

UNIVERSITY OF CAPE COAST

FINANCIAL LITERACY AMONG PUBLIC SECTOR WORKERS IN THE
CAPE COAST METROPOLIS

BY

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DECLARATION

Candidates' Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature Date

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Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of the thesis laid down by the University of Cape Coast.

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ABSTRACT

Financial literacy among public sector workers is important following the large number of people in the sector and the many personal financial responsibilities they often assume in their homes and workplaces. The study assessed the level of financial literacy, factors influencing financial literacy, and level of application of financial literacy among public sector workers in the Cape Coast Metropolis.

Cross-sectional and descriptive study designs were employed for the study. A total of 375 respondents were sampled from a population of 13,163. A multi-stage sampling procedure was used to sample the respondents. Statistical Product and Service Solutions version 15 was used to process the data. Frequencies, percentages, regression and ANOVA were used to analyse the data.

The study found that public sector workers with different socio-demographic characteristics had different levels of financial literacy. Level of education, experience and exposure to finance had significant influence to variations in the levels of financial literacy among public sector workers in the Metropolis. The existing posture of the financial sector is unable to provide the necessary financial information, opportunities and services to public workers with different levels of financial literacy. The study recommends that the Metropolitan branch of the Public Sector Workers Union in collaboration with financial institutions in the Metropolis should educate public sector workers on financial products and opportunities and financial concepts. The study suggests that financial institutions in the Metropolis should develop more financial opportunities for people in different socio-economic classes.

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DEDICATION

To my dear wife, Millicent Maame Ekua Mintah, and my lovely daughters,
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LIST OF ACRONYMS

CCMA	Cape Coast Metropolitan Assembly
CWSA	Community Water and Sanitation Agency
ECG	Electricity Company of Ghana Limited
GES	Ghana Education Service
GHS	Ghana Health Service
GIZ	German International Cooperation
GPCL	Ghana Post Company Limited
GWCL	Ghana Water Company Limited
NLSY	National Longitudinal Survey of Youth
OECD	Organisation for Economic Co-operation and Development
PACFL	President's Advisory Council on Financial Literacy
SHARE	Survey of Health, Ageing and Retirement in Europe
SHS	Senior High School

CHAPTER ONE

INTRODUCTION

Background to the study

Across the world, the public sector is considered a major employer, provider of services in the economy and consumers of a chunk of the consumer tax resources. Public sector activities range from delivering social security, administering urban planning and organising national defence. The role and scope of the public sector which is also referred to as the state sector or government sector are often the biggest division in an economy (Stevens & Teggemann, 2004). According to Bernheim and Garrett (2003), public sector workers are the main agents in the management and implementation of government policies and projects. Since the management and implementation of almost every project has financial implications, Capuano and Ramsay (2011) posited that the levels of financial literacy of public sector workers are very critical to the effective management and implementation of public policies and projects.

According to Duflo and Saez (2002), in as much as high financial literacy level among public sector workers is essential for the delivery of government projects, it is also critical for the management of standard of living of such workers and their dependants. Thus, financial literacy affects an individual's or family's day-to-day money management and ability to save for long-term goals of buying a home, seeking higher education, or financing personal retirement (Goldsmith & Goldsmith, 2006). According to Lusardi, Mitchell and Curto (2010), financially illiterate households make poor choices

that affect not only the decision-makers themselves, but also their families and the public at large, making the improvement of financial literacy a first-order concern for public policy.

Ineffective money management can also result in behaviours that make consumers vulnerable to severe financial crises. Bucher-Koenen and Lusardi (2010) observe that money problem behaviours included over-indebtedness, overspending, unwise use of credit, poor savings, bad spending decisions, poor money management and inadequacy of money to make ends meet. Financial problems resulting from poor personal financial management is believed to affect individual productivity at the workplace. Lusardi and Mitchell (2011a) link ignorance about basic financial concepts to lack of retirement planning, lack of participation in the stock market and poor borrowing behaviour.

From a broader perspective, Lusardi and Mitchell (2011a) indicate that market operations and competitive forces are compromised when consumers do not have the skills to manage their finances effectively, while informed participants help to create a more competitive and efficient market. Efforts to improve financial literacy which has been considered an essential factor in promoting and sustaining growth and development are now supported by a wide array of organisations. These organisations include private employers, state and local government agencies, commercial banks, consumer groups, community service organisations, and religious organisations. Innovative efforts are under way to help public sector workers to improve management of their assets by building knowledge of key financial concepts and developing skills to make informed financial decisions.

