give probable reasons why this is the case. Some believe the difference is due to cultural and social barriers, self-confidence, and lack of interest in financial topics among women. For instance, Goldsmith, Goldsmith and Heaney (1997) suggest that women are less financially literate than men because in general women are less interested in the topics of investment and personal finance and, consequently, use financial services

less often. This reason might apply to University students in Ghana in that during my questionnaire administration, I observed that male students were very eager to get a feedback on how they performed. Also, most of the male respondents were very curious about investment issues and they asked a lot of questions on the best investment vehicle in Ghana now. The enthusiasm shown by the male respondents is indicative that they are interested in financial issues than their female counterparts.

Another possible reason is that within the context of developing countries, different financial socialization during childhood is a major factor for this difference (Falahati and Paim, 2011). Men are normally responsible for financial decisions in various households and are therefore more likely to understand financial concepts better than their female counterparts. As children grow up, they mimic these behaviours and these reflect in their interest and knowledge in finance in future. This may be a possible reason for the gender differences in students since boys are likely to mimic the financial dominance of their fathers. Another reason normally given is that females are more likely than men to underestimate their own financial knowledge which normally reflect in their choice of "don't know" to financial literacy questions if they are not sure of the answer. This reason is very much applicable to female students in universities in Ghana. The cross tabulation in Appendix 5 provides evidence to this. Overwhelmingly, female respondents recorded high don't know percentage responses for all the 26 financial literacy questions. With the exception of four questions, the differences in most of the responses are significant at 0.01 level.

7.3 EDUCATION

The coefficients of Unistudy (referring to non-business major in the university) for all the dimensions and the entire survey are negative and significant at the 0.1 and 0.01 levels. Consistent with the ANOVA, the results suggest that non business majors are more likely to be less knowledgeable about financial issues than business major. Being a non-business student increases the likelihood of being less knowledgeable in general issues in finance, savings and borrowing, investment and insurance by 6.5%, 10.9%, 13.4% and 7.8% respectively. Overall, non-business majors have lower probability of being financially literate by about 13.9%. This pattern is also consistent with the ANOVA results in Table 7a at 0.01 level. The coefficients of Accounting for the four financial literacy dimensions and the composite financial literacy score are negative and significant at 0.01 level. The results suggest that business students not majoring in accounting and finance are more likely to be less knowledgeable in general issues in finance, savings and borrowing, investment and insurance than accounting and finance students. This implies that the choice of course at the university and area of concentration in business are predictors of financial literacy. Hence the hypothesis that there is a significant difference in the level of financial literacy of students based on their academic discipline is accepted.

The findings that business majors are more financially knowledgeable are very much consistent with findings of previous studies (Lusardi and Mitchell, 2007b; and Chen and Volpe, 2002, 1998). For instance Chen and Volpe (2002, 1998) report that students in U.S who are non-business majors are more likely to be less knowledgeable about personal finance than business majors One reason for this is

that the curriculum or course contents of business students offer them the platform to take accounting and finance related courses. Most business students irrespective of their areas of concentration are likely to take classes in principles of accounting, business finance, business mathematics etc. Among the business majors, the findings that accounting/finance students are more knowledgeable than the non-accounting/finance students is also consistent with the findings of Oppong-Boakyie and Kansanba (2013). They find that financial literacy is highest among accounting students followed by banking and finance, marketing, and human resource management students at KNUST Business School, Ghana. Although, most of business students will take basic courses in accounting and finance, it is expected that those specialising in accounting/finance will have the extra opportunity of studying more specialized finance rooted courses like financial management, investment and portfolio management, financial markets, insurance etc. All things being equal, their financial knowledge level will be higher than those pursuing non accounting/finance programmes.

The results reported in Table 9a and 9b indicate that students from lower class ranks are more likely to be less financially knowledgeable than those from postgraduate classes. This is significant at the 0.01 level across all the models and dimensions of financial literacy. Being in Rank1 (Level 100 and 200 students) decreases the probability of being knowledgeable in general issues in finance, savings and borrowing, investment and insurance by 23.7%, 16.6%, 16.8%, and 20% respectively. Overall, being in rank decrease the likelihood to be financially literate by 30.6%. The negative coefficients for the four dimensions for rank2 suggest that level 300 and 400 students are more likely to be less knowledgeable in general

financial matters, savings and borrowing, investment and insurance as compared to graduate students. In sum, being in level 300 and 400 decreases the chance of being financially literate by 23.4%. These results show that class rank is a strong predictor of financial literacy, even after accounting for many other characteristics. This is very consistent with the results obtained from ANOVA and Levene test in Table 7a and 7b. Hence the hypothesis that there is a significant difference in the level of financial literacy of students based on their year of study is accepted.

Respondents, who are at higher levels of their studies obtained higher scores in the survey. This finding is very consistent with existing literature (Chen and Volpe (1998). They report that respondents from lower class rank (freshmen, sophomores and juniors) are more likely to be financially knowledgeable than those from graduate classes. One explanation normally offered by authors is that students naturally pick up more about personal finance when they stay in the university longer. The tendency for them to appreciate financial issues and attend workshops grows with time. A practical example is that final year students will be eager to know much about savings and investment when they realize that they will soon be stepping into the real world. Another possible reason is that a lot of courses with practical finance orientation are left for high level of study. Critical in built finance courses like strategic management, entrepreneurship, management accounting (budget) etc. are normally treated at final year or postgraduate level. Thus the subject requirements at various levels of studies can account for these differences.

Students' area of study at SHS/equivalent is another predictor of financial literacy. It can be observed from Table 9a and 9b that the coefficients of Shsstudy1 and

Shsstudy2 all carry negative signs, suggesting that those who do not study business at SHS are more likely to be less financially knowledgeable than those who study business. The overall survey suggests that studying general arts with economics and science/visual arts decreases the probability to be financially literate by 6.4% and 7.3% respectively. These differences are significant at the 0.01 level for all the models and components of financial literacy. This implies that students who studied business subjects in senior high school/equivalent are likely to be more financially literate than their counterparts who studied non-business subjects. This is not surprising since business students at SHS might have come across some of the finance issues in the accounting, business management and economics subjects they studied.

7.4 EXPERIENCE

In terms of age related experience, the results are inconclusive. Respondents in age group up to 20 years (Age1) are more likely to be knowledgeable in general issues in finance than the other age groups. However, knowledge in savings, investment, insurance and the composite financial literacy score reported insignificant differences. Although, the coefficients of Age2 (21-25 years) exhibit both positive and negative signs, they are not statistically significant with the exception of model I and II when using the composite FL measure. The insignificance indicates that there is little difference between those whose ages are between 21 and 25 and those above 30 years. Students with ages between 26 and 30 years (Age3) are less likely to be financially literate. However, knowledge in general issues in finance, savings, investment and insurance reported insignificant differences. Critical examination of the results reveal that age of students barely has any statistical significant impact on

students' likelihood to be financially knowledgeable. This means age might not be a predictor of financial literacy. This is inconsistent with the ANOVA results and Levene test for equality in means. The Age effect observed in the univariate analysis may simply be capturing other cross sectional variation such as level of study. Hence the hypothesis that there is a significant difference in the level of financial literacy of students based on their age is accepted.

In general, *AGE* does not seem to matter in explaining the level of financial literacy of university students in Ghana in the presence of other underlying factors associated with variation in financial literacy scores. This finding contradicts that of Worthington (2004), Almenberg and S  ve-S  derbergh (2011), Lusardi and Mitchell (2006), Cole et al. (2009), and Monticone (2010), who find that age is a significant determinant of financial literacy in the United States, Sweden and Italy. It also contradicts the findings of Micomonaco, 2003; Chen and Volpe, 1998; and Volpe et al., 1996. The likely reason for this finding could be linked to the young or dependency ages of the respondents. As depicted in Table 4a, about 69% of the respondents are below 26 years, and about 88.3% are below age 31. Most of them are in their early stage of their financial life cycle or still dependent on their families for their sustenance so they might not have much variation in their financial levels. This might not be the case for developed countries where most of the financial literacy studies have been done. In Ghana, it is not uncommon to find students who are below 26 and in extreme cases below 31 years highly dependent on their families and not in active employment. The cross tabulation in Appendices 6 and 7 show that most of the respondents below age 31 have no or low work experience and also dependent on their families in financing their education.

In respect of work experience, the results show that some level of work experience is necessary for students to be knowledgeable in financial matters. The negative coefficients for Experience1 show that students with no work experience were less likely to be knowledgeable in general finance issues, savings and borrowing, investment and insurance as compared to those with experience. These are statistically significant at 0.01 level. However, the differences among higher levels of work experience were statistically not significant for all the dimensions and the composite financial literacy measure except for the knowledge in insurance and model I of savings and borrowing. Students with less than two years work experience are more likely to be less knowledgeable in insurance than those with work experience of two years and above. Overall, some level experience is a predictor of financial literacy. Hence the hypothesis that there is a significant difference in the level of financial literacy of students based on their work experience is accepted.

While others like Ansong and Gyensare (2012) and Chen and Volpe (1998) find a progressive positive link between work experience and financial literacy, the results of this study revealed that financial literacy is influenced positively by work experience to a certain level. There was not any major variation in financial literacy at higher work experience levels. The extremes are no experience and some experience. This must be due to probably the relatively inexperienced nature of the respondents or the fact that the study had limited number of respondents with higher work experience. Also, the work environment provides a platform for people to accumulate financial knowledge based on experiences gained from their area of work or the financial behaviour/knowledge/ practices of their colleagues at work.

7.5 INCOME

Some level of income is necessary to improve students' financial knowledge. The table reveals that respondents with income levels below GH¢400 per year were more likely to be less knowledgeable in general issues relating to finance, savings and borrowing, investment and insurance. Overall, being a respondent with income as low as below GH¢400 decrease the probability of being financially literate by 7.6%. Earning income between GH¢400-1,499 (Income2) is associated with the likelihood of being less knowledgeable in general finance matters and insurance (for models I, II and III). Overall, they are more likely to be less financially knowledgeable than those who earn income above GH¢1,499 for models II and III. The results show that there were not many differences in respondents' financial knowledge at higher levels of income. Generally, some amount of income beyond GH¢400 can improve the financial literacy of students. Hence the hypothesis that there is a significant difference in the level of financial literacy of students based on their income is accepted.

Existing literature points overwhelmingly to the fact that high income earners tend to be more financially literate than no or low income earners (Lusardi, 2012; Hastings and Mitchell, 2011). From this study, it was observed that some level of income is needed to boost one's financial knowledge. Previous studies find a progressive positive relationship between income and financial literacy, suggesting that at every point that income increases, the financial literacy level is also likely to increase. However, the results from this study indicate that financial literacy is progressively influenced by income to a point. After that point the level financial literacy do not change. A probable cause of this non progressive positive relationship may be due to

the income level ratios. Income levels under GH¢ 400 (36.8% of respondents) and GH¢ 400 – 1,499 (39.5% of respondents) dominate the sample size. The respondents for the three other income levels in all are less than 25%. Or can it be that we have an optimal income level for students' level in financial literacy?

7.6 FAMILY CHARACTERISTICS

Some family characteristics were also important predictors of financial literacy. Based on the Levene test, there was no significant difference in the financial literacy of respondents whose fathers' educational levels were up to JHS and SHS/equivalent so the two were merged into Fathersch1 in the multivariate analysis. Mothersch1 is defined as up to JHS because the Levene test proved significant differences between the knowledge of respondents whose mothers' educational level were up to JHS and those with educational SHS/equivalent. For the composite financial literacy measure, students whose fathers' educational background is up to the level of senior high school/equivalent are more likely to be financially knowledgeable than students whose fathers have tertiary education. This is significant at 0.05 level. Although, the coefficient of Fathersch2 exhibits a positive sign, it is not statistically significant. Ironically, students with mothers with lower levels of education (JHS and below) are financially knowledgeable than those with mothers who have higher levels of education. They were more likely to be knowledgeable in general finance (at 0.01 level), savings and borrowing (at 0.01 level), and insurance (at 0.1 level). Overall, students whose mothers' educational attainments are up to JHS have an increasing propensity of being financially knowledgeable by 9.4% (significant at the 0.01 level).

Students whose mothers have educational level up to senior high school (SHS)/training college/polytechnic are more likely to be knowledgeable in general finance (significant at the 0.10 level) and savings and borrowing (significant at the 0.05 level). Overall, students who have mothers with SHS/training college/polytechnic levels of education have an increasing propensity of being financially knowledgeable by 5.9 (significant at the 0.01 level). This implies that the lower the mother's level of education the higher the likelihood of the respondent being financially literate. Comparatively, it seems like mother's educational background has greater influence on their wards' financial literacy than that of fathers. Mothers' educational level influences the financial knowledge of their wards in all the dimensions and composite measure of financial literacy except knowledge in investment. Most of the differences are significant at 0.01 level. However, only Fathersch1 of fathers' level of education affect only the composite financial literacy measure. This might explain why authors like Lusardi, Mitchell and Curto (2010) and Ansong and Gyensare (2012) use only mothers' education attainment in their regression models.

Ironically, the relationship between mother's education and student's financial literacy is negative. This is inconsistent with the findings of Lusardi, Mitchell and Curto (2010) and Ansong and Gyensare (2012) who find a positive relationship between mothers' educational level and young people/students' financial literacy. If the evidence that financial literacy is positively related to education holds, then all things being equal, parents with high level of education would be financially literate than those with low level of education. So it is expected that the wards of highly educated parents will have the opportunity to learn basic finance from them. It

appears that these wards are not acquiring such knowledge from their parents. Probably educated parents are not making a conscious effort to teach their wards issues in finance in the house and are also not displaying the kind of financial behaviours that their wards can mimic and learn from them. This probably explains why the respondents ranked parents as the last avenue to learn finance. Possibly wards of children who are highly educated are complacent and take learning of finance for granted since their parents are around to make all the financial decisions for them. Thus they only ride on the good image of their parents. It can also be argued that wards whose parents have low level of education, probably, have seen the plight of their parents and how disadvantaged they are so they are motivated to learn to make up for the deficiency. Also, parents who have low education are less likely to be wealthy so their wards might have to work and find ways of saving and managing their finances so as to get enough for their education and also for their families. Also from educated homes, even an average student will be sent to the university. However, for the wards of parents who are less educated to be sent to the university mean they are very intelligent. This might have reflected on their financial literacy. One possible reason is that parents who are less educated might rely on their intelligent wards to assist them run their businesses and helps them keep some form of records.

From Table 9a and 9b it can be observed that fathers' occupation has a greater influence on their wards insurance knowledge and the composite score of financial literacy. Students whose fathers are unemployed (Fatherocc) are less likely to be knowledgeable in insurance (significant at the 0.05 level). The impact of father's occupation on the other financial literacy dimensions, albeit negative, was not

statistically significant but based on the overall financial literacy scores, having an unemployed father reduces the likelihood of being financially literate by 8.3% (significant at the 0.01 level). Students whose fathers are self-employed are more likely to have less knowledge in general finance (significant at the 0.1 level), savings and borrowing (significant at the 0.05 level), investment (significant at the 0.1 level) and insurance (significant at the 0.01 level) than those whose fathers are employees of organisations. Overall, those whose fathers are employees are more likely to be financially literate than the wards of self-employed fathers (significant at the 0.01 level). The employment status of fathers is a strong predictor of financial literacy. Fathers who are employees are more likely to have savings or current account since most organization pay the salaries of their workers to their bank accounts. Their financial involvement with the bank might also trigger the involvement of their wards with the banking system. Some of them might have visited the bank with their wards or sent them on errands to the bank to deposit or withdraw monies for them. This exposes their wards to some financial issues and products.

Regarding the employment status of mothers, students whose mothers are unemployed (Mothoccu) are more likely to be less knowledgeable in general issues in finance (significant at the 0.01 level) and investment (significant at the 0.01 level). The differences in their knowledge in savings and borrowing and insurance are not significant. The differences in the likelihood based on the composite scores are not statistically significant. Respondents whose mothers are self-employed (Motheroccu1) are more likely to have less knowledge in general finance and investment (significant at 0.10 and 0.05 level). The differences in their knowledge in savings and borrowing and insurance were not significant. Overall, there was an

insignificant difference in the financial knowledge of self employed mothers and employee mothers. This suggests that mothers' occupation has no significant influence on the financial literacy of their wards.

The results from Table 9a and 9b indicate that discussion of financial issues in the house have no significant influence on students' financial knowledge. This is quite similar to the Levene test for equality in means in appendix 8. There were no significant differences in the knowledge level of students whose family rarely, often, very often and always discuss finances in the house. The only significant difference in knowledge was between those whose families never and rarely discuss finances in the house. Perhaps, the kind of financial discussions that goes on in the house is biased towards domestic household finance.

The results from Table 9a and 9b show that driving experience has no significant influence on financial literacy not even on insurance literacy. Although, students with no driving experience are more likely to be less knowledgeable in insurance for model II, the differences were statistically not significant after accounting for rich set of variables in model III and IV. Thus driving experience is not a predictor of financial literacy.

7.7 RESIDENTIAL CHARACTERISTICS AND SOURCES OF FUNDING

The coefficients of capital town for all the dimensions and the entire survey are negative and significant at the 0.01 level. Consistent with the ANOVA, the results suggest that students who don't live in the capital town of the regions they have lived most of their life are more likely to be less knowledgeable in general finance matters,

savings and borrowing, investment and insurance. Overall, living mostly in the capital town increases the probability of being more financially knowledgeable by 9.3%. Thus living in the capital town has a positive influence on financial literacy. This is consistent with the findings of Cole, Sampson and Zia (2009) who find that people who live in rural areas demonstrate the lowest level of financial knowledge. Ansong and Gyensare (2012) mention that access to the media and other viable sources of financial information can influence one's level of financial literacy. Living in the capital town offers students more opportunities to be financially literate since they have access to wide range of financial information. Banks, insurance companies and other financial institutions are mostly situated in the capital town. This opens up opportunity to students to be familiarised with some of the issues raised in the questionnaire.