As concerns about financial literacy has increased, so have the number and variety of financial literacy training programmes and programme providers with some offering comprehensive information on savings, credit, and similar topics for a broad audience and others tailored to a specific group, such as youth or military personnel, or focused on a specific goal, such as home ownership or savings. According to Holzmann (2010), measuring the level of knowledge and understanding of the population as well as assessing their behaviours with regard to finance is fundamental in order to identify potential needs and gaps in relation to specific aspects of financial literacy.

Abreu and Mendes (2010) indicate that no one is completely ignorant of issues about finance. However, the degree of knowledge individuals have makes a difference between people who make wise decisions, maximising the gains in their financial or commercial dealings, and those who maximise losses. There are many factors that are likely to affect the level of an individual's financial literacy. Gustman, Steinmeier and Tabatabai (2012) believe that a person's level of literacy in finance is not necessarily proportionate to the person's background characteristics such as the level of income or formal education. Having sufficient knowledge on financial management either through formal or informal means is therefore important. Huston (2010) argues that lack of arithmetic skills will certainly impact financial literacy measures.

Financial Literacy is the ability to make informed judgments and to take effective actions regarding the current and future use and management of money (Lusardi et al., 2010). It includes the ability to understand financial choices. It is aimed at improving knowledge and skills in budgeting, savings,

debt management, use of bank services and financial negotiations. The idea behind efforts to improve financial literacy is that it helps households to make better-informed choices in their demand for sound financial services, which in turn are believed to increase their wellbeing.

Interested groups are concerned that consumers lack a working knowledge of financial concepts and do not have the tools they need to make decisions most advantageous to their economic wellbeing. Such 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 buying a home, seeking higher education or financing retirement. According to Cohen and Nelson (2011), financially illiterate households make poor choices that affect not only the decision-makers themselves, but also their families and the public at large, making the improvement of financial literacy a first-order concern for public policy.

Governments around the world, including Ghana have expressed concerns about the low level of financial literacy amongst their citizens, especially public sector workers who contribute immensely to the development of the nation (Atia, 2012; Organisation for Economic Co-operation & Development [OECD], 2012). The potential magnitude of the consequences of a lack of financial literacy has been further demonstrated by the global financial crisis of 2008, which saw thousands of employees of mortgage and investment companies in the United States of America and Europe losing their jobs. Such lack of financial literacy has been widely acknowledged as an aggravating factor of the financial crisis.

The story is not different in Ghana whose public sector has the largest number of employees in the formal sector in the country. Public-sector wages and salaries also constitute a major chunk of total public-sector expenditure (Boachie-Danquah, 2006). According to the Ghana Statistical Service (2012), 740,000 workers are found in the public sector. For these reasons, the impact of productivity of Ghana's public sector cannot be undermined.

The proliferation of financial institutions, especially non-banking financial institutions such as the MT Financial Services Limited, Bayport Financial Services Limited, IFS Finance and Leasing Company Limited, Multi Credit Limited and Boabab Financial Services Limited, in Ghana in the past few years and the aggressive marketing strategies they adopt to attract clients make financial literacy an urgent task among public sector workers. The public sector workers are the major targets for most instant loans by the financial institutions because of the greater security of repayment that is associated with the sector workers.

Stakeholders like private employers, state and local government agencies and commercial banks are concerned that consumers lack a working knowledge of financial concepts and do not have the tools they need to make decisions most advantageous to their economic wellbeing (Atia, 2012). Financial decisions are particularly vexing to many of today's families and business people as well. Perhaps the confusion has arisen because of the speed at which financial markets and new financial instruments have emerged, or because of the higher levels of sophistication and the longer time horizons required for sound financial decisions. Such financial literacy deficiencies can affect financial decision making.

A likely trend of huge indebtedness by individuals to financial institutions could emerge in Ghana as financial institutions pursue workers with loan officers these days. Kunateh (2009) reports that financial literacy level is generally low in Ghana, with 38, 44 and 51 percent in the northern, middle and Southern belts, respectively. It is therefore important for society to be enlightened on what financing opportunities exist for them to access and invest in their businesses, pay their school fees or acquire assets. It is also important for them to know what benefits exist in depositing their money with financial institutions instead of keeping it in their homes where they will be vulnerable to theft, fire or unplanned spending. Finally, it is helpful for people to know what insurance is about and appreciate the benefits of it.

The Cape Coast Metropolis is the capital of the Central region of Ghana. The Metropolis hosts the regional and district offices of many public sector institutions. The public sector institutions in the Metropolis comprise workers in the civil service (education, health, Ministries, departments, and local government), state-owned-enterprise sector (Ghana Post Company Limited, Community Water and Sanitation Agency, Electricity Company of Ghana Limited, Ghana Water Company Limited, and Ghana Broadcasting Corporation) and hybrid sector (public universities and polytechnics).

Considering the critical relationship between financial literacy of public sector workers and the effective management and implementation of public policies and projects, the study adopted the Cape Coast Metropolis to examine the level of financial literacy among the public sector workers. Thus, the study aimed at examining whether differences in the level of financial literacy in the Cape Coast Metropolis can be entirely attributed to variations in

individual characteristics like income and education, or if institutional factors have any role in the level of financial literacy among public sector workers in the Metropolis. It is expected that such information would enable the government to know the calibre of persons to be engaged in the public sector to ensure effective delivery of public institutions.

Statement of the problem

Financial literacy among public sector workers is important following the large number of people in the sector and the many personal financial responsibilities they often assume in their homes and workplaces. Public service workers must manage their household budgets subject to income constraints, buy goods and services, use financial accounts, save and invest for a future event such as a child's education or retirement, pay taxes and seek sound financial advice.

The need for better informed and financially literate consumers in Ghana has been prompted by the proliferation of banking and non-banking financial institutions as well as complex financial products in the market and the advent of electronic and internet banking (Kunateh, 2009). The financial service industry has become increasingly complex and continues to change, revolutionising the financial markets. Within this framework, experts recognise the importance of consumer finance and understand that basic finance relationships are key to modern financial security. Kunateh further reports that public sector workers are the main target of financial institutions which have resorted to giving them instant loans as a strategy to reduce poverty levels in Ghana.

Although no one is completely ignorant of issues about finance, Atia (2012) points out that there is generally a low level of financial literacy among people in Ghana and most adults do not possess the basic knowledge needed to make good financial choices. Meanwhile, individuals' decisions and subsequent actions flow from their understanding of the surroundings in which they operate. The consequences of not knowing even the basics about household financial matters can prove to be costly for people as they make financial decisions for the short-term or the long-term. Atia continues that the degree of knowledge individuals have makes a difference between one who makes wise decisions, maximising the gains in his or her financial/commercial dealings, and another who maximises losses.

In order to facilitate economic and financial sustainability, individuals need the cognitive ability to understand financial information in the context of these surroundings. Jappelli (2010) advises that education is needed for financially literate, knowledgeable and informed public sector workers. The elevation of Cape Coast Municipality to a Metropolitan status has attracted a number of financial institutions with various financial products and services. Many of such financial institutions and their products are targeted at public sector workers with regular and reliable source of income. This raises a lot of questions about the level of financial literacy among the public sector workers to make right decisions to consume such products. This study therefore sought to examine the level of financial literacy among public sector workers and how the knowledge translates into their financial behaviours.

Objectives of the study

The general objective will be to examine the levels of financial literacy and its application among public sector workers in the Cape Coast Metropolis.

The specific objectives are to:

1. assess the level of financial literacy among public sector workers.
2. explore the factors that influence financial literacy among public sector workers.
3. examine the level of application of financial literacy among public sector workers in the Cape Coast Metropolis.
4. recommend appropriate ways to improve financial literacy among public sector workers in the Cape Coast Metropolis.

Research questions

The study seeks to address the following questions:

1. What is the level of financial literacy among public sector workers?
2. Which factors influence financial literacy among public sector workers?
3. What is the level of application of financial literacy among public sector workers in the Cape Coast Metropolis?

Scope of the study

The study will be delimited to the examination of levels of financial literacy and its application among public sector workers in the Cape Coast Metropolis. The study will cover workers in the education and health sector as well as workers at the Cape Coast Metropolitan Assembly (CCMA).

Contextual issues will include knowledge of financial literacy, application of financial literacy, measurement of financial literacy, financial skills, financial attitudes, financial behaviour and public sector workers.

Financial literacy will refer to the knowledge and understanding of financial concepts, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life (OECD, 2013).

The public sector comprises workers in the civil service (education, health, Ministries, departments, and local government), state-owned-enterprise sector (Ghana Post Company Limited, Community Water and Sanitation Agency, Electricity Company of Ghana Limited, Ghana Water Company Limited, and Ghana Broadcasting Corporation) and hybrid sector (public universities and polytechnics). Public sector workers will be defined as workers who are part of the state and deal with the production, ownership, sale, provision, delivery and allocation of goods and services by and for the government or its citizens, whether national, regional or local/municipal.

Significance of the study

The study will examine the levels of financial literacy and its application among public sector workers in the Cape Coast Metropolis. The findings of the study will help improve the levels of financial literacy and its application among public sector workers in the Cape Coast Metropolis. The study will help public sector workers increase their understanding of and ability to manage financial matters, with the ultimate goal of developing long-

term financial stability and security which will improve the well-being of people in the Cape Coast Metropolis.

Increasing peoples' financial literacy will help improve their welfare through better decision making on financial behaviour. Financial literacy is central to individual, family and communal economic security. New responsibilities and opportunities given to consumers, such as retirement planning, have increased the need for more sophisticated consumer financial knowledge. By understanding value-added financial literacy programmes and services, public sector workers can understand prudent financial habits.