From Table 9a and 9b it can be observed that students' housing arrangement on campus and how they finance their education have no influence on their financial knowledge. This means there are no differences in the level of financial literacy among students who live in campus halls, rented accommodation (hostels), those who live in their own house and those who live with their parents. This is inconsistent with the results of the ANOVA test. The finding that there is no association between how students finance their education and financial literacy is in conformity to the findings of Ansong and Gyensare (2012). They documented that university students level of financial literacy did not vary based on their source of funding. This implies that source of funding for education is not a predictor of financial literacy.

7.8 FINANCIAL MARKET INVOLVEMENT

The negative coefficients for Personalac for all the four dimensions of financial literacy indicate that respondents with no personal accounts (savings/current accounts) are more likely to be less knowledgeable in general finance issues, savings and borrowing, investment and insurance than respondents with at least one personal account. The composite score depicts that being a non-personal account holder decreases the probability of being more financially knowledgeable by 7.1%. The differences for all the dimensions and the entire survey are statistically significant. This results show that financial market involvement in respect to having a personal account is a strong predictor of financial literacy. Students with personal accounts are more likely to be financially knowledgeable in that, as they go through the process of securing the accounts, they will have some briefing on at least the operations and benefits of the type of personal accounts they are going in for. Also, as they operate the accounts naturally they will pick up some information on finance.

Although, there is no association between students' knowledge in general finance and having an investment account, students with investment account are more likely to be knowledgeable in savings and borrowing, investment and insurance than those without investment account. Overall, being a non-investment account holder decreases the likelihood of being more financially literate by 5.4%. This is significant at 0.01 level. The differences in knowledge for all the dimensions excluding general knowledge were also statistically significant. This implies that financial market involvement regarding having an investment account is a strong predictor of financial literacy. Having an investment account enables one to learn more especially about investment and also promote interest in financial matter. For

instance, a person with a mutual fund account or shares will be interested in news regarding these investments.

In summary, it was observed that mothers' education, fathers' occupation, living in the capital town, having a personal account and having an investment account are strong predictors of financial literacy. Thus, the hypothesis that there is a significant difference in the level of financial literacy of students based on their exposure to financial matters is accepted.



Table 9a: Results of Logit Regression Models - General Knowledge, Savings and Borrowing and Investment

Models	GENERAL KNOWLEDGE				SAVINGS AND BORROWING KNOWLEDGE				INVESTMENT KNOWLEDGE			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Rank1	-0.244*** (0.027)	-0.246*** (0.027)	-0.239*** (0.027)	-0.237*** (0.027)	-0.177*** (0.028)	-0.181*** (0.028)	-0.172*** (0.028)	-0.166*** (0.028)	-0.190*** (0.024)	-0.180*** (0.024)	-0.174*** (0.024)	-0.168*** (0.024)
Rank2	-0.167*** (0.023)	-0.171*** (0.023)	-0.166*** (0.023)	-0.164*** (0.023)	-0.141*** (0.024)	-0.146*** (0.025)	-0.144*** (0.025)	-0.139*** (0.025)	-0.166*** (0.020)	-0.161*** (0.020)	-0.156*** (0.020)	-0.151*** (0.020)
Shsstudy 1	-0.069*** (0.021)	-0.067*** (0.021)	-0.066*** (0.021)	-0.068*** (0.021)	-0.115*** (0.021)	-0.111*** (0.021)	-0.110*** (0.021)	-0.113*** (0.021)	-0.065*** (0.019)	-0.064*** (0.018)	-0.062*** (0.018)	-0.064*** (0.018)
Shsstudy 2	-0.095*** (0.022)	-0.091*** (0.022)	-0.090*** (0.022)	-0.091*** (0.022)	-0.145*** (0.021)	-0.138*** (0.021)	-0.137*** (0.021)	-0.139*** (0.021)	-0.074*** (0.020)	-0.075*** (0.020)	-0.072*** (0.020)	-0.073*** (0.020)
Accounti ng	-0.071*** (0.024)	-0.068*** (0.024)	-0.067*** (0.024)	-0.068*** (0.024)	-0.072*** (0.025)	-0.062*** (0.025)	-0.060*** (0.025)	-0.062*** (0.025)	-0.061*** (0.020)	-0.064*** (0.020)	-0.064*** (0.020)	-0.063*** (0.020)
Unistudy	-0.063*** (0.024)	-0.066*** (0.024)	-0.067*** (0.024)	-0.065*** (0.024)	-0.106*** (0.024)	-0.111*** (0.024)	-0.113*** (0.024)	-0.109*** (0.024)	-0.136*** (0.021)	-0.136*** (0.021)	-0.136*** (0.021)	-0.134*** (0.021)
Male	0.044*** (0.016)	0.041*** (0.016)	0.045*** (0.016)	0.046*** (0.016)	0.090*** (0.016)	0.087*** (0.016)	0.088*** (0.016)	0.090*** (0.016)	0.020 (0.014)	0.024* (0.015)	0.027* (0.015)	0.030** (0.015)
Experien ce1	-0.067*** (0.024)	-0.062*** (0.024)	-0.062*** (0.024)	-0.058** (0.024)	-0.111*** (0.024)	-0.105*** (0.024)	-0.103*** (0.024)	-0.093*** (0.024)	-0.080*** (0.021)	-0.080*** (0.021)	-0.073*** (0.022)	-0.063*** (0.022)
Experien ce2	-0.018 (0.022)	-0.016 (0.022)	-0.018 (0.022)	-0.015 (0.022)	-0.038* (0.022)	-0.036 (0.022)	-0.035 (0.023)	-0.027 (0.023)	-0.015 (0.019)	-0.017 (0.019)	-0.013 (0.019)	-0.005 (0.019)
Age1	0.065* (0.036)	0.075** (0.037)	0.071* (0.038)	0.081** (0.038)	-0.006 (0.037)	0.016 (0.037)	0.022 (0.038)	0.044 (0.038)	-0.023 (0.033)	-0.040 (0.034)	-0.035 (0.035)	-0.022 (0.035)
Age2	0.013 (0.030)	0.017 (0.030)	0.014 (0.031)	0.020 (0.031)	-0.028 (0.030)	-0.013 (0.030)	-0.010 (0.032)	0.006 (0.032)	0.018 (0.026)	0.006 (0.026)	0.013 (0.027)	0.024 (0.027)
Age3	-0.039 (0.029)	-0.038 (0.029)	-0.037 (0.029)	-0.031 (0.029)	-0.040 (0.029)	-0.033 (0.029)	-0.031 (0.030)	-0.017 (0.030)	-0.027 (0.025)	-0.034 (0.025)	-0.030 (0.025)	-0.020 (0.025)
Income1	-0.088*** (0.021)	-0.098*** (0.021)	-0.099*** (0.021)	-0.096*** (0.021)	-0.031 (0.021)	-0.047** (0.022)	-0.046** (0.022)	-0.039* (0.022)	-0.065*** (0.019)	-0.060*** (0.019)	-0.056*** (0.019)	-0.050*** (0.019)
Income2	-0.040** (0.019)	-0.046** (0.020)	-0.046** (0.020)	-0.045** (0.020)	0.008 (0.020)	-0.003 (0.020)	-0.003 (0.020)	0.001 (0.020)	-0.015 (0.017)	-0.011 (0.017)	-0.009 (0.017)	-0.004 (0.017)

Table 9a continued

MODELS	GENERAL KNOWLEDGE				SAVINGS AND BORROWING KNOWLEDGE				INVESTMENT KNOWLEDGE			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Fathersch1		0.011 (0.022)	0.012 (0.022)	0.012 (0.022)		0.016 (0.022)	0.017 (0.022)	0.015 (0.022)		-0.009 (0.020)	-0.009 (0.020)	-0.012 (0.020)
Fathersch2		0.012 (0.022)	0.012 (0.022)	0.011 (0.022)		0.035 (0.022)	0.034 (0.022)	0.031 (0.022)		0.006 (0.019)	0.006 (0.019)	0.003 (0.019)
Mothsch1		0.088*** (0.028)	0.085*** (0.028)	0.085*** (0.028)		0.117*** (0.028)	0.110*** (0.028)	0.111*** (0.028)		0.008 (0.025)	0.002 (0.025)	0.006 (0.025)
Mothsch2		0.044* (0.024)	0.040* (0.024)	0.040* (0.024)		0.058** (0.024)	0.050** (0.024)	0.051** (0.024)		-0.001 (0.021)	-0.009 (0.021)	-0.007 (0.021)
Fathocc		0.039 (0.030)	0.043 (0.031)	0.042 (0.031)		-0.051 (0.031)	-0.049 (0.031)	-0.050 (0.031)		-0.008 (0.028)	-0.003 (0.028)	-0.008 (0.029)
Fathocc1		-0.036** (0.018)	-0.034* (0.018)	-0.033* (0.018)		-0.041** (0.017)	-0.039** (0.017)	-0.038** (0.017)		-0.032** (0.016)	-0.029* (0.016)	-0.030* (0.016)
Mothocc		-0.087*** (0.028)	-0.087*** (0.028)	-0.081*** (0.028)		-0.003 (0.028)	-0.003 (0.028)	0.009 (0.028)		-0.083*** (0.026)	-0.085*** (0.026)	-0.075*** (0.026)
Mothocc1		-0.037* (0.020)	-0.039* (0.020)	-0.039* (0.020)		-0.012 (0.020)	-0.014 (0.020)	-0.015 (0.020)		-0.035** (0.018)	-0.036** (0.018)	-0.036** (0.018)
Discusfinan2		-0.025 (0.026)	-0.025 (0.026)	-0.023 (0.026)		-0.031 (0.027)	-0.032 (0.027)	-0.027 (0.027)		-0.008 (0.024)	-0.010 (0.024)	-0.008 (0.024)
Drive		0.004 (0.018)	0.007 (0.018)	0.009 (0.018)		0.001 (0.018)	0.004 (0.018)	0.007 (0.018)		0.006 (0.016)	0.009 (0.016)	0.013 (0.016)
Capitaltown			-0.045*** (0.016)	-0.044*** (0.016)			-0.050*** (0.015)	-0.047*** (0.015)			-0.062*** (0.014)	-0.062*** (0.014)
House1			0.003 (0.028)	-0.003 (0.028)			0.035 (0.028)	0.022 (0.028)			0.029 (0.025)	0.024 (0.025)
House2			0.009 (0.027)	0.002 (0.027)			0.070*** (0.026)	0.056** (0.027)			0.027 (0.023)	0.022 (0.024)
House3			-0.004 (0.040)	-0.009 (0.040)			0.022 (0.039)	0.012 (0.039)			0.078** (0.034)	0.074** (0.034)
Educfinan1			0.006 (0.023)	0.005 (0.023)			-0.031 (0.023)	-0.033 (0.023)			-0.037* (0.020)	-0.037* (0.020)
Educfinan2			-0.001 (0.026)	-0.005 (0.026)			-0.035 (0.026)	-0.042 (0.026)			-0.037 (0.023)	-0.042* (0.023)
Educfinan3			0.072 (0.045)	0.070 (0.045)			0.012 (0.045)	0.006 (0.045)			-0.017 (0.038)	-0.023 (0.038)

Table 9a continued

MODELS	GENERAL KNOWLEDGE				SAVINGS AND BORROWING KNOWLEDGE				INVESTMENT KNOWLEDGE			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Personalac				-0.046** (0.022)				-0.093*** (0.021)				-0.042** (0.020)
Investaccount				-0.032 (0.023)				-0.085*** (0.023)				-0.092*** (0.019)
Constant	1.130*** (0.159)	1.078*** (0.185)	1.098*** (0.205)	1.222*** (0.217)	1.654*** (0.1686)	1.399*** (0.191)	1.368*** (0.209)	1.685*** (0.220)	0.968*** (0.168)	1.239*** (0.198)	1.315*** (0.221)	1.678*** (0.233)
-2 log likelihood	-2494.32	-2479.73	-2474.06	-2471.19	-2508.79	-2488.85	-2478.04	-2463.96	-2090.41	-2079.02	-2063.94	-2051.63
Chi-squared	269.63	296.08	303.92	307.75	374.28	408.82	427.16	446.76	372.86	380.80	409.20	425.40
Pseudo R2	0.0551	0.0606	0.0627	0.0638	0.0787	0.0860	0.0900	0.0951	0.0947	0.0997	0.1062	0.1115
Chance classification	57.87%	59.42%	59.37%	59.79%	64.75%	64.96%	64.57%	64.82%	62.80%	62.36%	61.83%	61.25%
Correct classification	64.13%	64.87%	64.87%	65.12%	63.78%	64.13%	64.18%	64.16%	74.76%	74.76%	74.82%	74.87%

P < 0.1, **P < 0.05 and *P < 0.01, Robust Standard Errors in Parenthesis, coefficients represents marginal effects from Stata 13 output*

Source: Field Survey, 2014

Table 9b: Results of Logit Regression Models - Insurance Knowledge and Entire Survey

MODELS	INSURANCE KNOWLEDGE				FINANCIAL LITERACY			
	I	II	III	IV	I	II	III	IV
Rank1	-0.219*** (0.025)	-0.211*** (0.025)	-0.204*** (0.025)	-0.200*** (0.025)	-0.316*** (0.026)	-0.312*** (0.027)	-0.299*** (0.027)	-0.295*** (0.027)
Rank2	-0.162*** (0.022)	-0.156*** (0.022)	-0.149*** (0.022)	-0.146*** (0.022)	-0.241*** (0.023)	-0.239*** (0.024)	-0.231*** (0.024)	-0.228*** (0.024)
Shsstudy1	-0.117*** (0.020)	-0.115*** (0.020)	-0.112*** (0.020)	-0.114*** (0.020)	-0.133*** (0.020)	-0.129*** (0.020)	-0.127*** (0.020)	-0.130*** (0.020)
Shsstudy2	-0.138*** (0.021)	-0.136*** (0.021)	-0.135*** (0.021)	-0.136*** (0.021)	-0.176*** (0.020)	-0.170*** (0.020)	-0.169*** (0.020)	-0.171*** (0.020)
Accounting	-0.042* (0.023)	-0.036 (0.023)	-0.038* (0.023)	-0.038* (0.023)	-0.061*** (0.024)	-0.050** (0.024)	-0.049** (0.023)	-0.051** (0.023)
Unistudy	-0.080*** (0.023)	-0.080*** (0.023)	-0.080*** (0.023)	-0.078*** (0.023)	-0.136*** (0.023)	-0.142*** (0.023)	-0.142*** (0.023)	-0.139*** (0.023)
Male	0.061*** (0.015)	0.058*** (0.015)	0.060*** (0.015)	0.062*** (0.015)	0.074*** (0.015)	0.071*** (0.015)	0.076*** (0.015)	0.078*** (0.015)
Experience1	-0.124*** (0.023)	-0.120*** (0.023)	-0.109*** (0.023)	-0.103*** (0.023)	-0.116*** (0.023)	-0.110*** (0.023)	-0.108*** (0.023)	-0.101*** (0.023)
Experience2	-0.053*** (0.020)	-0.053*** (0.021)	-0.046*** (0.021)	-0.041*** (0.021)	-0.007 (0.021)	-0.006 (0.021)	-0.006 (0.022)	-0.001 (0.022)
Age1	0.020 (0.035)	0.027 (0.035)	0.041 (0.036)	0.051 (0.037)	0.000 (0.035)	0.013 (0.036)	0.018 (0.036)	0.035 (0.036)
Age2	-0.026 (0.028)	-0.023 (0.028)	-0.014 (0.030)	-0.006 (0.030)	-0.057** (0.029)	-0.049* (0.029)	-0.048 (0.030)	-0.036 (0.030)
Age3	-0.006 (0.027)	-0.005 (0.027)	-0.003 (0.027)	0.005 (0.027)	-0.067** (0.029)	-0.066** (0.028)	-0.062** (0.029)	-0.052* (0.029)
Income1	-0.096*** (0.020)	-0.098*** (0.020)	-0.097*** (0.020)	-0.093*** (0.020)	-0.068*** (0.020)	-0.079*** (0.021)	-0.081*** (0.021)	-0.076*** (0.021)
Income2	-0.030* (0.018)	-0.032* (0.018)	-0.030* (0.018)	-0.027 (0.018)	-0.024 (0.019)	-0.032* (0.019)	-0.031* (0.019)	-0.029 (0.019)

Table 9b continued

MODELS	INSURANCE KNOWLEDGE				FINANCIAL LITERACY			
	I	II	III	IV	I	II	III	IV
Fathersch1		0.035* (0.021)	0.035 (0.021)	0.033 (0.021)		0.042** (0.022)	0.045** (0.022)	0.044** (0.022)
Fathersch2		0.035* (0.021)	0.033 (0.021)	0.031 (0.021)		0.029 (0.021)	0.027 (0.021)	0.025 (0.021)
Mothsch1		0.051* (0.027)	0.046 (0.027)	0.049* (0.027)		0.100*** (0.027)	0.094*** (0.027)	0.094*** (0.027)
Mothsch2		0.034 (0.023)	0.028 (0.023)	0.029 (0.023)		0.069*** (0.023)	0.059* (0.023)	0.059*** (0.023)
Fathocc		-0.065** (0.030)	-0.062 (0.030)	-0.064** (0.030)		-0.090*** (0.030)	-0.082*** (0.030)	-0.083*** (0.029)
Fathocc1		-0.064*** (0.017)	-0.060 (0.017)	-0.060*** (0.017)		-0.083*** (0.017)	-0.077*** (0.017)	-0.077*** (0.017)
Mothocc		-0.033 (0.028)	-0.031* (0.028)	-0.025 (0.028)		-0.017 (0.028)	-0.018 (0.027)	-0.009 (0.027)
Mothocc1		0.010 (0.019)	0.010 (0.019)	0.010 (0.019)		-0.006 (0.020)	-0.008 (0.020)	-0.009 (0.020)
Discusfinan2		0.000 (0.025)	0.000 (0.025)	0.002 (0.025)		-0.034 (0.025)	-0.033 (0.025)	-0.030 (0.025)
Drive		-0.028* (0.017)	-0.019 (0.017)	-0.016 (0.017)		-0.017 (0.017)	-0.008 (0.017)	-0.006 (0.017)
Capitaltown			-0.057*** (0.015)	-0.056*** (0.015)			-0.094*** (0.015)	-0.093*** (0.015)
House1			-0.021 (0.026)	-0.025 (0.026)			-0.018 (0.027)	-0.028 (0.027)
House2			-0.007 (0.025)	-0.012 (0.025)			0.011 (0.026)	0.000 (0.026)
House3			-0.010 (0.037)	-0.013 (0.037)			-0.040 (0.038)	-0.048 (0.039)
Educfinan1			-0.034 (0.021)	-0.034 (0.022)			-0.010 (0.022)	-0.012 (0.022)
Educfinan2			0.014 (0.024)	0.011 (0.024)			-0.001 (0.025)	-0.006 (0.025)
Educfinan3			-0.016 (0.039)	-0.020 (0.039)			0.024 (0.042)	0.020 (0.042)