Defining and appropriately measuring financial literacy will be essential to understand the educational impact as well as barriers to effective financial choice. An overview of the meaning and measurement of financial literacy will be presented to highlight current limitations and assist researchers in establishing standardised, commonly accepted financial literacy instruments.

The study will also be beneficial to financial institutions in sensitising them on the need for financial literacy programmes and services and for skills related to the management of personal finances. It will again contribute to the existing stock of knowledge on the levels of financial literacy and its application. Finally, the study would serve as a source for further research on financial literacy.

Organisation of the study

The study will be divided into five chapters. The first chapter, which is the introduction, will discuss the background to the study, statement of the

problem, objectives of the study, research questions, scope of the study, significance of the study, and organisation of the study. Chapter Two will deal with literature review on theoretical framework of the study, concept of financial literacy, knowledge of financial literacy, financial skills, financial attitudes, importance of financial literacy, measurement of financial literacy, factors that influence financial literacy, financial knowledge and financial behaviour, financial literacy in Ghana, public sector workers in Ghana. The chapter also presents a conceptual framework for the study.

Chapter Three will focus on the methodology of the study which includes the description of the study area, study design, study population, sample and sampling procedure, data collection method, instrument design, pre-testing, ethical considerations, field work, field challenges, and data management. Chapter Four will deal with the results and discussion on the research findings, while Chapter Five will present the summary, conclusions, and recommendations of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

This chapter is devoted to a review on the concepts and theories of financial literacy. It presents knowledge of financial literacy, financial skills, financial attitudes, importance of financial literacy, measurement of financial literacy, factors that influence financial literacy, financial knowledge and financial behaviour. It also discusses financial literacy in Ghana, public sector workers in Ghana. The chapter also presents the conceptual framework of the study.

Theoretical framework

Financial development is critical for growth, but its micro-determinants are not well understood. Cognitive, emotional and environmental influences, as well as prior experience, all play a part in how the understanding of financial literacy is acquired or changed, knowledge and skills retained (Ormrod, 2012). The study adopts the psychoanalysis theory (Freud, 1910), learning theory (Pavlov, 1960), human capital theory (Schultz, 1961) and cognitive theory (Piaget, 1983).

The study adopts the psychoanalysis theory by Freud (1910) who argues that an individual's level of financial literacy is shaped by the conflict between the desire to increase pleasure or to follow social norms. The psychoanalysis theory is used to explain that an individual's understanding and application of financial literacy depend on their desire for money. However, Krueger (1986) points out that an individual's inherent desire for

increasing pleasure or the social norms may be violated in the pursuit of money which may affect the effective application of financial knowledge and skills. According to Tuckett and Taffler (2008), financial literacy, as measured in terms of financial knowledge, understanding, skills, attitude and behaviour necessary for effective decision making concerning money significantly depends on one's ability to discern financial choices (pleasure or risk of investing).

The learning theory (behaviourism) offers a methodical study of the observable influences of behaviour and how people acquire habits (Goldhaber, 2000). Learning theory explains that an individual's level of financial literacy is informed by his or her level of financial knowledge, skills and attitude towards financial management. Pavlov, a founding behaviourist, documented that financial behaviour can be learned, modified and extinguished by altering the conditions, including immediate stimuli, in which the behaviour occurs (Pavlov, 1960). Learning theory evolved most notably with the work of Skinner in 1953 which determined that once the behaviour is associated with a consequence, whether a reinforcer or punishment, the likelihood of the action continuing changes. Skinner (1953) found that time mattered in the association between behaviour and the consequence.

The theory is used to explain that a person continues to spend money instead of saving because spending has the immediate reward of the purchase. That is, by breaking financial literacy into separate skills that can be performed in sequence and reinforced, an individual will be better able to learn, understand and make effective decisions regarding financial issues such as paying down debt or investing in stock.

The theory of human capital postulates that the level of financial literacy of an individual depends on one's financial knowledge, attitude, skills and behaviour. From the work of Schultz (1961), the theory assumes that investment in financial knowledge – financial training, exposure, and experience – is highly instrumental and even necessary to improve financial literacy and financial management. Human capital theory suggests that financial education or training raises people's confidence and awareness imparting useful knowledge and skills, hence increasing their abilities make good financial decisions to increase their future financial wellbeing (Becker, 1964).

JumpStart Coalition (2008) defines human capital in financial literacy as the attributes gained by a person through financial education and experience. The theory suggests that financial literacy is a form of investment in human capital. Human capital theory rests on the assumption that financial education is highly instrumental and necessary to improve the financial capacity of a population (Becker, 1962, 1964). Endogenising financial knowledge has important implications for financial welfare as well as policies intended to enhance levels of financial knowledge in the larger population. The theory assumes that financial literacy allows investors to obtain higher expected rates of return on their assets, for any given level of risk, up to a theoretical maximum on the mean-variance frontier.

Huston (2010) provides an explanation that links investment in financial training with people's financial literacy and financial wellbeing. In particular, the theory draws a crucial distinction between general education and financial literacy. Over the years, studies have been conducted to estimate

rates of financial return to financial literacy. Agarwal and Mazumder (2010) found that financial attitudes and financial behaviour are crucial factors in explaining the application of financial literacy to enhance financial wellbeing.

Piaget's (1983) cognitive theory interest is in the cognitive processes that lie between the observed cause and its effect on behaviour. The theory posits that individuals gain knowledge from interaction, first physically and then mentally, with objects. The cognitive theory is used in the study to explain that how individuals organise their thinking about financial literacy issues affect subsequent financial decisions and behaviours in their lives. It also helps in studying people's understanding of financial literacy and how they translate into their lives. According to Byrnes (2008), an individual's cognitive ability provides the foundation for attaining high levels of financial literacy. Brynes continues that people who are cognitively well organised have high levels of financial literacy.

Concept of financial literacy

Financial literacy is a growing economic and social concern garnering greater attention from banking companies, consumer advocates, scholars, governmental agencies and policymakers. Different definitions of financial literacy exist in the literature, resulting in no uniform definition.

OECD (2005) defines financial literacy as a combination of awareness, knowledge, skills, attitude and behaviours necessary to make sound financial decisions and ultimately achieve individual financial wellbeing. This definition makes it clear that financial literacy is more than just knowledge, but it also includes attitudes, behaviours and skills. It stresses the importance

of decision making – applying knowledge and skills to real life processes – and it indicates that the impact should be improved financial wellbeing.

Authors such as Mandell (2007, 2008) and Lusardi and Tufano (2008), emphasise a judgment and decision-making aspect of financial literacy. To Mandell (2007), financial literacy is the ability to evaluate the new and complex financial instruments and make informed judgments in both choice of instruments and extent of use that would be in their own best long-run interests. Mandell (2008) describes financial literacy as “the ability of consumers to make financial decisions in their own best short- and long-term interests” (p. 257). Lusardi and Tufano (2008) focus on debt literacy, a component of financial literacy, and define it as the ability to make simple decisions regarding debt contracts, in particular how one applies basic knowledge about interest compounding, measured in the context of everyday financial choices.

Lusardi (2008a, 2008b) focuses on financial knowledge in his definition of financial literacy. He sees financial literacy as knowledge of basic financial concepts, such as the working of interest compounding, the difference between nominal and real values, and the basics of risk diversification. Australia and New Zealand Banking Group (2008) indicates that financial literacy is the ability to make informed judgements and to take effective decisions regarding the use and management of money.

One of the most authoritative definitions is provided by the President’s Advisory Council on Financial Literacy (PACFL, 2008) which defines financial literacy as the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial wellbeing. This definition

stresses knowledge and skills as key components of financial literacy, while definitions by other institutions and scholars give more emphasis to just some elements, or have a slightly different focus. However, it is unclear how widely the PACFL definition is accepted.

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 (World Bank, 2009). In simple terms, it is the set of skills and knowledge that allows an individual to make informed and effective decisions through the understanding of finance.

At its most basic level, Remund (2010) relates financial literacy to a person's competency for managing money and is typically measured at the individual level and then aggregated by groups. He defines financial literacy as the knowledge and understanding of financial concepts thereby resulting in the ability to make informed, confident and effective decisions regarding money. Remund explains that the operational definitions of financial literacy most commonly used in contemporary research fell within four categories – budgeting, saving, borrowing and investing – all of which are behaviour or ability based. These key concepts can be expanded or refined, depending on the elements of sound budgeting, saving, borrowing and investing.

Huston (2010) reveals eight definitions of financial literacy which focus on knowledge, ability to make informed judgments and to reach an intended outcome such as lifetime financial security and the skills required to realise those outcomes. Huston differentiates between financial literacy and

personal financial literacy. He defines financial literacy as the ability to make informed judgments and to take effective decisions regarding the use and management of money, while personal financial literacy is the ability to read, analyse, manage and communicate about the personal financial conditions that affect material wellbeing. He further explains that financial literacy is a basic knowledge that people need in order to survive in a modern society.

The OECD (2011) has defined financial literacy as a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing. OECD members agreed that the various terms used to describe this concept (including in particular financial literacy and financial capability, but also financial culture and financial insight) could be used relatively interchangeably as they reflect similar perceptions of the reality they aim to cover.