Table 9b continued

MODELS	INSURANCE KNOWLEDGE				FINANCIAL LITERACY			
	I	II	III	IV	I	II	III	IV
Personalac				-0.035* (0.021)				-0.071*** (0.021)
Investaccount				-0.060*** (0.021)				-0.054** (0.022)
Constant	1.271*** (0.166)	1.198*** (0.194)	1.352*** (0.215)	1.565*** (0.228)	2.576*** (0.180)	2.437 (0.204)	2.611*** (0.227)	2.851*** (0.239)
-2 log likelihood	-2318.83	-2302.92	-2291.89	-2287.16	-2369.85	-2341.51	-2319.81	-2312.01
Chi-squared	416.15	435.83	451.45	456.72	562.72	593.30	613.20	620.97
Pseudo R2	0.0907	0.0969	0.1013	0.1031	0.1302	0.1406	0.1485	0.1514
Chance classification	58.26%	59.67%	59.72%	60.30%	68.55%	69.18%	68.82%	69.47%
Correct classification	68.07%	68.71%	68.74%	68.99%	67.92%	68.56%	68.51%	69.14%

* $P < 0.1$, ** $P < 0.05$ and *** $P < 0.01$, Robust Standard Errors in Parenthesis, coefficients represents marginal effects from Stata 13 output

Source: Field Survey, 2014

7.9 ROBUSTNESS CHECK

To investigate the robustness of my findings, the financial literacy scores were used in a regression model instead of the dichotomous grouping (1 for respondents who are financially literate and 0 for those who are financially illiterate) that was used in the main analysis. A potential concern for the use of the financial literacy scores as a dependent variable in a regression analysis is the bounded nature of the scores. Since the scores are bounded between 0 (0%) and 1 (100%), a logit transformation is used to transform the financial literacy scores from the unit interval onto the whole real line. Hence the logit form of the scores is calculated as:

$$\text{Logit FL} = \ln [\text{FL}/(1-\text{FL})]$$

A usual limitation of this transformation is that FL scores exactly equal to either zero or one would be indeterminable and these values would be treated as missing data. This will pose a major limitation to running and analysing the data if a lot of the observations are dropped as missing data. However, respondents who scored 0% and 100% in this study were negligible so this issue did not pose a limitation in using the logit transformation. The results are presented in table 9c and 9d.

It can be observed that results from the logit transformation regression are very much similar to the dichotomous logit results in Tables 9a and 9b. The coefficients and the significance levels are almost the same, indicating that the results of this study are very robust and that the findings are likely to be the same regardless of how the data is appropriately modelled. Thus, the determinants of financial literacy are confirmed and remain unaffected when a different approach was used.

Table 9c Results of Logit Transformation Regression Models - General, Savings and Borrowing and Investment

	GENERAL KNOWLEDGE				SAVINGS AND BORROWING KNOWLEDGE				INVESTMENT KNOWLEDGE			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
rank1	-0.491*** (0.0658)	-0.496*** (0.0665)	-0.488*** (0.0666)	-0.479*** (0.0667)	-0.469*** (0.0588)	-0.486*** (0.0590)	-0.472*** (0.0590)	-0.460*** (0.0588)	-0.485*** (0.0579)	-0.473*** (0.0584)	-0.464*** (0.0587)	-0.454*** (0.0586)
rank2	-0.366*** (0.0574)	-0.371*** (0.0583)	-0.360*** (0.0585)	-0.351*** (0.0586)	-0.325*** (0.0470)	-0.344*** (0.0474)	-0.340*** (0.0476)	-0.331*** (0.0474)	-0.402*** (0.0505)	-0.396*** (0.0510)	-0.382*** (0.0510)	-0.374*** (0.0510)
shsstudy1	-0.149** (0.0508)	-0.141** (0.0510)	-0.141** (0.0510)	-0.145** (0.0509)	-0.226*** (0.0465)	-0.214*** (0.0465)	-0.207*** (0.0463)	-0.213*** (0.0461)	-0.204*** (0.0449)	-0.205*** (0.0448)	-0.202*** (0.0448)	-0.207*** (0.0445)
shsstudy2	-0.145** (0.0505)	-0.132** (0.0507)	-0.133** (0.0507)	-0.136** (0.0506)	-0.336*** (0.0485)	-0.317*** (0.0484)	-0.310*** (0.0483)	-0.314*** (0.0480)	-0.213*** (0.0454)	-0.218*** (0.0458)	-0.209*** (0.0459)	-0.213*** (0.0458)
Accounting	-0.172** (0.0551)	-0.161** (0.0553)	-0.164** (0.0551)	-0.164** (0.0551)	-0.158** (0.0525)	-0.132** (0.0525)	-0.129* (0.0523)	-0.131* (0.0521)	-0.108* (0.0507)	-0.113* (0.0507)	-0.110* (0.0507)	-0.107* (0.0505)
Unistudy	-0.0884 (0.0544)	-0.0983 (0.0544)	-0.0954 (0.0544)	-0.0927 (0.0544)	-0.253*** (0.0524)	-0.269*** (0.0525)	-0.277*** (0.0523)	-0.269*** (0.0521)	-0.297*** (0.0499)	-0.295*** (0.0501)	-0.301*** (0.0503)	-0.298*** (0.0501)
Male	0.0772* (0.0359)	0.0713 (0.0365)	0.0804* (0.0366)	0.0846* (0.0366)	0.171*** (0.0340)	0.161*** (0.0345)	0.163*** (0.0346)	0.168*** (0.0344)	0.117*** (0.0331)	0.128*** (0.0334)	0.136*** (0.0335)	0.143*** (0.0335)
experience 1	-0.156** (0.0543)	-0.142** (0.0542)	-0.147** (0.0554)	-0.132* (0.0558)	-0.230*** (0.0528)	-0.210*** (0.0525)	-0.205*** (0.0532)	-0.186*** (0.0532)	-0.173*** (0.0506)	-0.179*** (0.0505)	-0.167** (0.0516)	-0.145** (0.0518)
experience 2	-0.0430 (0.0511)	-0.0366 (0.0510)	-0.0425 (0.0519)	-0.0294 (0.0522)	-0.0785 (0.0477)	-0.0698 (0.0473)	-0.0681 (0.0480)	-0.0509 (0.0480)	-0.0285 (0.0479)	-0.0370 (0.0478)	-0.0351 (0.0486)	-0.0176 (0.0489)
age1	0.184* (0.0820)	0.214** (0.0831)	0.211* (0.0849)	0.231** (0.0851)	-0.00218 (0.0822)	0.0543 (0.0821)	0.0517 (0.0833)	0.0921 (0.0829)	0.0368 (0.0747)	0.00742 (0.0761)	-0.00962 (0.0782)	0.0172 (0.0782)
age2	0.103 (0.0683)	0.121 (0.0690)	0.119 (0.0707)	0.135 (0.0707)	-0.108 (0.0649)	-0.0692 (0.0645)	-0.0676 (0.0654)	-0.0408 (0.0656)	0.0639 (0.0621)	0.0403 (0.0630)	0.0306 (0.0649)	0.0525 (0.0648)
age3	-0.0232 (0.0661)	-0.0161 (0.0662)	-0.00906 (0.0664)	0.00883 (0.0664)	-0.146* (0.0604)	-0.124* (0.0598)	-0.121* (0.0595)	-0.0941 (0.0595)	-0.0216 (0.0569)	-0.0358 (0.0570)	-0.0399 (0.0578)	-0.0183 (0.0575)
income1	-0.147** (0.0484)	-0.176*** (0.0493)	-0.181*** (0.0494)	-0.170*** (0.0497)	-0.0729 (0.0466)	-0.117* (0.0471)	-0.116* (0.0470)	-0.101* (0.0469)	-0.195*** (0.0452)	-0.182*** (0.0459)	-0.181*** (0.0460)	-0.167*** (0.0459)
income2	-0.0971* (0.0449)	-0.118** (0.0450)	-0.117** (0.0451)	-0.109* (0.0451)	0.00492 (0.0427)	-0.0220 (0.0428)	-0.0192 (0.0427)	-0.0101 (0.0425)	-0.0783 (0.0416)	-0.0714 (0.0418)	-0.0687 (0.0417)	-0.0575 (0.0415)

Table 9c continued

	GENERAL KNOWLEDGE				SAVINGS AND BORROWING KNOWLEDGE				INVESTMENT KNOWLEDGE			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
fathersch1		0.0294 (0.0513)	0.0342 (0.0516)	0.0293 (0.0515)		0.0597 (0.0480)	0.0594 (0.0481)	0.0564 (0.0480)		-0.00436 (0.0448)	-0.00617 (0.0448)	-0.0126 (0.0448)
fathersch2		0.0526 (0.0510)	0.0529 (0.0510)	0.0484 (0.0509)		0.0361 (0.0481)	0.0331 (0.0478)	0.0299 (0.0476)		0.0312 (0.0454)	0.0305 (0.0454)	0.0254 (0.0453)
mothsch1		0.221*** (0.0646)	0.220*** (0.0648)	0.227*** (0.0648)		0.297*** (0.0625)	0.284*** (0.0624)	0.287*** (0.0624)		-0.0455 (0.0587)	-0.0514 (0.0591)	-0.0385 (0.0590)
mothsch2		0.126* (0.0548)	0.125* (0.0548)	0.128* (0.0549)		0.143** (0.0533)	0.124* (0.0533)	0.128* (0.0532)		-0.0458 (0.0502)	-0.0565 (0.0505)	-0.0495 (0.0502)
Fathocc		0.00395 (0.0737)	0.0119 (0.0741)	0.0107 (0.0742)		-0.113 (0.0676)	-0.110 (0.0680)	-0.112 (0.0683)		-0.0348 (0.0608)	-0.0230 (0.0611)	-0.0284 (0.0609)
fathocc1		-0.0418 (0.0398)	-0.0374 (0.0400)	-0.0393 (0.0399)		-0.0985** (0.0365)	-0.0933* (0.0364)	-0.0920* (0.0363)		-0.114** (0.0354)	-0.109** (0.0355)	-0.109** (0.0354)
Mothocc		-0.143* (0.0651)	-0.142* (0.0651)	-0.133* (0.0654)		-0.0554 (0.0620)	-0.0585 (0.0621)	-0.0354 (0.0621)		-0.111 (0.0574)	-0.114* (0.0573)	-0.0976 (0.0574)
mothocc1		-0.108* (0.0464)	-0.109* (0.0463)	-0.108* (0.0464)		-0.0335 (0.0429)	-0.0379 (0.0428)	-0.0399 (0.0428)		-0.0199 (0.0429)	-0.0237 (0.0429)	-0.0239 (0.0427)
discusfinan2		-0.0438 (0.0620)	-0.0422 (0.0620)	-0.0375 (0.0621)		-0.0983 (0.0579)	-0.103 (0.0578)	-0.0940 (0.0577)		0.0371 (0.0504)	0.0326 (0.0507)	0.0382 (0.0511)
Drive		0.00259 (0.0410)	0.0117 (0.0417)	0.0170 (0.0418)		0.0188 (0.0385)	0.0244 (0.0385)	0.0334 (0.0385)		0.0245 (0.0367)	0.0305 (0.0368)	0.0406 (0.0368)
Capitaltown			-0.0668 (0.0355)	-0.0662 (0.0355)			-0.132*** (0.0331)	-0.130*** (0.0330)			-0.113*** (0.0319)	-0.114*** (0.0319)
house1			-0.0573 (0.0641)	-0.0610 (0.0643)			0.114 (0.0589)	0.0945 (0.0591)			0.0653 (0.0573)	0.0580 (0.0573)
house2			-0.0776 (0.0602)	-0.0841 (0.0603)			0.131* (0.0557)	0.108 (0.0561)			0.0338 (0.0546)	0.0257 (0.0548)
house3			-0.0880 (0.0925)	-0.0897 (0.0928)			0.0107 (0.0845)	-0.00687 (0.0846)			0.175* (0.0849)	0.169* (0.0848)
educfinan1			0.0463 (0.0544)	0.0464 (0.0543)			-0.0645 (0.0503)	-0.0660 (0.0502)			-0.00844 (0.0474)	-0.00704 (0.0473)
educfinan2			0.0255 (0.0599)	0.0168 (0.0599)			-0.0481 (0.0539)	-0.0610 (0.0539)			0.0101 (0.0524)	-0.000134 (0.0522)
educfinan3			0.174 (0.114)	0.165 (0.115)			-0.0946 (0.0944)	-0.106 (0.0944)			0.0793 (0.0891)	0.0628 (0.0891)

Table 9c continued

	GENERAL KNOWLEDGE				SAVINGS AND BORROWING KNOWLEDGE				INVESTMENT KNOWLEDGE			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Personalac				-0.0583 (0.0503)				-0.175*** (0.0464)				-0.0767 (0.0442)
Investacc				-0.150** (0.0523)				-0.177*** (0.0476)				-0.218*** (0.0501)
Intercept	0.668*** (0.0819)	0.602*** (0.0954)	0.638*** (0.106)	0.736*** (0.110)	1.368*** (0.0761)	1.217*** (0.0879)	1.215*** (0.0983)	1.347*** (0.101)	0.617*** (0.0704)	0.723*** (0.0836)	0.712*** (0.0924)	0.852*** (0.0959)
F statistics	13.76	9.44	7.76	7.74	36.08	23.92	19.37	19.98	32.63	20.26	16.67	16.75
r-squared	0.0538	0.0604	0.0627	0.0652	0.1233	0.1378	0.1437	0.1496	0.1151	0.1209	0.1262	0.1319

P < 0.1, **P < 0.05 and *P < 0.01, Robust Standard Errors in Parenthesis*

Source: Field Survey, 2014



Table 9d: Results of Logit Transformation Regression Models - Insurance and Financial Literacy

	INSURANCE KNOWLEDGE				FINANCIAL LITERACY			
	I	II	III	IV	I	II	III	IV
rank1	-0.555*** (0.0587)	-0.537*** (0.0590)	-0.525*** (0.0592)	-0.517*** (0.0594)	-0.648*** (0.0499)	-0.639*** (0.0502)	-0.622*** (0.0503)	-0.611*** (0.0502)
rank2	-0.383*** (0.0512)	-0.374*** (0.0515)	-0.361*** (0.0518)	-0.354*** (0.0517)	-0.466*** (0.0430)	-0.463*** (0.0434)	-0.450*** (0.0434)	-0.440*** (0.0433)
shsstudy1	-0.245*** (0.0464)	-0.235*** (0.0464)	-0.230*** (0.0463)	-0.234*** (0.0462)	-0.237*** (0.0403)	-0.230*** (0.0402)	-0.224*** (0.0400)	-0.229*** (0.0399)
shsstudy2	-0.353*** (0.0475)	-0.346*** (0.0476)	-0.339*** (0.0475)	-0.342*** (0.0474)	-0.295*** (0.0398)	-0.284*** (0.0398)	-0.276*** (0.0397)	-0.279*** (0.0395)
Accounting	-0.126* (0.0542)	-0.108* (0.0544)	-0.107* (0.0542)	-0.106 (0.0541)	-0.196*** (0.0452)	-0.183*** (0.0452)	-0.181*** (0.0450)	-0.181*** (0.0448)
Unistudy	-0.174** (0.0534)	-0.182*** (0.0533)	-0.184*** (0.0532)	-0.180*** (0.0531)	-0.299*** (0.0434)	-0.309*** (0.0434)	-0.314*** (0.0434)	-0.309*** (0.0433)
Male	0.0770* (0.0337)	0.0759* (0.0341)	0.0871* (0.0342)	0.0902** (0.0342)	0.168*** (0.0281)	0.166*** (0.0284)	0.173*** (0.0284)	0.179*** (0.0283)
experience1	-0.247*** (0.0533)	-0.245*** (0.0533)	-0.233*** (0.0541)	-0.219*** (0.0546)	-0.258*** (0.0445)	-0.248*** (0.0443)	-0.236*** (0.0453)	-0.216*** (0.0455)
experience2	-0.109* (0.0487)	-0.113* (0.0486)	-0.111* (0.0493)	-0.0995* (0.0498)	-0.0913* (0.0411)	-0.0902* (0.0408)	-0.0862* (0.0415)	-0.0693 (0.0418)
age1	0.0589 (0.0777)	0.0656 (0.0789)	0.0610 (0.0816)	0.0830 (0.0816)	0.0660 (0.0662)	0.0799 (0.0664)	0.0759 (0.0679)	0.108 (0.0677)
age2	-0.0125 (0.0633)	-0.00564 (0.0640)	-0.00992 (0.0669)	0.00633 (0.0667)	-0.00130 (0.0526)	0.00329 (0.0526)	0.00207 (0.0541)	0.0261 (0.0540)
age3	-0.0275 (0.0592)	-0.0269 (0.0592)	-0.0303 (0.0599)	-0.0138 (0.0598)	-0.0575 (0.0489)	-0.0595 (0.0483)	-0.0578 (0.0488)	-0.0348 (0.0487)
income1	-0.193*** (0.0470)	-0.196*** (0.0480)	-0.196*** (0.0480)	-0.184*** (0.0479)	-0.201*** (0.0399)	-0.218*** (0.0402)	-0.216*** (0.0401)	-0.203*** (0.0399)
income2	-0.0516 (0.0432)	-0.0553 (0.0436)	-0.0502 (0.0435)	-0.0427 (0.0434)	-0.0358 (0.0365)	-0.0482 (0.0363)	-0.0442 (0.0362)	-0.0350 (0.0360)

Table 9d continued

	INSURANCE KNOWLEDGE				FINANCIAL LITERACY			
	I	II	III	IV	I	II	III	IV
fathersch1		0.107*	0.107*	0.102*		0.0361	0.0366	0.0304
		(0.0470)	(0.0471)	(0.0472)		(0.0389)	(0.0391)	(0.0389)
fathersch2		0.0544	0.0497	0.0461		0.0692	0.0670	0.0613
		(0.0466)	(0.0466)	(0.0466)		(0.0392)	(0.0391)	(0.0389)
mothsch1		0.0977	0.0935	0.103		0.211***	0.199***	0.208***
		(0.0621)	(0.0622)	(0.0624)		(0.0518)	(0.0519)	(0.0517)
mothsch2		0.0679	0.0575	0.0635		0.143**	0.124**	0.129**
		(0.0537)	(0.0539)	(0.0541)		(0.0446)	(0.0447)	(0.0445)
Fathocc		-0.238***	-0.228***	-0.234***		-0.0606	-0.0521	-0.0565
		(0.0642)	(0.0640)	(0.0638)		(0.0552)	(0.0553)	(0.0553)
fathocc1		-0.145***	-0.141***	-0.141***		-0.132***	-0.125***	-0.126***
		(0.0373)	(0.0373)	(0.0372)		(0.0304)	(0.0304)	(0.0303)
Mothocc		-0.0975	-0.0984	-0.0851		-0.154**	-0.157**	-0.139**
		(0.0616)	(0.0616)	(0.0619)		(0.0518)	(0.0520)	(0.0517)
mothocc1		-0.0233	-0.0258	-0.0262		-0.0503	-0.0559	-0.0570
		(0.0438)	(0.0438)	(0.0437)		(0.0367)	(0.0366)	(0.0365)
discusfinan2		-0.00537	-0.00611	0.00112		-0.0456	-0.0484	-0.0401
		(0.0534)	(0.0533)	(0.0533)		(0.0445)	(0.0445)	(0.0445)
Drive		-0.0378	-0.0238	-0.0178		-0.00506	0.00459	0.0133
		(0.0374)	(0.0377)	(0.0377)		(0.0314)	(0.0315)	(0.0314)
capitaltown			-0.132***	-0.131***			-0.160***	-0.159***
			(0.0332)	(0.0332)			(0.0278)	(0.0278)
house1			-0.0225	-0.0294			0.0853	0.0733
			(0.0571)	(0.0568)			(0.0476)	(0.0471)
house2			-0.0266	-0.0340			0.0873*	0.0734
			(0.0535)	(0.0534)			(0.0442)	(0.0439)
house3			0.0151	0.0103			0.0895	0.0796
			(0.0828)	(0.0831)			(0.0694)	(0.0695)
educfinan1			-0.00549	-0.00315			-0.0518	-0.0515
			(0.0493)	(0.0491)			(0.0416)	(0.0414)
educfinan2			0.0363	0.0303			-0.0188	-0.0289
			(0.0555)	(0.0556)			(0.0452)	(0.0451)
educfinan3			-0.0172	-0.0286			-0.0153	-0.0272
			(0.0948)	(0.0951)			(0.0736)	(0.0734)

Table 9d continued

	INSURANCE KNOWLEDGE				FINANCIAL LITERACY			
	I	II	III	IV	I	II	III	IV
personalac				-0.0673 (0.0488)				-0.110** (0.0392)
investaccount				-0.154** (0.0520)				-0.193*** (0.0419)
Intercept	0.653*** (0.0727)	0.645*** (0.0859)	0.689*** (0.0936)	0.789*** (0.0993)	1.002*** (0.0624)	0.941*** (0.0743)	0.946*** (0.0795)	1.078*** (0.0831)
F statistics	39.43	24.90	20.20	19.19	67.95	43.21	36.83	35.64
r-squared	0.1234	0.1329	0.1374	0.1402	0.2019	0.2137	0.2216	0.2270

P < 0.1, **P < 0.05 and *P < 0.01, Robust Standard Errors in Parenthesis*

Source: Field Survey, 2014



CHAPTER EIGHT

FINANCIAL LITERACY AND STUDENTS' FINANCIAL OPINIONS, DECISIONS AND PRACTICES

8.0 INTRODUCTION

This section examines students' opinions and decisions about some personal finance issues. It also examines the personal financial management practices of students. Do students have good opinions about important financial matters? Can they make informed financial decisions? Do they have sound personal financial management practices? These are the very salient questions that this section seeks to address.

8.1 FINANCIAL OPINIONS

Students were made to rank the importance of some personal finance issues using a 5-point Likert scale ranging from very unimportant (1) to very important (5). The findings are presented in Table 10a below. In the Table, 1=Very unimportant, 2=Unimportant, 3=Not Sure, 4= Important and 5=Very Important.

The first statement sought to find out from the respondents how important maintaining financial record is. About 10.6% of the respondents were of the opinion that maintaining financial records was very unimportant, 8.7% view it as unimportant, 8% indicated they were not sure, 29.8% and 42.9% view it as important and very important respectively. Since 72.7% responded positively, it can be deduced that most of the respondents view maintaining financial records as important. The mean for this statement is 3.86 (close to 4-important) buttressing the assertion that most students have good judgement on the maintenance of financial records. Most students view spending less than their income as important and very

important. In percentage terms, 73.8% have that opinion. The mean of 3.92 gives credence to their sound opinion.

On the importance of maintaining adequate life insurance, 65.4% view it as important or very important, 19% were not sure and 15.79% see it as unimportant or very unimportant. With a mean of 3.71, it can be deduced that university students view maintaining adequate life insurance cover as just important.

Table 10a: Financial Opinions in Percentages

STATEMENTS	1	2	3	4	5	Mean
Maintaining financial records	10.6	8.7	8	29.8	42.9	3.86
Spending less than your income	7.4	9.8	8.9	31.1	42.7	3.92
Maintaining adequate life insurance	6.7	9	19	36.9	28.5	3.71
Maintaining adequate non-life insurance	15.6	19.5	33.2	23.5	8.2	2.89
Planning and Implementing regular investment programme	6.3	6	14.6	35.8	37.3	3.92
Opinion Index 3.66						

Source: Field Survey, 2014

Although, most of the respondents view maintaining adequate records as important, only 31.7% are of the opinion that maintaining adequate non-life insurance as important, 35.1% view it as unimportant or very unimportant and 33.2 were not sure. This statement has a mean of 2.89, meaning the respondents were indecisive in their opinion. Majority of the respondents (73.15%) ranked planning and implementing regular investment programme as important or very important, 14.6% were not sure and only 12.3% view it as unimportant or very unimportant. Their opinion reflected in the mean of 3.92 which shows that university students view planning and implementing regular investment programme as important. In summary, out of the five statements, the university students view four as important and were not sure of

one. The opinion Index of 3.66 which was derived from the average of the individual means indicates that they view those financial issues as important. This means that respondents have sound opinion about basic financial matters.

8.2 FINANCIAL DECISIONS

This section examines the decision making capabilities of the respondents. Three decision making scenario questions were asked. Five decision options for each of the questions were provided to the respondents for them to choose the right one. The questions are recapped and outlined as follows with the correct choice shaded:

- **Decision 1:** "You have saved GHS 12,000 for your university expenses by working part time. Your plan is to start university next year and you will need all of the money you have saved. Which of the following is the safest place for your university money?".
 - A. locked in her wardrobe at home
 - B. stocks
 - C. corporate bond
 - D. treasury bills
 - E. none of the above
- **Decision 2:** "Many people put money aside to take care of unexpected expenses. If you want to put money aside for emergencies, in which of the following forms would it be of *LEAST* benefit to you if you needed it right away?".
 - A. invested in a down payment of the house
 - B. current account
 - C. stocks

D. savings account

E. treasury Bills

- **Decision 3:** "You have just graduated from university and found a job earning GH¢28,000 per year. You will pay GH¢600 per month for five years for student loans. What should you do to improve your financial health?"

A. Cut expenses and use your savings to pay down debt

B. Keep the same spending pattern as in the past

C. Apply for a consumer loan for a new car

D. Eliminate debt by filing personal bankruptcy

E. Use your earnings to pay for a holiday abroad

The findings are presented in Table 10b below. For the first scenario, while 58% decided correctly by choosing the right option, the decision of 42% of the respondents were incorrect. The decision making capability of students regarding the scenario one above is low.

The decisions of majority of the respondents for the second scenario were wrong. Only 15.8% had the decision right while a whopping 84.2% got it wrong. Clearly the decision making capability of students regarding the second scenario is very low. With regards to the third scenario, majority of the respondents (71%) were able to decide correctly on how they can improve their financial health. The decision index (simple average of the mean correct decision of the three scenarios) of 48% is very low. This implies that respondents have poor financial decision making capabilities. Results from Table 12d further reveal that 18.4%, 28.8% and 43.% of the respondents had all the decisions wrong, only one of the decisions correct and two of

the decision correct, respectively. A meagre 9.3% had all the decision right. This implies that students do not have the required decision making capabilities to decide on financial matters.

Table 10b: Decision Making Capabilities

DECISIONS	Correct	Incorrect
Saving money to start university	58	42
Putting money aside for emergency	15.8	84.2
Improving financial health	71	29
Decision Index (mean correct score) 48%		

Source: Field Survey, 2014

8.3 PERSONAL FINANCIAL MANAGEMENT PRACTICES

Five basic statements were used to determine whether the respondents have sound personal financial management practice. A 5-point likert scale is used to measure the responses ranging from 1 which represents never, 2 for rarely, 3 for often, 4 for very often to 5 for always. The results are presented in Table 10c below:

Table 10c: Financial Management Practices

STATEMENTS	1	2	3	4	5	Mean
Set aside money each month for savings	13.5	30.6	26	13.4	16.5	2.89
Set aside money each month for future needs	8.1	24.5	28.8	19.2	19.5	3.18
Compare prices	3	9.8	21.3	26	40	3.9
Use spending plan/budget	8.9	23.6	27.5	20	20	3.19
Keep track of Expenditure	7.5	19.1	27.7	19.8	25.9	3.37
Practice Index 3.306						

Source: Field Survey, 2014

Concerning whether the respondents set aside money each month for savings, 13.5%, 30.6%, 26%, 13.4% and 16.5% responded never, rarely, often, very often and always respectively. This is an indication that about 44.1% of students do not put money

aside for savings. Only 29.9% of the students have made it a regular habit. Between the two extremes 26% sometimes/often see the need to set money aside for savings. A mean of 2.89 is an indication that most of the students do not regularly save. This may be due to the fact that most of the students are not earning much for them to save more. To the second practice question, 8.1% do not set aside money for future needs, 24.5% rarely do, 28.8% do it often, 19.2% do it very often and 19.5% always set money aside. A mean of 3.18 is an indication that students often keep money for future need which depicts good practice as compared to the savings practice. When it comes to comparing practices before buying an item, the respondents' responses revealed that they have a very good practice in this regard. This is evident by 66% of the respondents indicating they compare prices very often or always. A mean of 3.9 give credence to the fact that students in universities mostly compare prices before buying major items.

Regarding the use of a spending plan/budget, 8.9% do not use a spending plan, 23.6% rarely use a budget, 27.5% often use a spending plan, 20% use a spending plan very often and another 20% always use a spending plan. A mean of 3.19 is an indication that students often use a spending plan to guide their spending. This is a sign of good practice. Results on the last practice statement revealed that 26% never or rarely keep track of their expenditure and income, 27.7% often do and 45.7% very often or always track their cash flows. Using the scale of 1 to 5, a mean of 3.37 is an indication that students often keep track of their inflows and outflows. This is a sign of good practice. Finally, the practice Index of 3.31 which was derived from the average of the individual means indicates that university students have good personal financial management practice.

8.4 CONSEQUENCES OF BEING FINANCIALLY ILLITERATE

This section examines how a student's financial knowledge affects his/her opinions and decisions about some basic financial matters. This study also considered the impact of financial literacy on the financial management practices of students. The respondents were grouped into two categories using the median percentage correct scores of the entire survey. Students with overall percentage correct scores above the median score of 49 were categorized as students with more financial knowledge whilst students with percentage correct score equal or below 49 were categorized as students with less financial knowledge (consistent with Chen and Volpe, 1998). Cross-tabulations and Chi-square tests are used to determine if the differences of the two groups' opinions, decisions and practices are significant.

8.4.1 Impact of Financial Literacy on Students' Opinions

This section examines how respondents' financial knowledge influences their opinions on basic financial matters. The respondents' opinions were sought on the importance of: maintaining adequate records; spending less than their income; maintaining adequate life insurance cover; maintaining adequate non-life insurance cover; and planning and implementing regular investment programme. The results are presented in Table 11.

Table 11a reports respondents' opinions regarding maintaining adequate financial records. The Table shows that out of 1985 students with more financial knowledge, 49.4% and 32.6% find maintaining adequate financial records very important and important respectively. However, 6.0% were not sure while 5.1% and 6.8% find it unimportant and very unimportant respectively. Comparatively, out of 1905 students

with less financial knowledge, 36.0% and 26.9% view maintaining adequate financial literacy as very important and important respectively. The results indicate that 10.1% were not sure while 12.4% and 14.5% view maintaining adequate financial records as unimportant and very unimportant respectively. In sum, 82% of the more knowledgeable group consider records keeping as important while only 62.90% consider it as important. The chi-square also shows that there are significant differences in the financial opinion of these groups at the 0.01 level. This implies that students with high financial literacy have better opinion than students with low financial literacy.

Table 11b reports respondents' opinion regarding spending less than their income. Results from the Table shows that 83.40% of students with more financial knowledge view spending less than one's income as very important or important. Only 5.4% were not sure while 5.4% and 5.8% view it to be unimportant and very unimportant respectively. Relatively, pertaining to students with less financial knowledge the results indicate that 35.9% and 28.1% view spending less than their income very important and important (total important is 64%).12.6% of the respondents were not sure while 14.3% and 9.1% perceive that spending less than their income as unimportant and very unimportant. Comparatively, students with more financial knowledge (with 83.40% for important/very important) have better opinion than the less knowledgeable group (with 64% for important/very important). The chi-square also shows that there are significant differences in the financial opinions of the two groups at 0.01. This implies that high financial literacy can have a positive impact on students' opinion. The responses to the importance of maintaining adequate life insurance are reported in Table 11c. About 69.40% (27.8%

very important and 41.6% important) of students who are more financially knowledgeable view maintaining adequate life insurance as important and the rest believe otherwise. For the less financially knowledgeable, about 61.10% view maintaining adequate life insurance as important and the rest believe otherwise. The difference in opinions is significant at the 0.01 level. This implies financially knowledgeable students are more likely to have better opinions than students with less financial knowledge.

In terms of the importance of maintaining adequate non-life insurance as reported in Table 11d, 7.4% and 26.8% of students with more financial knowledge view maintaining adequate non-life insurance cover as very important and important respectively. About 32.5% were not sure whilst 19.2% and 14.0% believe it is unimportant and very unimportant respectively. Results on students with less financial knowledge however, indicate that 9.1% and 20.0% view maintaining adequate non-life insurance cover as very important and important respectively. While 33.9% of them are not sure, 19.8% and 17.2% of students with less financial knowledge indicated that maintaining adequate non-life insurance cover as unimportant and very unimportant respectively. Although, the opinions of the two groups are poor, students with more financial knowledge had better opinion (34.20% important or very important) than the less knowledgeable group (29.10% important or very important). The chi-square also shows that there are significant differences in the financial opinions of these groups at the 0.01 level.

Table 11: Impact of Respondents' Financial Knowledge on their Opinion
(1=Very unimportant, 2=unimportant, 3= Not sure, 4= important, 5 = Very Important)

A. Maintaining Financial Records (frequencies and %)

	1	2	3	4	5	Total
Students with More Financial Knowledge	135 6.8%	102 5.1%	120 6.0%	647 32.6%	981 49.4%	1985 100.0%
Students with Less Financial Knowledge	277 14.5%	236 12.4%	193 10.1%	513 26.9%	686 36.0%	1905 100.0%

Chi-Square = 185.209, P<0.01

B. Spending less than their Income (frequencies and %)

	1	2	3	4	5	Total
Students with More Financial Knowledge	114 5.8%	108 5.4%	108 5.4%	675 34.1%	977 49.3%	1982 100.0%
Students with Less Financial Knowledge	173 9.1%	273 14.3%	240 12.6%	535 28.1%	685 35.9%	1906 100.0%

Chi-Square = 199.746, P<0.01

C. Maintaining adequate Life Insurance (frequencies and %)

	1	2	3	4	5	Total
Students with More Financial Knowledge	106 5.3%	163 8.2%	338 17.0%	825 41.6%	551 27.8%	1983 100.0%
Students with Less Financial Knowledge	155 8.1%	186 9.8%	399 21.0%	607 31.9%	555 29.2%	1902 100.0%

Chi-Square = 47.297, P<0.01

D. Maintaining adequate Non-Life Insurance (frequencies and %)

	1	2	3	4	5	Total
Students with More Financial Knowledge	278 14.0%	381 19.2%	643 32.5%	531 26.8%	147 7.4%	1980 100.0%
Students with Less Financial Knowledge	327 17.2%	376 19.8%	646 33.9%	381 20.0%	173 9.1%	1903 100.0%

Chi-Square = 29.277, P<0.01

E. Planning and Implementing Regular Investment Programme (frequencies and %)

	1	2	3	4	5	Total
Students with More Financial Knowledge	92 4.6%	90 4.5%	200 10.1%	767 38.7%	833 42.0%	1982 100.0%
Students with Less Financial Knowledge	153 8.0%	145 7.6%	367 19.3%	624 32.7%	617 32.4%	1906 100.0%

Chi-Square = 122.686, P<0.01

Source: Field Survey, 2014

Table 11e reports respondents' opinion regarding planning and implementing regular investment programme. The results show that 42.0% and 38.7% of students with more financial knowledge view planning and implementing regular investment programme as very important and important respectively, 10.1% indicated they are not sure whilst 4.5% and 4.6% view it as unimportant and very unimportant respectively. However, 32.4% and 32.7% of students with less financial knowledge view planning and implementing regular investment programme as very unimportant and important, 19.3% were not sure and 7.6% and 8.0% of students with less financial knowledge noted that planning and implementing regular investment programme is unimportant and very unimportant respectively. Thus a total of 80.70% of the more knowledgeable views it as least important while only 65.10% of the less knowledgeable views it as least important. The differences in opinions are significant at the 0.01 level. This implies that high level of financial knowledge impacts positively on students' opinion. This is consistent with the findings of Chen and Volpe (1998).