Financial literacy refers to the knowledge and understanding of financial concepts, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial wellbeing of individuals and society (OECD, 2013). It is the process by which financial consumers/ investors 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 wellbeing.

A closer analysis of the definitions reveals that the definitions explain the same thing, just in a different way. Financial literacy has been variably defined as (a) a specific form of knowledge, (b) the ability or skills to apply that knowledge, (c) perceived knowledge, (d) good financial behaviour and (e) financial experiences. Remund (2010) revealed that the many conceptual definitions of financial literacy fall into five categories (1) knowledge of financial concepts, (2) ability to communicate about financial concepts, (3) aptitude in managing personal finances, (4) skill in making appropriate financial decisions and (5) confidence in planning effectively for future financial needs.

Capuano and Ramsay (2011) put financial literacy into three distinct but dependent components which are (1) the key competencies, (2) proficiencies of a financially literate person, and (3) the opportunity and enabling environment necessary for those competencies and proficiencies to be realised. Capuano and Ramsay's definition of financial literacy therefore highlights the three components. Financial literacy is therefore proficiency in the key competencies, in an environment that provides the opportunity to become proficient in the competencies, and to realise financial goals.

That is, a financially literate person must be proficient in the key competencies, and be given the opportunity to realise financial literacy and its benefits, while having the motivation to act. Financial literacy increases as more links are established between the competencies and proficiencies, and as long as an inclusive financial environment exists. Financial literacy is best considered in terms of key competencies, and proficiency in those key competencies.

Financial knowledge

Whereas financial knowledge is often considered central to financial literacy, it should be distinguished from general knowledge. For example, Parker, Bruine de Bruin, Yoong and Willis (2011) found that finance-specific knowledge outperformed general knowledge when predicting performance on a hypothetical investment task. Different forms of knowledge and other cognitive abilities tend to be mutually supporting in financial literacy. Financial knowledge is an important aspect of proficiency of the consumer. It refers to a consumer's knowledge of the competencies which includes the influence of inflation, the value of money over time, whether a product will retain its value and opportunity cost (World Bank, 2009).

Sobhesh, Samir, Joshy and Jayanth (2012) conceptualise financial knowledge component of financial knowledge to measure understanding of interest calculations, relationship between inflation and return, inflation and prices, risk and return, and the role of diversification in risk reduction. The authors found that the financial knowledge of students, young employed youth and retired respondents is low by international standards. They recommend that individuals need, at least, a fundamental level of financial knowledge to best ensure their financial literacy.

Braunstein and Welch (2002) provide a comprehensive review of issues arising for and from poor financial knowledge. They note that while there have been both legislative and other initiatives, often from the financial services industry itself, aimed at increasing the level of information available to consumers, there is a lack of knowledge about how to interpret this information and to act on it appropriately, often leading to significant financial

stress. Braunstein and Welch emphasise the importance of financial literacy, not only in response to deceptive and predatory lending practices, but also in understanding the sheer complexity and accessibility of financial products now available. However, they point out that the success of financial literacy training depends on more than just passing on information. The focus, timing, format and location of training can all influence actual outcomes, quite apart from practical characteristics.

Hilgert, Hogarth and Beverley (2003) find that individuals with more financial knowledge are more likely to engage in a wide range of recommended financial practices, while Lusardi et al. (2010) find that among older adults, those who displayed better financial knowledge were more likely to plan, to succeed in planning, and to invest in complex assets. The call for better understanding and addressing a lack of adult financial literacy therefore becomes important for public service workers.

According to Bernheim and Garrett (2003), knowledge of how financial markets operate (financial literacy) should result in individuals making more effective borrowing decisions. Lusardi and Mitchell (2011a, 2011b) found that majority of Americans have limited knowledge about inflation, compound interest, risk diversification which is accompanied with low numeracy skills. For example, the ability to compare offers before applying for a credit card, having a current and savings accounts, having a book keeping system, planning for the future like saving or investing for long term goals like education, home, vacation, etc. were limited among Americans.

Huston (2010) advises that financially knowledgeable 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. However, knowledge cannot be usefully applied without relevant skills.

Financial skills

Recent research has focused on more behaviourally-proximal cognitive skills, including decision-making competence (Parker et al., 2011; Lusardi & Mitchell, 2011c, 2011d). The relationship between decision-making competence and financial skills may be analogous to the relationship between financial and general knowledge. There may be benefits to specialised financial measures, but the general positive relationships among such variables may represent mutual support that could add explanatory power. However, researchers to date found that various segments of the population lack various types of financial skills (Hilgert et al., 2003; Lusardi & Mitchell, 2011a, 2011b).