8.4.2 Impact of Financial Literacy on Students' Decisions

The study examines how respondents' financial knowledge influences their financial decision making capabilities by comparing those who are more financially knowledgeable to those who are not. The results are presented in Table 12. The three scenario questions outlined in section 7.10.2 above were used. The questions are recapped and outlined as follows:

Table 12a reports respondents' decisions regarding the first scenario. The results show that 73.3% of students with more financial knowledge made the right decision

while 26.7% got the decision wrong. However, only 42.3% of student with less financial knowledge made the right decision while a whopping 57.7% had the decision wrong. The difference in their decisions were statistically significant, implying students with more financial knowledge have better decision making capabilities than those with less financial knowledge. This attests to the fact that one's ability to decide well on financial issues depend on his/her level of financial literacy.

Although, both groups performed poorly regarding the second decision as reported in Table 12b, students who are more financially knowledgeable with a correct score of 20.2% were relatively better than those who are less financially knowledgeable with correct score of 11.2%. The difference in the decision making capabilities of the two groups is statistically significant. When provided with a hypothetical situation of improving their financial health (results in Table 12c 84.2% of more knowledgeable respondents selected the correct choice, compared to 57% of the less knowledgeable group. The Chi-square test suggests that the difference in decision is highly significant.

Further analysis into the decision making capabilities of the two groups revealed interesting results. From Table 12d it can be seen that 30.02% of students with less financial knowledge got all the decisions wrong while only 7.20% of the more knowledgeable had all the decision wrong. About 34.6% and 23.2% of the less knowledgeable and more knowledgeable respondents respectively had only one decision right. While only 31.5% of students with less financial knowledge had two

of the decisions correct, 55% of students with more financial knowledge had the same number of decisions correct.

Table 12: Impact of Respondents' Financial Knowledge on their Decisions

A. Decision 1: Planning to start University (frequencies and %)

	<i>Correct</i>	<i>Incorrect</i>	<i>Total</i>
Students with More Financial Knowledge	1452 73.3%	530 26.7%	1982 100.0%
Students with Less Financial Knowledge	810 42.3%	1106 57.7%	1916 100.0%

Chi-Square = 384.002, P<0.01

B. Decision 2: Setting Money aside for Emergency (frequencies and %)

	<i>Correct</i>	<i>Incorrect</i>	<i>Total</i>
Students with More Financial Knowledge	400 20.2%	1583 79.8%	1983 100.0%
Students with Less Financial Knowledge	215 11.2%	1704 88.8%	1919 100.0%

Chi-Square = 59.071, P<0.01

C. Decision 3: Improving Financial Health (frequencies and %)

	<i>Correct</i>	<i>Incorrect</i>	<i>Total</i>
Students with More Financial Knowledge	1671 84.2%	314 15.8%	1985 100.0%
Students with Less Financial Knowledge	1098 57.3%	817 42.7%	1915 100.0%

Chi-Square = 341.130, P<0.01

D. Combined Decisions (frequencies and %)

	Students with Less Financial Knowledge	Students with More Financial Knowledge	Total
All wrong Decisions Wrong	582 30.02%	143 7.20%	725 18.4%
Only One Decision Correct	671 34.6%	461 23.2%	1132 28.8%
Two Decisions Correct	612 31.5%	1096 55.1%	1708 43.4%
All Three Decisions Correct	76 3.9%	290 14.6%	366 9.3%

Chi-square = 559.452, P<0.01

Source: Field Survey, 2014

Finally, 14.6% of the financially knowledgeable respondents got all the decision right but only 3.9% of the less financially literate respondents got all the decision correct. As with the individual decisions analysis, the composite decision is also significant at the 0.01 level. This implies that students with more financial knowledge progressively have better decision making capabilities than the less knowledgeable ones. This is consistent with the findings of Chen and Volpe (1998), Hastings and Tejada-Ashton (2008), Al-Tamimi and Kalli (2009) and Lusardi and Mitchell (2009).

8.4.3 Impact of Financial Literacy on Personal Financial Management Practices

This section of the study examines how respondents' financial knowledge influences their personal financial management practices. Although the overall financial management practices was good (practice Index of 3.31 under 7.10.3) there were significant differences according to the financial literacy level of respondents. The practices considered are those descriptively presented in section 7.10.3 above. The results are presented in Table 13.

Table 13a reports respondents' personal financial management practices regarding setting aside money each month for savings. The table shows that 26.9%, 15.2%, and 17% students with more financial knowledge often, very often and always respectively put money aside each month as savings. However, 30.2% and 9.9% of them rarely and never respectively put money aside each month as savings. Concerning students with less financial knowledge, 25.1% often put money aside, 11.5% very often put money aside, 15.1% always put money aside, 31.1 rarely put money aside and 17.2% rarely put money aside as savings. Comparatively, the

practices of the more financially literate students (59.90% often to always) and above) are better than that of the less literate ones (51.70% often to always). The difference in their practice is statistically significant at the 0.01 level. This implies that student with good savings practice are more likely to be students with high level of financial knowledge.

In terms of setting aside money each month for future needs (reported in Table 13b), 72.60% of students with more financial knowledge often or very often or always set money aside for future needs while 27.40% indicated that they rarely or never set aside money each month for future needs. About 62% of students with less financial knowledge often or very often or always set money aside for future needs while the rest (38%) rarely or never put money aside. Clearly, it can be deduced that financially knowledgeable students have better practice than less knowledgeable one. The chi-square shows that there is a significant difference in the practices of these groups at 0.01.

In terms of comparing prices when shopping for major expenses (reported in Table 13c), 91.70% of students with more financial knowledge often or very often or always practice the act of comparing prices while only 8.30% indicated that they rarely or never practice this financial management virtue. About 82.7% of students with less financial knowledge often or very often or always practice the act of comparing prices before buying a major item while (17.3%) rarely or never practice this. Although the practice for both group are very good, relatively students who are financially knowledgeable have better practice than less financially knowledgeable one. The difference in their practice is highly significant at the 0.01 level.

Table 13d reports the results relating to the practice of respondents in using a spending plan or budget. Ironically, students with less financial knowledge have better practice as compared to their counterparts with more financial knowledge. About 68.50% of the less literate respondents indicated they often or very often or always use a spending plan. For the more literate ones, 66.6% indicated that they often/very often/always use a spending plan. The difference in their practices is significant. This means that students with less financial knowledge are more likely to use a spending plan. Out of the five practice indicators this is the odd one out.

Table 13e reports respondents' personal financial management practices regarding keeping track of expenditure and income. The table shows that 76.20% of students in the financially knowledgeable group often-always keep track of their expenditure and income while 23.80% of them rarely or never practice this act. The results also depict that 70.50% of students with less financial knowledge often-always keep track of their cash flows while 29.50% rarely or never check their cash flows. Comparatively, students with more financial knowledge are better in keeping track of their cash flows than those students with less financial knowledge. This is significant at the 0.01 level. Consistent with the findings of Lusardi and Tufano (2009), Van Rooij, Lusardi, and Alessie (2007), Lusardi and Mitchell (2009) Hilgert, Hogarth, and Beverly (2003) and Mandell (2006) respondents with more financial knowledge have better financial management practices than those with less knowledge.

Table 13: Impact of Respondents' Financial Knowledge on their Practices
(1=Never, 2=Rarely, 3= Often, 4= Very Often, 5 = Always)

A. Set aside Money each Month for Savings (frequencies and %)

	1	2	3	4	5	Total
Students with More Financial Knowledge	196 9.9%	599 30.2%	533 26.9%	301 15.2%	353 17.8%	1982 100.0%
Students with Less Financial Knowledge	328 17.2%	592 31.1%	478 25.1%	220 11.5%	288 15.1%	1906 100.0%

Chi-Square = 54.005, $P < 0.01$

B. Set aside Money each Month for Future Needs (frequencies and %)

	1	2	3	4	5	Total
Students with More Financial Knowledge	115 5.8%	428 21.6%	590 29.8%	422 21.3%	426 21.5%	1981 100.0%
Students with Less Financial Knowledge	199 10.4%	524 27.5%	527 27.6%	323 16.9%	333 17.5%	1906 100.0%

Chi-Square = 58.831, $P < 0.01$

C. Comparing Prices (frequencies and %)

	1	2	3	4	5	Total
Students with More Financial Knowledge	27 1.4%	139 7.0%	377 19.0%	556 28.1%	883 44.6%	1982 100.0%
Students with Less Financial Knowledge	88 4.6%	241 12.7%	449 23.6%	453 23.8%	671 35.3%	1902 100.0%

Chi-Square = 103.844, $P < 0.01$

D. Use of Spending Plan/Budget

	1	2	3	4	5	Total
Students with More Financial Knowledge	143 7.2%	519 26.2%	544 27.4%	392 19.8%	384 19.4%	1982 100%
Students with Less Financial Knowledge	202 10.6%	397 20.9%	523 27.5%	385 20.3%	394 20.7%	1901 100%

Chi-Square = 25.265, $P < 0.01$

E. Keep Track of Expenditure

	1	2	3	4	5	Total
Students with More Financial Knowledge	99 5.0%	371 18.7%	577 29.1%	397 20.0%	537 27.1%	1981 100%
Students with Less Financial Knowledge	191 10.0%	372 19.5%	500 26.3%	373 19.6%	468 24.6%	1904 100%

Chi-Square = 38.667, $P < 0.01$

Source: Field Survey, 2014

In summary, sections 8.4.1, 8.4.2 and 8.4.3 provide evidence that financial literacy has a positive influence on students' opinions, decisions and financial management practices. Hence the hypothesis there is a positive significant relationship between financial literacy and financial decisions, opinion and practice is accepted.

8.5 CHANNELS/AVENUES TO INCREASE FINANCIAL KNOWLEDGE

Students were asked to indicate where they will like to learn or increase their financial knowledge. A list of potential avenues to increase ones financial knowledge was provided to the respondents to choose from. They had the options to choose many avenues they will like to use to increase their financial knowledge. They also had the option to indicate other avenues that were not listed for them to choose from. Though few respondents chose other they did not indicate the specific avenue. Those were excluded from the analysis. The results are reported in Table 10.

Generally, it seems that most of the respondents did not know where they can increase their financial knowledge. None of the avenues had a score of more than even 50%. Based on the responses, 38.1% of the respondent indicated that they expect to increase their financial knowledge in school. This was the 1st ranked avenue. The second ranked avenue was through books, with 30.8% students indicating this source. The 3rd and 4th ranked avenues were financial institution (27.3%) and life experience (27%). The 5th, 6th, 7th and 8th ranked avenues were media (17.8%), job (15.5%), friends (13.7%) and parents (12.1%) respectively.

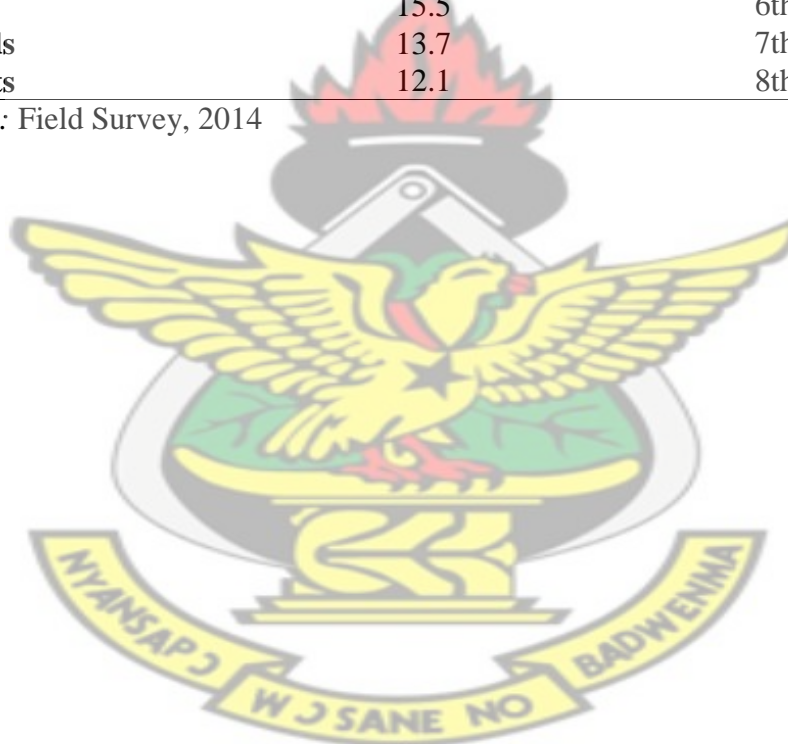
From the presentation above, the respondents believe that the ideal place to learn and increase their financial knowledge is in school. The school thus provides the perfect

environment for students to gather some fundamental tips on financial matters. The onus now rest on the authorities of universities in Ghana, other tertiary institutions, senior high school etc. to provide avenues for students to acquire financial knowledge.

Table 14: Avenue to Acquire Financial Knowledge

AVENUE	Percentage	Rank
School	38.1	1 st
Books	30.8	2 nd
Financial Institution	27.3	3rd
Life Experience	27	4th
Media	17.8	5th
Job	15.5	6th
Friends	13.7	7th
Parents	12.1	8th

Source: Field Survey, 2014



CHAPTER NINE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

9.0 INTRODUCTION

This chapter presents a summary of findings arising from the empirical analysis, the conclusion drawn from the results and the recommendations arising there from. I conclude this chapter by making suggestions for future research.

9.1 SUMMARY OF FINDINGS

In this age of globalisation and financial development, it is crucial to research and find ways to improve the financial literacy competences of people especially students who are seen as the future generation of every country. This study focuses on the issue of financial literacy among university students in Ghana. A total of 3,932 students from twelve public and private universities in Ghana participated in this study, making it the first comprehensive study on the state of financial literacy among university students in Ghana. Extant literature on financial literacy studies among university students in Ghana focuses on one institution and/or department and therefore unrepresentative of the university student population. The framework used in this study, assesses students' knowledge in money management, savings, borrowing and investments, and insurance. In addition, the study examines student's application of financial knowledge and understanding in terms of their financial behaviour and decision making.

The first part of the study documents the level of financial literacy among the students. The second part of the study uses an econometric model to assess the determinants of financial literacy. The third part examines how a student's level of

financial literacy influences his/her financial opinions, decisions and practices. Several important findings emerged from this study and these are summarized and discussed below.

With regards to students' knowledge in finance, I observe that students' level of knowledge in savings is medium whereas their knowledge in general finance, investment and insurance are low. This means that students have adequate knowledge in savings and borrowing but inadequate knowledge in the other components. Considering the fact that about 73.5% and 25.4% of students have savings and current accounts, respectively, it not surprising that they have more knowledge in savings and borrowing. I also find that 32.6% of the respondents failed the overall financial literacy test, 16.8% obtained satisfactory grade, 19.5% obtained good grade, 14.2% had very good grade and 16.9% had excellent grade. The overall mean percentage of correct scores for the entire survey is 48.6%, indicating on average the respondents answered less than half of the questions correctly. Thus, the findings show that lack of financial knowledge is widespread among university students in Ghana. This is consistent with prior studies such as Chen and Volpe (1998, 2002), Lusardi, Mitchell and Curto (2009) and Ansong and Gyensare (2012). Some of the reasons that could account for the low financial literacy level of students in Ghana are: lack of finance education in the curricula of secondary schools and universities in Ghana; the young ages of the respondents who are in their early phase of their financial life cycle; lack of conscious effort of parents to create a platform for their wards to gain knowledge in finance etc.

Although, the overall level of financial knowledge is low among the respondents, there are significant differences in the financial literacy scores of the respondents based on their basic demographic and financial exposure characteristics as reported in Chapter 6. From the results of the study, I find that respondents' financial knowledge varies significantly with their gender. Consistent with the studies of Volpe (1999, 2002), and Lusardi, Mitchell and Curto (2010), males are more financially knowledgeable than females. Therefore, in support of Lusardi, Mitchell and Curto (2010), there is now fairly robust evidence confirming that females are less financially knowledgeable.

The results for the entire survey on academic discipline clearly indicate that students majoring in business are more knowledgeable than the non-business majors. This finding is consistent with the works of Lusardi and Mitchell (2007b), Chen and Volpe (2002, 1998). Since business and economics students study subjects that are finance based, it is obvious that they will be more knowledgeable in finance than students majoring in other courses. Moreover, the results of the four financial literacy dimensions and the entire survey, clearly indicate that the accounting/finance majors are more financially knowledgeable than those majoring in marketing, human resource management etc. Consistent with the findings of Oppong-Boakye and Kansanba (2013), business students' area of concentration has a significant impact on their financial knowledge.

The results further reveal that graduate students have more financial knowledge than the undergraduates and level 400 and 300 students are more knowledgeable than level 200 and 100 students. This means that class rank has a significant impact on the

financial knowledge of students. This is consistent with the findings of Chen and Volpe (2002, 1998). Also, the overall means show that respondents who are relatively older are more knowledgeable than those who are not. This may be so since an increase in age comes with the accumulation of knowledge based on practical life experiences (Agarwal et al., 2009). Critically, it was observed that financial literacy varies positively with age to a particular point. Moreover, I find that some work experience is associated with financial literacy. This is consistent with the findings of Chen and Volpe (1998) and Ansong and Gyensare (2012). All things being equal, the more acquainted a worker is to a particular job, the more experienced he/she would be and hence the likelihood that he/she will be acquainted with financial issues like wages and salaries, fringe benefits, and savings and investment (Ansong and Gyensare, 2012). Consistent with the findings of Hilgert and Hogarth (2002), this study reveals that some amount of income is needed to promote high financial literacy.