There is generally available literature indicating that well developed financial skills are necessary for effective money management (Braunstein & Welch, 2002; Hilgert et al., 2003; Scott, 2010; Parker et al., 2011). van Rooij, Lusardi and Alessie (2011) assert that financial literacy involves the application of a diverse skill set in a particular knowledge domain. Thus, coping with the financial literacy demands of everyday life involves the activation of a constellation of underlying skills that are themselves fundamental.

Specifically, Parker et al. (2011) emphasise that coping with financial literacy tasks depends upon how individuals apply, among others, oral fluency, prose literacy, document literacy, numeracy, problem solving and scientific literacy skills. Lusardi and Mitchell (2011c) therefore caution that the financial literacy of adults will improved depending on the teaching and learning the constituent skills upon which financial literacy proficiency depends rather than financial literacy skill directly.

Financial attitudes

It is important to distinguish financial literacy from financial attitudes which logically derive in part from underlying preference. Eagly & Chaiken (1993) define an attitude as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour” (p. 1). To the extent that self-reports include endorsements of certain behaviours or concepts that are at least in part preference-based, this should be distinguished from knowledge, skills, or behaviour that can be judged against a normative standard.

Based on the belief that attitude influences behaviour, OECD (2011) developed a scale to measure financial attitude. Adopting OECD measures, Sobhesh et al. (2012) also measures financial attitude in terms of agreement or disagreement towards statements about the extent of belief in planning, propensity to save and propensity to consume. Sobhesh et al. found that close to half of the young employees and retirees have a highly positive attitude towards financial planning and do not seem to show a very high propensity for consumption.

Importance of financial literacy

Financial literacy is an essential element of social education. It is associated with the health and wellbeing of individuals, families, communities and markets. It is important because it benefits consumers, the community/financial system and the economy. Financial literacy causes consumers to behave in a particular way and develop particular attitudes concerning money. The microeconomic benefits to the household extend out to produce macroeconomic benefits for the economy and the financial system.

Benefits to consumers

Financial literacy gives consumers and households the knowledge and skills necessary to assess the suitability of financial products and investments. This translates into a number of benefits. Financial education can help individuals plan for their future and contribute to a sustainable, vibrant lifestyle during work years and retirement (Sobhesh et al., 2012). Effective financial education can help individuals develop efficient household budgets, create savings plans, manage debt and formulate strategic investment decisions for themselves and their families. It also provides more opportunities to save and invest, helps people obtain goods and services at lower costs and helps develop better consumers.

According to Lusardi and Mitchell (2011a), greater financial knowledge and application of that knowledge, reduces the likelihood that consumers, at any income level, will fall prey to unscrupulous sales persons and purchase products or services that are not in their best interest. Financially knowledgeable consumers are more likely to save their money in financial

institutions, compare financial products and services and discuss money-making with their spouses and children. Financial literacy enables people to make better financial decisions, to appreciate their rights and responsibilities as consumers of financial products and to understand and manage risk. The positive direct impact financial literacy has on finance and savings in turn supports livelihoods, economic growth, sound financial systems and poverty reduction (World Bank, 2009).

Financially literate people have a greater capacity to save for retirement (Lusardi, 2008a, 2008b). 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 realise those retirement goals (Jappelli, 2010). Jappelli continues that a better-informed consumer will save for the future, for retirement and for unforeseen circumstances and emergencies, while low levels of financial literacy are linked with lower long term savings, such as for retirement or superannuation. 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.

Financial literacy 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 (Gallery & Gallery, 2010). It also helps to develop life skills and bargaining power of consumers. The realisation of good financial behaviour is achieved through the development of knowledge and skills, which provides the basis for making informed decisions. As a result, consumers can gain better deals and

demand more from service providers. According to Lusardi et al. (2010), a skilful and knowledgeable person with good attitudes is in the best position to make the most of life's opportunities and to budget and plan spending.

Jappelli (2010) reports that financial education can help children to understand the value of money and teach them about budgeting and saving. It can give students and young people important skills for independent living, for example in managing and repaying student loans. It can assist adults in planning for major events like buying a home or becoming parents. This 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.

Financial literacy results in financial efficiency. It gives consumers the ability to live more efficiently, without unnecessary cost and waste. Financial literacy allows people to increase and better manage their earnings – and therefore better manage life events like education, illness, job loss, or retirement (European Commission, 2009). Financial efficiency can include selecting the best value product on the market, and paying the lowest possible price on the market for a particular product or service. The European Commission notes 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. This means that financial literacy should result in much more than realising financial goals.

Financial literacy also calls for wise spending. This means preparing budgets, tracking expenditures, paying bills on time, and ensuring that credit card balances are paid in full each month. This relates to the efficient use of money, and being able to function with the least possible unnecessary expense. This results in more disposable income and greater money to spend, save and invest (Lusardi, 2009), which translates to a better quality of life.