Apart from the basic characteristics of respondents, family characteristics, the geographical area the students lived, source of fund for education and participation in the financial market are likely means through which students could be exposed to financial matters. Students with relatively more financial knowledge have fathers and mothers with educational level lower than first degree. Comparatively, mothers' educational level has more impact on their children's knowledge than fathers' education. The impact of mother education is consistent with the findings of Lusardi, Mitchell and Curto (2010) and Ansong and Gyensare (2012) but the direction of the impact is inconsistent. Similar to mothers' employment status, the financial knowledge of students whose fathers are gainfully employed is higher than those

with unemployed fathers. The differences in means for all the financial literacy dimensions and the entire survey are very significant.

Also, I observe from the univariate analysis that students who drive cars tend to have more financial literacy knowledge than students who do not drive since probably those who drive have to make various decisions relating to money management in areas of payments of fuel bills, insurance cover, repairs and maintenance etc. I find that students who live in the capital towns are more financially literate than those who live outside the capital since those who dwell in the capital are often more likely to encounter financial information and financial services due to the huge presence of financial institutions in those areas. Also, students who live off campus tend to have high financial knowledge than those who live within campus partly due to the fact that those live off campus would have made various decisions relating to money management in areas of payments of rent, light bills, and other utilities hostels do not cater for.

The results suggest that students who do not have full involvement of their family in financing their education are financially more knowledgeable than those with full family involvement. Students who self-finance or partly finance their education might be workers with work experience. Within the work environment and in the process of working to support their education, they get exposed to financial issues such as money management, savings, borrowings, and investments. Also, I find that students with at least a personal account or an investment account are financially literate than those without any of them. Thus, through the process of acquiring and maintaining the accounts they become more exposed to financial issues.

Although, the ANOVA and Levene tests reveal that almost all the basic and financial exposure characteristics influence respondents' financial literacy, the multivariate analysis proved otherwise. This means that some of the effects observed in the univariate analysis may simply be capturing other cross sectional variations. After accounting for rich set of data in the multivariate analysis, the results show that some basic characteristics like gender, academic discipline, class rank, area of study at SHS, income, work related experience and financial exposure characteristics such as mothers' education, fathers' occupation, living in the capital town, financial market involvement are strong predictors of financial literacy. This means that these variables significantly influence the financial literacy of students in Ghana. However, variables such as age, fathers' education, mothers' occupation, driving experience, campus residential characteristics, source of funding for education are not determinants of financial literacy.

With respect to students' opinion on financial matters, the results reveal that out of the five statements used to measure students' opinion, the university students view four as important and are not sure of one. The opinion Index of 3.66 on the scale of 1 (very unimportant) to 5 (very important) indicates that students view the financial issues as important. This means that respondents have sound opinion about basic financial matters. Further, with a decision index of 48%, the results suggest that the respondents generally have poor financial decision making capabilities. Also, this study documents a practice Index of 3.31 which indicates that university students demonstrate good personal financial management practices.

The results of this study further reveal from the cross-tabulations and chi-square tests that there are severe consequences of being financially illiterate. I find that high financial literacy can have a positive impact on students' opinion. Analysis into the decision making capabilities of students who have more financial and those with less financial knowledge reveals that 30.02% of students with less financial knowledge got all the decisions wrong while only 7.20% of the more knowledgeable had all the decision wrong. Also, 14.6% of the financially knowledgeable respondents got all the decision right but only 3.9% of the less financially literate respondents got all the decision correct. This attests to the fact that one's ability to decide well on financial issues depend on his/her level of financial literacy. Although, the financial management practices of students are very good in general, comparatively, students who are financially knowledgeable have better practice than less financially knowledgeable one. The results of the study have provided evidence that financial literacy has a positive influence on students' opinions, decisions and financial management practices.

Lastly, I find that the ideal place students expect to learn and increase their financial knowledge is in school. Thus, the school provides a perfect environment for students to gather some fundamental tips on financial matters. The implication of this finding is that the authorities of universities in Ghana have to provide avenues for students to acquire and improve on their financial knowledge. Aside the school, books, financial institution, life experience, media, job, friends and parents ranked in order of preference as medium to improve the financial knowledge of students. Although many studies have identified parents as the most important sources for teaching children about money (Sabri, 2011), ironically, this study reveal that students

studying in Ghanaian universities do not expect to learn financial matters from their parents. This presupposes that parents are not making conscious efforts to influence and teach their wards financial issues at home. This might partly explain why there is a negative relationship between parents' education and financial literacy.

9.2 CONCLUSION

This study examines the financial literacy level of university students in Ghana. Specifically, the study investigates students' knowledge in general money management, savings and borrowing, investment and insurance. In all, 3,932 students drawn from six public and six private universities participated in this study. The findings of this study suggest that the financial literacy of university students in Ghana is low. Students exhibit moderate knowledge in savings and borrowing but low level of knowledge in other finance issues. The level of financial literacy was found to be affected by gender, academic discipline, class rank, work experience, income, mothers' educational background, fathers' occupation and financial market involvement. Analysis of the full model shows that students with more financial knowledge are more likely to be males, have some work experience, earn some income, study business, major in accounting, banking and finance, have mothers with low level of education, have fathers who are employed, have a saving account and finally they have an investment account.

Also, I document that financial literacy positively affects the financial opinions, decisions and practices of students. This finding suggests that students with high financial literacy are more likely to have sound judgement about financial issues, make the right decision among financial alternatives and also have sound personal

finance practices. While the study shows that the level of financial literacy of students is affected by both basic and financial exposure characteristics, I conclude that university students are not well knowledgeable in financial matters and that this would tend to impact negatively on their future lives through poor judgement, wrong decision making and poor financial management practices.

In the light of the low financial literacy of students and the various economic and financial developments (discussed in chapter five) that have and are taking place in Ghana, it is important to empower the younger generation especially students who are seen as the future leaders and transformers of the economy with sound financial knowledge. It is very critical to ascertain students' level of financial knowledge so that effective interventions could be put in place to help close the financial knowledge gap. The final outcomes of the research provides enough evidence of students' level of knowledge in personal finance and the determinants of financial literacy for the development of guidelines for implementing an effective financial literacy programme so as to improve the quality of life of people in Ghana, especially students.

Moreover, information on factors that influence the accumulation of financial knowledge reported in this study will assist various stakeholders to effectively target financial education programmes to the groups (for instance females, level 100 and 200 students) that need them most. Also, the recommendations provided below if adopted can assist in improving the personal finance capabilities of students and also empower younger consumers to navigate smoothly through today's increasingly complex financial market. Finally, it is of great essence for all stakeholders to come

together to promote financial literacy in a lower middle income country like Ghana because of the positive direct impact this can have on access to finance and savings, which in turn support livelihoods, economic growth, sound financial systems, and poverty reduction.

9.3 RECOMMENDATIONS

Based on the findings of this study, the following recommendations are offered to policy makers, stakeholders and students of universities in Ghana.

1. The results indicate that most of the respondents expect to learn financial matters in school, so I recommend to the authorities of the universities and other tertiary institutions in Ghana to introduce a compulsory university/institution wide core course in basic finance in their curriculum. Bruhn et al. (2013) evaluate a comprehensive financial education programme for high school students across 6 states in Brazil. They report that the financial education programme increases student financial knowledge by a quarter of a standard deviation and shifts the distribution of financial proficiency scores rightward. Moreover, their results show significant effect on knowledge, financial autonomy, intention to save, savings and spending behaviour of students. Thus the university or school provides an environment conducive for students to learn some fundamental tips on financial matters. Also, I recommend that educational institutions make financial literacy relevant, real, and practical through field trips, internship programmes, and classroom simulations for students to gain an appreciation of the real world applicability of personal finance.

2. Since students' associations normally organise programmes for students, I recommend to the dean of students' office or units in charge of students affairs to make it mandatory for all associations to add financial education to their major programmes.
3. Xu and Zia (2012) find that one potentially effective and natural way of improving financial literacy in developing countries might be through the existing educational system. Therefore, I recommend that the educational authorities of Ghana (Ministry of Education, Ghana Education Service, National Council for Tertiary education etc.) should collaborate to add a mandatory course or subject on financial education to the course structure of schools from basic school to tertiary level. Financial literacy education beginning at the high school level may be the key to improving financial decision-making in the population (Cameron et. al, 2014)
4. The Government of Ghana in conjunction with various stakeholders and experts should work on developing a national policy on financial literacy. The policy should fashion out a single usable definition (or possibly some tenets) for financial literacy and ensure that this definition is used on the national front such that the general public can more clearly understand the meaning of financial literacy. The policy should provide a framework and a plan to improve financial literacy in the short, medium and long term.
5. The Bank of Ghana could make financial literacy the main tenet of the Financial Inclusion Policy they are developing. The results of this study reveal that students who are financially included are more financially knowledgeable than those who are not. The policy should provide mechanisms through which consumers can obtain sound financial education through the process of being

financially included. Improved financial literacy can promote high financial inclusion.

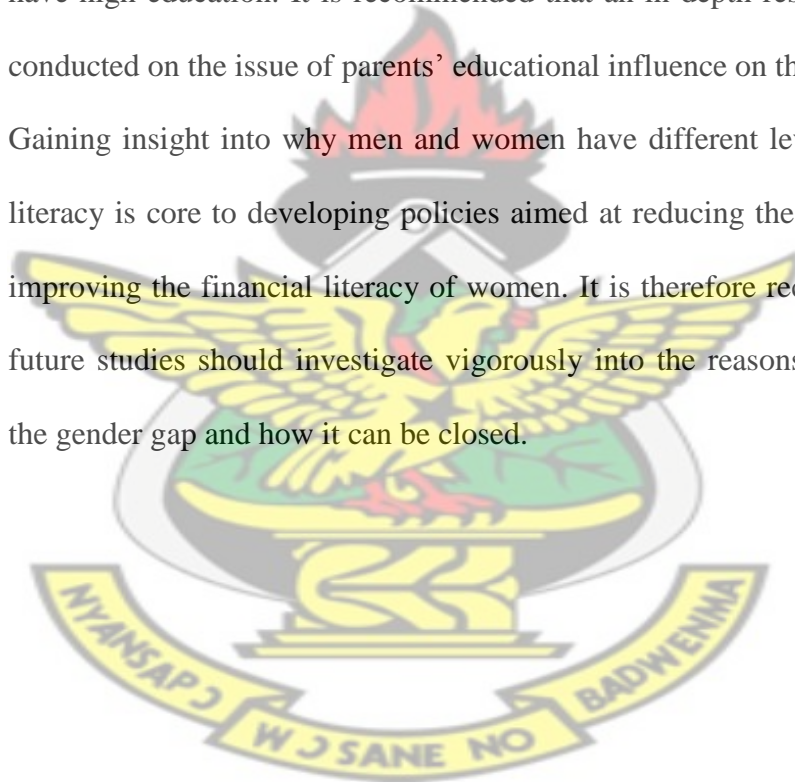
6. The national financial literacy week should be deepened. Since the launch of the national financial literacy week in 2008, public sensitization of the programme has been very appalling. Majority of the populace are still ignorant of the national financial literacy week. It is worth noting that a parallel programme is run by Campaign for Female Education (CAMFED) albeit with a limited coverage due to resource constraints. To this end, I recommend that, the government should play a key role in involving the citizenry in the national financial literacy week. Especially, tertiary students can be involved in the activities of the financial literacy week by organising some of the activities on campus. More so, a defined week in the year should be set aside permanently and made public for people to be aware of instead of the date for the week set at different months. Additionally, other non-governmental organisations can target other parts of the country with financial literacy model similar to that of CAMFED. This will ensure that an expanded level of awareness is created among the citizens on the themes of financial literacy.
7. Bruhn et al. (2013) demonstrates that a high quality financial education programme targeted at the youth can improve their financial knowledge, attitudes, and behaviours. Therefore, I recommend to government and the ministry of youth and sports to add financial education to national initiatives and programmes targeted at the youth. Enrolling and passing a course in financial education should be a requirement to be part of the programme. Existing programmes can also introduce financial education into their programmes to improve the financial literacy of the youth on board.

8. Since having a bank account is associated with financial literacy, financial institutions have a major role to play in the quest to improve the financial knowledge of people. Financial Institutions should make a conscious effort to educate their consumers on basic financial matters. They can provide financial tips on their information screens, ATM machines, internet banking platform, mobile messages etc. They should continually, design products that will provide incentives to students and adults to bank with them. This research reveal that aside school and books, students expect to improve their financial literacy through financial institutions so banks on campus as part of their corporate social responsibility, should design comprehensive financial education programmes for students.
9. Financial literacy is often viewed as a complement to consumer protection (Xu and Zia (2012)). One of the primary goals of financial education is therefore to equip individuals with the capability to navigate through a complex array of financial products, including pensions and mortgages, and to make sound financial decisions. I therefore recommend that consumer rights advocacy groups like consumer advocacy centre, as matter of urgency include financial education in their advocacy activities.
10. Most studies including this one reveal that females are worse off when it comes to financial literacy; so attention should be paid to targeting financial literacy programmes towards them. In this regard, I recommend that women activist groups and women commissioners (equivalent) of the various student representative councils of the various campuses should educate females on financial issues.

9.4 RECOMMENDATION FOR FUTURE STUDIES

The study recommends the following for future empirical studies:

1. Since most youth spend most of their time on their laptops, tablets, and phones in exploring various educational and social websites, future researchers should explore the possibility of using ICT in improving financial literacy of students and youth in general.
2. Contrary to other studies, this study finds that students whose parents have low level of education are more financially literate than those whose parents have high education. It is recommended that an in depth research should be conducted on the issue of parents' educational influence on their wards.
3. Gaining insight into why men and women have different levels of financial literacy is core to developing policies aimed at reducing the gender gap and improving the financial literacy of women. It is therefore recommended that future studies should investigate vigorously into the reasons accounting for the gender gap and how it can be closed.



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APPENDIX 1 - QUESTIONNAIRE

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF GRADUATE STUDIES

PHD QUESTIONNAIRE

TOPIC: FINANCIAL LITERACY AMONG UNIVERSITY STUDENTS:
EVIDENCE FROM GHANA

PREAMBLE

The main purpose of this study is to assess the financial literacy of university students in Ghana. The study is mainly for academic purposes. Participants are assured of utmost **confidentiality** regarding information provided by them. This survey is intended to measure university students' knowledge of personal finance. The results will be used to help students improve their knowledge and universities improve their curricula.

DIRECTIONS: Please indicate your response to each question by selecting the most appropriate answer for each question.

I. ABOUT YOURSELF

1. **Indicate the name of your University**.....
2. **What category does your University fall?** Public University [☐] Private University [☐]
3. **What is your class rank?**
 - A. 1st Year Undergraduate (Level 100)
 - B. 2nd Year Undergraduate (Level 200)
 - C. 3rd Year Undergraduate (Level 300)
 - D. 4th year and above Undergraduate (Level 400 and beyond)
 - E. Postgraduate
4. **What is your age?**
 - A. up to 20
 - B. 21-25
 - C. 26-30
 - D. 31-40
 - E. 41 and above
5. **What is your gender?**
 - A. Male
 - B. Female

6. Which of the following best describes your personal income (monies that come into your hands for personal use) last year? Eg. Students' loan, salary, commission, monies from family etc.
- A. Under GH¢400
 - B. GH¢400 - GH¢1,499
 - C. GH¢1,500- GH¢4,999
 - D. GH¢5,000- GH¢14,999
 - E. Above GH¢15,000
7. How many years of working experience do you have? Include full or part-time experience, internship etc.
- A. None
 - B. Less than 2 years
 - C. Two to less than 4 years
 - D. Four to less than 6 years
 - E. Six years or more
8. What is your field of study at the University?
- A. Business
 - B. Economics
 - C. Humanities (arts, social science, language etc.) other than A and B
 - D. Sciences or Engineering
 - E. Others, specify.....
9. If you are a BUSINESS student, write your area of concentration/major below. Eg. finance, accounting, marketing, management, public administration, etc. (Indicate 'general' if you don't have an area of concentration yet).
10. What was your field of study at Senior High School or equivalent?
- A. Business
 - B. General arts with economics
 - C. General arts without economics
 - D. Sciences
 - E. Visual Art
 - Others, specify.....

II. GENERAL PERSONAL FINANCE KNOWLEDGE

11. Personal finance literacy can help you

- A. avoid being victimized by financial scams.
- B. learn the right approach to invest for your future needs and buy the right kind of insurance.
- C. lead a financially secure life through forming healthy spending habits.
- D. do all of the above.
- E. don't know

12. Personal financial planning involves

- A. establishing an adequate financial record keeping system.
- B. developing a sound yearly budget of expenses and income.
- C. preparing plans for future financial needs and goals.
- D. all of the above.
- E. don't know.

13. A personal budget will help you

- A. allocate future personal income towards expenses
- B. prioritise your spending
- C. monitor the sources of your income
- D. all of the above
- E. don't know

14. Which of these can be turned into cash easily?

- A. money in a fixed deposit account.
- B. money in a current account.
- C. a car.
- D. a computer.
- E. don't know.

15. Your net value of your asset is

- A. the difference between your expenditures and income.
- B. the difference between your liabilities and assets.
- C. the difference between your cash inflow and outflow.
- D. the difference between your assets and expenditures.
- E. don't know.

16. Imagine that the interest rate on your savings account was 10% per year and inflation was 11.5% per year. After a year you will be able to

- A. buy more than today with the money in this account
- B. the same as today with the money in this account
- C. less than today with the money in this account
- D. buy more of some goods and less of others
- E. don't know

III. YOUR KNOWLEDGE OF SAVINGS AND BORROWING

17. Which account usually pays the MOST interest?

- A. Fixed Deposit
- B. Savings Account
- C. Current Account
- D. Don't Know

18. If you guarantee a loan for a friend, then

- A. You become responsible for the loan payments if your friend defaults
- B. It means that your friend cannot receive the loan by himself
- C. You are entitled to receive part of the loan
- D. You are in a better position to earn a personal loan
- E. Don't Know

- 19. If you invest GH¢1,000 at 20% for a year, your balance in a year will be**
- A. Higher if the interest is compounded daily rather than monthly
 - B. Higher if the interest rate is compounded quarterly rather than weekly
 - C. Higher if the interest rate is compounded yearly rather than quarterly
 - D. GH¢1,200 no matter how the interest is computed
 - E. Don't Know
- 20. Suppose you had a GH¢100 in a savings account and the interest rate was 10 percent per year. After 1 years, how much do you think you would have in your account?**
- A. more than a GH¢110
 - B. exactly a GH¢110
 - C. less than a GH¢110
 - D. the same as your savings of GH¢100
 - E. don't know
- 21. You need to borrow some money. Which of these sources is likely to charge a higher interest on the loan**
- A. Borrowing from the SSNIT Student Loan Scheme.
 - B. Borrowing from the established Banks.
 - C. Borrowing from a private money lender
 - D. Borrowing from parents
 - E. Don't know.
- 22. An overdraft**
- A. occurs when you write a GH¢1,000 cedi cheque when you have GH¢500 in your account.
 - B. is a stop-payment order written by the payee.
 - C. will result in fines.
 - D. all of the above.
 - E. don't know
- 23. The MOST important factor that a lender/bank uses when deciding whether to approve a loan**
- A. Marital Status
 - B. Education and Occupation
 - C. Bill-paying record and income
 - D. Age and gender
 - E. Don't Know

IV. YOUR KNOWLEDGE OF INVESTMENTS

- 24. In Ghana, listed/issued shares are traded on the**
- A. Bank of Ghana
 - B. Ghana stock exchange
 - C. Securities and exchange commission
 - D. Ghana investment Market
 - E. Don't Know

- 25. Which of these is a short-term investment?**
A. Shares
B. Treasury Bills
C. Bonds
D. Mortgage
E. Don't Know
- 26. A type of professionally managed collective investment vehicle that pulls money from many investors to purchase securities is known as**
A. Stock fund
B. Bond fund
C. Mutual fund
D. Mortgage fund
E. Don't know
- 27. It is less likely to lose all your money if you invest in a single stock (shares) compared to investing the money in a wide range of stocks (shares).**
A. True
B. False
C. Don't Know
- 28. If an investment offers a very high return, it is likely to be of high risk.**
A. True
B. False
C. Don't Know
- 29. A high-risk and high-return investment strategy would be most suitable for**
A. an elderly retired couple living on a fixed income.
B. a middle-aged couple needing funds for their children's education in two years.
C. a young married couple without children.
D. all of the above because they all need high return.
E. none of the above because they are equally risk averse.

V. YOUR KNOWLEDGE OF INSURANCE

- 30. Car insurance companies determine your insurance premium based on**
A. age of the insured and driving record
B. record of accidents
C. type and age of vehicle
D. All of the above
E. don't know
- 31. The main reason to purchase insurance is to**
A. protect you from a loss recently incurred
B. provide you with excellent investment returns
C. protect you from sustaining a catastrophic loss
D. protect you from small incidental losses
E. don't know

32. Choose the type of insurance coverage that covers the replacement of a stolen car

- A. liability
- B. comprehensive
- C. collision
- D. third party
- E. don't know

33. Health insurance provides

- A. insurance against illness or bodily injury.
- B. insurance coverage for medicine and visits to the doctor
- C. insurance for hospital stays and other medical expenses.
- D. all of the above
- E. don't know

34. Life insurance products include the following EXCEPT

- A. Children welfare plan
- B. Funeral plan
- C. Retirement insurance plan
- D. Theft insurance plan
- E. Don't Know

35. A home made of wood will be more expensive to insure than a comparable brick structure.

- A. True
- B. False
- C. Don't Know

36. Third party insurance will

- A. cover your liability to others only.
- B. cover for damage to yourself.
- C. cover for damage to others and yourself
- D. cover damage to your vehicle.
- E. don't know

VI. YOUR PERSONAL FINANCE OPINIONS, DECISIONS AND PRACTICE

PERSONAL FINANCE OPINION - Tick as appropriate using ×

Using the scale **given below** please rank the importance of the items numbered from 38 to 42 to you.

A	B	C	D	E
Very Unimportant	Unimportant	Not Sure	Important	Very Important

Opinion	A	B	C	D	E
37. Maintaining adequate financial records					
38. Spending less than your income					
39. Maintaining adequate life insurance coverage					
40. Maintaining adequate non-life insurance coverage					
41. Planning and implementing a regular investment programme					

PERSONAL FINANCE DECISIONS

42. You have saved GHS 12,000 for your university expenses by working part time. Your plan is to start university next year and you will need all of the money you have saved. Which of the following is the safest place for your university money?

- A. locked in her wardrobe at home
- B. stocks
- C. corporate bond
- D. treasury bills
- E. none of the above

43. Many people put money aside to take care of unexpected expenses. If you want to put money aside for emergencies, in which of the following forms would it be of *LEAST* benefit to you if you needed it right away?

- A. invested in a down payment of the house
- B. current account
- C. stocks
- D. savings account
- E. treasury Bills

44. You have just graduated from university and found a job earning GH¢28,000 per year. You will pay GH¢600 per month for five years for student loans. What should you do to improve your financial health?

- A. Cut expenses and use your savings to pay down debt
- B. Keep the same spending pattern as in the past
- C. Apply for a consumer loan for a new car
- D. Eliminate debt by filing personal bankruptcy
- E. Use your earnings to pay for a holiday abroad

PERSONAL FINANCIAL MANAGEMENT PRACTICES - Tick as appropriate using
×

Practice	Never	Rarely	Often	Very Often	Always
45. I regularly set aside money each month for savings					
46. I set aside money for future needs/wants					
47. I compare prices when shopping for major expenses					
48. I use a spending plan or budget					
49. I always keep track of my expenditure and income					

VII. EXPOSURE TO FINANCIAL AND MONEATARY ISSUES

50. How do you finance your education?

Fully Self ☐ Fully Family ☐ Both Self and Family ☐ Scholarship/Sponsorship ☐

Others ☐ (specify).....

51. Which of the ten regions of Ghana have you lived most of your life? (If you are foreign student, please write foreign and ignore Q53).....

52. Have you lived MOST of your life in the Capital Town of the region in Q52 above?

Yes ☐ NO ☐

53. What is your housing arrangement in the university?

On-campus (Hall) ☐ Off-campus rent/hostel ☐ Off-campus own house ☐

Live with parents/relatives ☐ Others ☐ (specify).....

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

☐ None/Junior Secondary School or Middle School

☐ Senior High school or equivalent

☐ Training college, Nursing training college, Polytechnic or equivalent degree

☐ Bachelor's degree

☐ Masters, doctorate, or professional degree like medical doctor, veterinarian, or lawyer

☐ Other (specify).....

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

☐ None/Junior Secondary School/Middle School/below

☐ Senior High school or equivalent

☐ Training college, Nursing training college, Polytechnic or equivalent degree

☐ Bachelor's degree

☐ Masters, doctorate, or professional degree like medical doctor, veterinarian, or lawyer

☐ Other (specify):.....

56. What kind of financial accounts do you have? (Check all that apply)

None ☐ savings ☐ current account ☐ fixed deposit ☐ mutual fund ☐ stock ☐
bond ☐ Other(s) (specify):.....

57. Father's main occupation currently or before retirement

Unemployed ☐ Self Employed ☐ Employee of an organization/somebody ☐

58. Mother's main occupation currently or before retirement

Unemployed ☐ Self Employed ☐ Employee of an organization/somebody ☐

59. How often did your family (parents/guardian) discuss finances in the house?

Never ☐ Rarely ☐ Often ☐ Very Often ☐ Always ☐

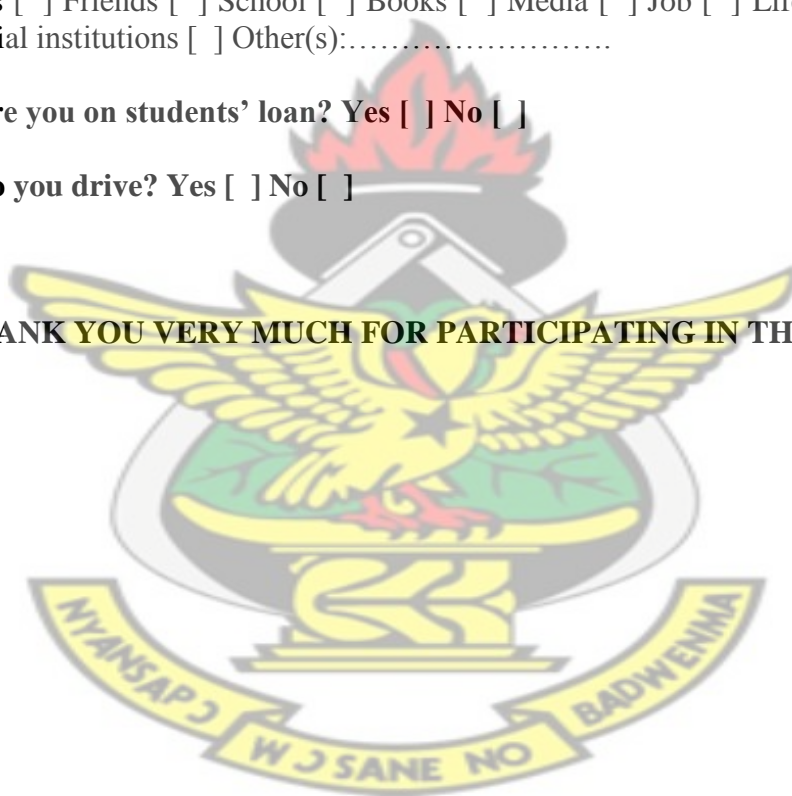
60. Where do you like to learn/increase your financial knowledge? (check all that apply)

Parents ☐ Friends ☐ School ☐ Books ☐ Media ☐ Job ☐ Life experience ☐
Financial institutions ☐ Other(s):.....

61. Are you on students' loan? Yes ☐ No ☐

62. Do you drive? Yes ☐ No ☐

THANK YOU VERY MUCH FOR PARTICIPATING IN THIS SURVEY



APPENDIX 2 - LIST OF PRIVATE UNIVERSITIES

NAME

Advanced Business College
African University of Communication
All Nations University College
Ashesi University College
Bluecrest College
Catholic Institute of Business and Technology
Catholic University College
Central University College
Christian Service College
Entrepreneurship Training Institute
Evangelical Presbyterian University College
Garden City University College
Ghana Baptist University College
Ghana Christian University College
Ghana Telecom University College
Good news Theological Seminary
Islamic University College
Jayee University College
Methodist University College
Pan African University College
Pentecost University College
Presbyterian University College
Regent University College of Science and Technology
Spiritan University College
University College of Agriculture and Environmental Studies
University College of Management Studies
Wisconsin International University College, Ghana
Zenith University College

APPENDIX 3 - CORRELATION MATRIX

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	RANK1	1.000															
2	RANK2	-.734**	1.000														
3	SHSSTUDY1	.018	-.026	1.000													
4	SHSSTUDY2	-.073**	-.035*	-.426**	1.000												
5	ACCOUNTING	.049**	-.136**	.048**	.424**	1.000											
6	UNISTUDY	-.003	-.064**	.052**	.528**	.716**	1.000										
7	MALE	-.049**	-.035*	-.037**	.008	-.049**	-.003	1.000									
8	EXPERIENCE1	.398**	-.210**	.026*	-.084**	-.017	-.051**	-.097**	1.000								
9	EXPERIENCE2	-.051**	.111**	-.021	-.043**	-.088**	-.073**	-.035**	-.489**	1.000							
10	AGE1	.514**	-.355**	.019	-.082**	.042**	-.055**	-.160**	.362**	-.040**	1.000						
11	AGE2	-.071**	.225**	-.014	-.077**	-.143**	-.075**	-.012	.061**	.246**	-.494**	1.000					
12	AGE3	-.266**	.042**	-.008	.082**	.058**	.057**	.114**	-.250**	-.094**	-.247**	-.472**	1.000				
13	INCOME1	.205**	-.031*	.013	-.134**	-.094**	-.093**	-.036**	.233**	.059**	.177**	.129**	-.157**	1.000			
14	INCOME2	-.087**	.069**	-.009	.047**	.032*	.040**	.003	-.087**	-.010	-.080**	-.020	.061**	-.614**	1.000		
15	FATHERSCH1	-.002	.046**	.004	-.066**	-.076**	-.039**	.100**	-.037*	-.019	-.082**	-.004	.017	.092**	-.004	1.000	
16	MOTHSCH1	-.055**	.078**	-.006	-.053**	-.081**	-.046**	.109**	-.067**	-.019	-.116**	-.011	.039**	.061**	.020	.510**	1.000
17	FATHERSCH2	-.053**	.039**	-.011	-.001	-.002	-.004	-.033**	-.042**	.007	-.037**	-.002	.035*	-.035*	.031*	-.451**	-.120**
18	MOTHSCH2	.027*	-.050**	.017	.009	.037*	.032*	-.050**	.024	.010	.047**	.007	.000	-.022	.004	-.258**	-.710**
19	FATHOCC	.016	.013	.033*	.015	.038**	.044**	.061**	-.004	-.028*	-.055**	.014	.011	.031*	-.004	.128**	.098**
20	MOTHOCC	.023	-.006	.024	.017	.009	.033*	.031*	.000	-.038**	-.028*	-.030*	.014	.014	.012	.079**	.127**
21	FATHOCC1	.012	.004	-.003	-.042**	-.032*	-.039**	.035*	-.010	-.016	-.003	-.024	.003	.016	.007	.301**	.112**
22	MOTHOCC1	-.016	.028*	-.024	-.037**	-.051**	-.053**	.026*	.005	.006	-.031*	.034*	-.012	.027*	.002	.195**	.226**
23	DISCUSFINAN2	.024	-.013	.015	.016	.024	.028*	.047**	.020	-.025	-.018	-.030*	.016	.001	.005	.065**	.078**
24	DRIVE	.089**	.065**	-.006	-.083**	-.026	-.019	-.125**	.094**	.041**	.083**	.054**	-.071**	.162**	.000	.221**	.219**
25	CAPITALTOWN	.032*	.013	.001	.017	.007	.013	.062**	.028*	-.036*	-.006	-.018	.019	-.009	.029*	.071**	.065**
26	HOUSE1	.188**	-.105**	.015	-.055**	.017	.014	-.050**	.102**	.031*	.193**	-.015	-.114**	.065**	-.013	.026	.001
27	HOUSE2	-.135**	.117**	-.021	.038**	-.030*	.001	.041**	-.033*	.021	-.130**	.076**	.054**	-.019	.021	.014	.009
28	HOUSE3	.007	-.038**	.021	-.034*	-.015	-.024	.004	-.039**	-.008	-.004	-.019	.031*	-.008	-.009	.012	.008
29	EDUCFINAN1	.185**	-.021	.018	-.088**	-.073**	-.079**	-.141**	.261**	.161**	.225**	.217**	-.249**	.194**	-.069**	-.083**	-.117**
30	EDUCFINAN2	-.029*	-.042**	-.022	.031*	.021	.035*	.075**	-.104**	-.005	-.092**	-.015	.117**	-.023	.002	.046**	.016
31	EDUCFINAN3	-.029*	-.005	-.010	.035*	.015	.026	-.002	-.040**	-.027*	-.039**	-.021	.011	-.049**	.040**	.020	.049**
32	PERSONALAC	.099**	-.045**	-.012	-.019	-.017	-.008	-.009	.083**	.007	.111**	-.004	-.039**	.074**	-.030*	-.009	-.052**
33	INVESTACCOUNT	.098**	.003	-.007	-.035*	-.007	-.010	-.011	.125**	.070**	.081**	.079**	-.057**	.113**	.001	.005	.054**

*, **, *** - Correlation is significant at the 0.10, 0.05 and 0.01 level

Continuation of Correlation matrix

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1 RANK1																	
2 RANK2																	
3 SHSSTUDY1																	
4 SHSSTUDY2																	
5 ACCOUNTING																	
6 UNISTUDY																	
7 MALE																	
8 EXPERIENCE1																	
9 EXPERIENCE2																	
10 AGE1																	
11 AGE2																	
12 AGE3																	
13 INCOME1																	
14 INCOME2																	
15 FATHERSCH1																	
16 MOTHSC1																	
17 FATHERSCH2	1.000																
18 MOTHSC2	.213**	1.000															
19 FATHOCC	-.040**	-.049**	1.000														
20 MOTHOCC	.031*	-.060**	.396**	1.000													
21 FATHOCC1	-.095**	-.061**	-.298**	-.084**	1.000												
22 MOTHOCC1	-.038**	-.039**	-.181**	-.510**	.278**	1.000											
23 DISCUSFINAN2	-.033*	-.059**	.111**	.130**	-.015	-.037**	1.000										
24 DRIVE	.041**	-.067**	.012	.010	.062**	.083**	.019	1.000									
25 CAPITALTOWN	-.045**	-.088**	.051**	.025	.042**	-.015	.019	.076**	1.000								
26 HOUSE1	-.029*	.004	.022	.002	.016	.026*	.035*	.098**	-.041**	1.000							
27 HOUSE2	.015	.020	-.008	-.011	-.001	.012	-.019	.000	.068**	-.721**	1.000						
28 HOUSE3	-.005	-.002	-.025	-.003	.014	-.005	-.007	.006	-.093**	-.176**	-.232**	1.000					
29 EDUCFINAN1	.002	.072**	-.094**	-.047**	-.003	.011	-.044**	.112**	-.044**	.116**	-.015	-.008	1.000				
30 EDUCFINAN2	-.003	-.002	.021	-.036*	.003	.025	-.013	-.045**	.009	-.034*	.007	.028*	-.566**	1.000			
31 EDUCFINAN3	-.020	-.048**	.017	-.002	.000	.012	.025	-.012	.017	-.020	.013	-.011	-.224**	-.084**	1.000		
32 PERSONALAC	-.009	.021	.048**	.113**	-.003	-.088**	.037*	.005	.044**	.019	-.081**	.009	.043**	-.042**	-.005	1.000	
33 INVESTACCOUNT	-.018	-.023	-.010	.029*	-.013	.005	.022	.112**	-.002	.042**	.003	-.014	.137**	-.066**	-.047**	-.083**	1.000

*, **, ***, - Correlation is significant at the 0.10, 0.05 and 0.01 level

APPENDIX 4 - VARIANCE INFLATION FACTOR

Variable	VIF	SQRT VIF	Tolerance	R-Squared
Rank1	3.39	1.84	0.2948	0.7052
Rank2	2.66	1.63	0.3753	0.6247
Shsstudy1	1.43	1.20	0.6974	0.3026
Shsstudy2	2.05	1.43	0.4888	0.5112
Accounting	2.17	1.47	0.4608	0.5392
Unistudy	2.56	1.60	0.3902	0.6098
Male	1.10	1.05	0.9088	0.0912
Experience1	2.42	1.55	0.4139	0.5861
Experience2	1.98	1.41	0.5047	0.4953
Age1	4.30	2.07	0.2328	0.7672
Age2	4.39	2.10	0.2277	0.7723
Age3	2.32	1.52	0.4302	0.5698
Income1	1.98	1.41	0.5041	0.4959
Income2	1.70	1.30	0.5883	0.4117
Fathersch1	2.20	1.48	0.4553	0.5447
Fathersch2	1.46	1.21	0.6839	0.3161
Mothsch1	3.47	1.86	0.2884	0.7116
Mothsch2	2.47	1.57	0.4053	0.5947
Fathocc	1.40	1.18	0.7140	0.2860
Fathocc1	1.36	1.17	0.7337	0.2663
Mothocc	1.80	1.34	0.5552	0.4448
Mothocc1	1.76	1.33	0.5682	0.4318
Discusfinan2	1.04	1.02	0.9638	0.0362
Drive	1.24	1.11	0.8083	0.1917
Capitaltown	1.05	1.02	0.9532	0.0468
House1	3.15	1.77	0.3179	0.6821
House2	3.11	1.76	0.3215	0.6785
House3	1.49	1.22	0.6732	0.3268
Educfinan1	2.34	1.53	0.4271	0.5729
Educfinan2	1.75	1.32	0.5706	0.4294
Educfinan3	1.15	1.07	0.8673	0.1327
Personalac	1.08	1.04	0.9284	0.0716
Investaccount	1.09	1.04	0.9171	0.0829
Mean VIF	2.09			

APPENDIX 5 - GENDER DON'T KNOW TABLE

General Finance Knowledge	Gender	Correct	Incorrect	Don't Know	Chi-square	P-value
<i>Personal finance literacy</i>	Male	50.3%	44.7%	5.0%	2.281	0.320
	Female	51.4%	42.8%	5.9%		
<i>Personal financial planning</i>	Male	50.1%	45.0%	4.9%	4.059	0.131
	Female	50.6%	43.1%	6.2%		
<i>Personal budget</i>	Male	44.1%	53.1%	2.9%	3.788	0.150
	Female	41.5%	54.8%	3.6%		
<i>Asset liquidity</i>	Male	65.8%	25.0%	9.2%	24.386	0.000
	Female	61.6%	24.1%	14.3%		
<i>Net asset value</i>	Male	45.1%	40.4%	14.5%	57.132	0.000
	Female	35.9%	41.1%	23.0%		
<i>Savings interest rate</i>	Male	56.9%	23.6%	19.4%	52.519	0.000
	Female	48.1%	22.6%	29.2%		
Savings and Borrowing Knowledge	Gender	Correct	Incorrect	Don't Know	Chi-square	P-value
<i>Higher interest paying account</i>	Male	68.5%	24.4%	7.1%	58.728	0.000
	Female	56.8%	31.8%	11.4%		
<i>Loan guarantee</i>	Male	86.8%	8.1%	5.1%	6.535	0.038
	Female	84.9%	8.1%	7.1%		
<i>Compound interest</i>	Male	34.1%	47.6%	18.3%	61.684	0.000
	Female	28.4%	42.7%	28.9%		
<i>Simple interest</i>	Male	65.2%	22.9%	11.8%	34.468	0.000
	Female	56.6%	26.2%	17.1%		
<i>High borrowing source</i>	Male	52.9%	37.7%	9.4%	19.997	0.000
	Female	45.8%	42.1%	12.0%		
<i>Overdraft</i>	Male	69.8%	16.5%	13.7%	28.589	0.000
	Female	65.0%	14.9%	20.1%		
<i>Most important lending factor</i>	Male	65.6%	25.7%	8.7%	3.232	0.199
	Female	64.3%	25.3%	10.4%		
Investment Knowledge	Gender	Correct	Incorrect	Don't Know	Chi-square	P-value
<i>Security trading</i>	Male	66.7%	17.2%	16.2%	50.283	0.000
	Female	56.0%	20.2%	23.9%		
<i>Short term investment</i>	Male	50.4%	32.1%	17.6%	32.919	0.000
	Female	41.8%	34.6%	23.5%		
<i>Mutual fund</i>	Male	27.9%	41.5%	30.5%	44.636	0.000
	Female	20.2%	40.2%	39.5%		
<i>Diversification</i>	Male	33.7%	47.7%	18.5%	18.544	0.000
	Female	34.8%	41.8%	23.5%		
<i>Risk-return</i>	Male	69.1%	18.1%	12.8%	29.530	0.000
	Female	62.4%	18.6%	19.0%		
<i>High risk investment</i>	Male	20.7%	73.9%	5.4%	19.128	0.000
	Female	20.8%	70.2%	9.0%		

APPENDIX 5 CONTINUED

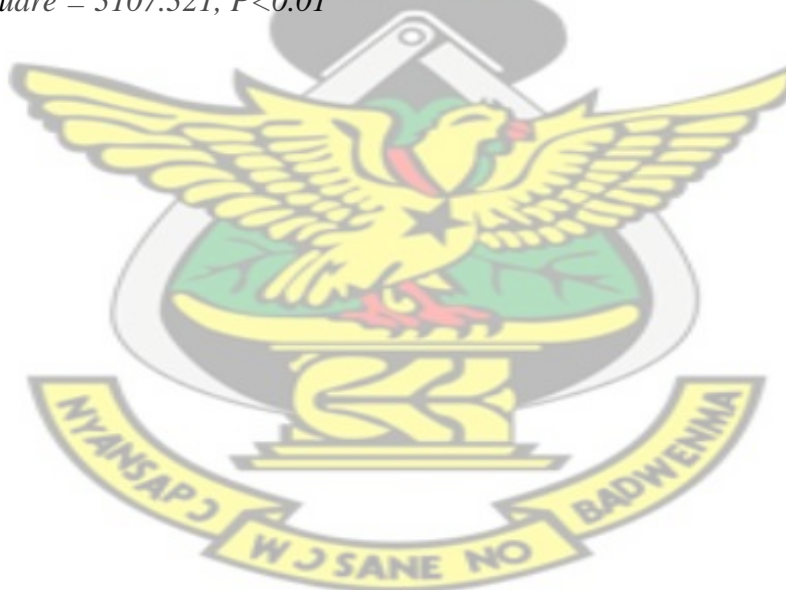
Insurance Knowledge	Gender	Correct	Incorrect	Don't Know	Chi-square	P-value
<i>Car insurance premium</i>	Male	28.0%	54.8%	17.3%	21.394	0.000
	Female	26.3%	50.5%	23.3%		
<i>Reason to buy insurance</i>	Male	53.5%	35.3%	11.2%	21.727	0.000
	Female	47.8%	36.4%	15.9%		
<i>Comprehensive insurance</i>	Male	43.8%	27.6%	28.7%	60.622	0.000
	Female	31.6%	31.3%	37.1%		
<i>Health insurance</i>	Male	38.9%	52.5%	8.6%	7.674	0.022
	Female	38.3%	50.4%	11.3%		
<i>Life insurance</i>	Male	47.7%	36.1%	16.2%	4.707	0.095
	Female	45.3%	35.9%	18.7%		
<i>Home made of wood insurance</i>	Male	55.3%	31.0%	13.7%	70.022	0.000
	Female	41.7%	39.0%	19.3%		
<i>Third party insurance</i>	Male	34.0%	39.7%	26.4%	14.782	0.001
	Female	29.1%	39.7%	31.2%		



APPENDIX 6 - AGE * WORK EXPERIENCE CROSSTABULATION

			Work Experience					Total
			None	Less than 2 years	Two to less than 4 years	Four to less than 6 years	Six years or more	
Age	Up to 20	Count	550	224	25	3	6	808
		%	68.1%	27.7%	3.1%	.4%	.7%	100%
	21 - 25	Count	712	824	306	43	19	1904
		%	37.4%	43.3%	16.1%	2.3%	1.0%	100%
	26 - 30	Count	74	168	257	176	71	746
		%	9.9%	22.5%	34.5%	23.6%	9.5%	100%
	31 - 40	Count	11	18	43	74	258	404
		%	2.7%	4.5%	10.6%	18.3%	63.9%	100%
	41 and above	Count	1	0	4	4	48	57
		%	1.8%	0.0%	7.0%	7.0%	84.2%	100%
Total		Count	1348	1234	635	300	402	3919
		%	34.4%	31.5%	16.2%	7.7%	10.3%	100%

Chi-Square = 3107.321, $P < 0.01$



APPENDIX 7 - AGE * FINANCING OF EDUCATION CROSSTABULATION

			How do you finance your education				Total
			Fully Self	Fully Family	Both Self & Family	Scholarship/ sponsorship	
Age	Up to 20	Count	40	662	85	15	802
		%	5.0%	82.5%	10.6%	1.9%	100.0%
	21 – 25	Count	126	1361	321	54	1862
		%	6.8%	73.1%	17.2%	2.9%	100.0%
	26 – 30	Count	249	264	199	27	739
		%	33.7%	35.7%	26.9%	3.7%	100.0%
	31 – 40	Count	237	72	70	25	404
		%	58.7%	17.8%	17.3%	6.2%	100.0%
	41 and above	Count	31	12	8	5	56
		%	55.4%	21.4%	14.3%	8.9%	100.0%
Total		Count	683	2371	683	126	3863
		%	17.7%	61.4%	17.7%	3.3%	100.0%

Chi-Square = 1134.370, P<0.01



APPENDIX 8 - DIFFERENCE IN MEANS (EXPOSURE VARIABLES)

	General Knowledge	Savings & Borrowing	Insurance	Investment	For The Study
A. Family Characteristics					
1. Mother's Occupation					
Employee vs Self employed	1.27	-1.87*	0.02	1.30	0.18
Self-employed vs Unemployed	2.35*	1.67	3.73***	2.99***	2.69***
2. Father's Occupation					
Employee vs Self employed	3.23***	2.15**	3.48***	2.90***	2.94***
Self-employed vs Unemployed	0.62	1.54	2.11	0.28	1.14
3. Mother's level of schooling					
Masters vs Bachelors degree	1.82	-0.63	0.25	-4.61**	-0.79
Bachelors degree vs training college	-4.87***	-5.44***	-5.57***	-0.96	-4.21***
Training college vs SHS/Equivalent	1.34	0.51	1.10	2.70**	1.41
SHS/Equivalent vs None/JHS/MSLC	-3.29***	-4.26***	-0.99	-1.38	-2.48***
4. Father's level of Schooling					
Masters vs Bachelors degree	0.97	-2.23	1.72	-0.89	-0.11
Bachelors degree vs training college	-3.14**	-3.39***	-3.32***	-1.63	-2.87***
Training college vs SHS/Equivalent	2.09	2.17	2.11	2.67**	2.26**
SHS/Equivalent vs None/JHS/MSLC	-2.14	2.89**	-1.34	-0.70	-1.77*
B. Area Lived, Funding for Education and Driving Experience					
1. Lived in capital town					
Yes vs No	3.20***	3.14***	5.14***	5.16***	4.16***
2. Financing Education					
Scholarship vs Both self & family	2.47	-0.43	0.97	-2.35	0.17
Both self & family vs Fully family	2.53**	2.68**	5.07***	3.95***	3.56***
Fully family vs fully self	-4.49***	-6.83***	-7.31***	-6.09***	-6.18***
3. Do you Drive					
Yes vs No	1.29	0.93	4.06***	3.62***	2.48***
C. Financial Market Participation					
1. Personal Account					
Yes vs No	-5.49***	-6.31***	-3.63***	4.62***	-5.01***
2. Investment Account					
Yes vs No	-4.32***	-5.02***	-6.71***	-8.89***	-6.24***

* $P < 0.1$, ** $P < 0.05$ and *** $P < 0.01$

APPENDIX 9 - EXPANDED MODELS

$$\log\left(\frac{P}{1-P}\right) = \beta_1 + \beta_2(\text{Rank1}) + \beta_3(\text{Rank2}) + \beta_4(\text{Shsstudy1}) + \beta_5(\text{Shsstudy2}) + \beta_6(\text{Accounting}) + \beta_7(\text{Unistudy}) + \beta_8(\text{Male}) + \beta_9(\text{Experience1}) + \beta_{10}(\text{Experience2}) + \beta_{11}(\text{Age1}) + \beta_{12}(\text{Age2}) + \beta_{13}(\text{Age3}) + \beta_{14}(\text{Income1}) + \beta_{15}(\text{Income2}) + \varepsilon \dots\dots\dots (1)$$

$$\log\left(\frac{P}{1-P}\right) = \beta_1 + \beta_2(\text{Rank1}) + \beta_3(\text{Rank2}) + \beta_4(\text{Shsstudy1}) + \beta_5(\text{Shsstudy2}) + \beta_6(\text{Accounting}) + \beta_7(\text{Unistudy}) + \beta_8(\text{Male}) + \beta_9(\text{Experience1}) + \beta_{10}(\text{Experience2}) + \beta_{11}(\text{Age1}) + \beta_{12}(\text{Age2}) + \beta_{13}(\text{Age3}) + \beta_{14}(\text{Income1}) + \beta_{15}(\text{Income2}) + \beta_{16}(\text{Fathersch1}) + \beta_{17}(\text{Fathersch2}) + \beta_{18}(\text{Mothsch1}) + \beta_{19}(\text{Mothsch2}) + \beta_{20}(\text{Fathocc}) + \beta_{21}(\text{Fathocc1}) + \beta_{22}(\text{Mothocc}) + \beta_{23}(\text{Mothocc1}) + \beta_{24}(\text{Discusfinan2}) + \beta_{25}(\text{Drive}) + \varepsilon \dots\dots\dots (2)$$

$$\log\left(\frac{P}{1-P}\right) = \beta_1 + \beta_2(\text{Rank1}) + \beta_3(\text{Rank2}) + \beta_4(\text{Shsstudy1}) + \beta_5(\text{Shsstudy2}) + \beta_6(\text{Accounting}) + \beta_7(\text{Unistudy}) + \beta_8(\text{Male}) + \beta_9(\text{Experience1}) + \beta_{10}(\text{Experience2}) + \beta_{11}(\text{Age1}) + \beta_{12}(\text{Age2}) + \beta_{13}(\text{Age3}) + \beta_{14}(\text{Income1}) + \beta_{15}(\text{Income2}) + \beta_{16}(\text{Fathersch1}) + \beta_{17}(\text{Fathersch2}) + \beta_{18}(\text{Mothsch1}) + \beta_{19}(\text{Mothsch2}) + \beta_{20}(\text{Fathocc}) + \beta_{21}(\text{Fathocc1}) + \beta_{22}(\text{Mothocc}) + \beta_{23}(\text{Mothocc1}) + \beta_{24}(\text{Discusfinan2}) + \beta_{25}(\text{Drive}) + \beta_{26}(\text{Capitaltown}) + \beta_{27}(\text{House1}) + \beta_{28}(\text{House2}) + \beta_{29}(\text{House3}) + \beta_{30}(\text{Educfinan1}) + \beta_{31}(\text{Educfinan2}) + \beta_{32}(\text{Educfinan3}) + \varepsilon \dots\dots\dots (3)$$

$$\log\left(\frac{P}{1-P}\right) = \beta_1 + \beta_2(\text{Rank1}) + \beta_3(\text{Rank2}) + \beta_4(\text{Shsstudy1}) + \beta_5(\text{Shsstudy2}) + \beta_6(\text{Accounting}) + \beta_7(\text{Unistudy}) + \beta_8(\text{Male}) + \beta_9(\text{Experience1}) + \beta_{10}(\text{Experience2}) + \beta_{11}(\text{Age1}) + \beta_{12}(\text{Age2}) + \beta_{13}(\text{Age3}) + \beta_{14}(\text{Income1}) + \beta_{15}(\text{Income2}) + \beta_{16}(\text{Fathersch1}) + \beta_{17}(\text{Fathersch2}) + \beta_{18}(\text{Mothsch1}) + \beta_{19}(\text{Mothsch2}) + \beta_{20}(\text{Fathocc}) + \beta_{21}(\text{Fathocc1}) + \beta_{22}(\text{Mothocc}) + \beta_{23}(\text{Mothocc1}) + \beta_{24}(\text{Discusfinan2}) + \beta_{25}(\text{Drive}) + \beta_{26}(\text{Capitaltown}) + \beta_{27}(\text{House1}) + \beta_{28}(\text{House2}) + \beta_{29}(\text{House3}) + \beta_{30}(\text{Educfinan1}) + \beta_{31}(\text{Educfinan2}) + \beta_{32}(\text{Educfinan3}) + \beta_{33}(\text{Personalac}) + \beta_{34}(\text{Investaccount}) + \varepsilon \dots\dots\dots (4)$$