A lifetime of financial wellbeing or realising financial goals and healthy household balance sheets is achieved through financial efficiency, realised by financially literate consumers (van Rooij et al., 2011). Measures of financial wellbeing include increases in wealth, income, savings, improved credit ratings, manageable debt relative to assets, home ownership, accumulating retirement savings and an investment portfolio that reflects the needs of the consumer. Parker et al. (2011) explain that measuring financial wellbeing in older people accurately does not simply depend on income and wealth, but on time allocation and consumption possibilities (Sobhesh et al., 2012) thereby supporting the view that financial literacy provides greater lifetime utility. This means that the benefits of financial literacy should not be restricted to considering its impact on the bottom line.

Financial literacy helps in the management of debt. Financial efficiency is linked with debt literacy, which includes financial knowledge of debt and how best to avoid and manage debt. According to Lusardi and Tufano (2008), debt illiteracy can be linked to a number of high cost financial experiences, such as borrowing on credit, using pay day lending or pawn shops. Debt literacy results in selecting products which are needed, while avoiding unnecessary products which increase costs. Understanding where to

get help is the first step in remedying debt, and therefore knowledge of this process is important in preventing, mitigating and repaying debt.

Financially literate helps consumers to possess more financial products and be productive investors. Gallery and Gallery (2010) specify that limited financial market participation or inertia may be a consequence of low levels of financial literacy. Van Rooij et al. (2011) found that people with low levels of financial literacy are significantly less likely to hold shares and stocks. This limited financial market participation can result from a lack of knowledge about finance that makes a person unlikely to be financially active, such as to open a bank account. Financial literacy not only enhances participation, but also encourages sound investment strategies such as diversification (Jappelli, 2010).

According to World Bank (2009), financial literacy assists in investing and choosing the right financial products with confidence. A financially literate consumer will be more confident when making decisions about finance, thereby increasing participation in the market. 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.

Financial literacy helps in investing and choosing the right financial products with confidence. Financial education can contribute to financial stability by helping consumers to choose appropriate products and services, leading to lower default rates, for instance on loans and mortgages, and more diversified and therefore safer saving and investment (European Commission,

2009). 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.

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 (Holzmann, 2010; McQuaid & Egdell, 2010). This translates into lower levels of regulatory intervention because consumers are better able to take care of themselves.

Benefits to the community

Financial literacy also has considerable benefits to the community, in particular enhancing inclusion in the financial markets and increasing the awareness by the public of financial issues, thereby creating an informed citizenry which can evaluate the appropriateness of government financial policies.

Greater financial understanding and knowledge allow those members of society who are otherwise excluded the opportunity to use financial products and services (van Rooij et al., 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. Financially literacy provides the understanding

required to access particular products which allows people to borrow and become financially active.

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 (European Commission, 2009). Financial literacy therefore increases social inclusion, and gives people the knowledge to avoid highly priced, unconventional and riskier forms of credit and financial products.

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. For example, Remund (2010) cites that financial literacy promotes understanding and acceptance of important political reforms, such as health care or pension reforms. While many political reforms are highly complex, Remund asserts that 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.

Lusardi and Mitchell (2008) indicate that the cost of poor financial decision making and planning often gets shifted on to other members of the community, state and nation through higher prices for financial products, the diversion of economic resources and greater use of public safety net programmes. Lusardi et al. (2010) stipulate that market efficiency is also dependent on financially literate consumers. They believe that educated

consumers are better able to demand products that meet their short- and long-term financial needs, with providers competing to create products whose characteristics best respond to those demands.

Benefits to the financial system and the economy

Financially literate consumers can also create a more competitive, innovative, safe, stable, accessible, disciplined and liquid financial system and markets.

Financial literacy promotes greater competition, innovation and quality products. 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 (European Commission, 2009). 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.

Holzmann (2010) 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. The rationale for this stems from transparency and the ability to filter good from bad financial institutions. Certainly, if there is enough transparency in the financial system so that customers are both knowledgeable and well-informed, it does seem reasonable to predict that they will direct their business away from riskier, poorly run financial institutions to those that are better managed (McQuaid & Egdell,

2010). As a result, better informed consumers are collectively able to influence the ways that financial institutions are managed, (Jappelli, 2010) and thus reward those institutions which offer better quality products and services, at the best value.

Financial literacy helps in the coverage of risk. Financially literate consumers have a greater appreciation of risk, and therefore the problem of under-coverage of risk (European Commission, 2009) (for example, underinsurance) is not as prevalent as in markets in which people are not financially educated. The Commission found that 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.

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 (van Rooij et al., 2011). Instead, people are more willing to build wealth during their working lives to fund retirement. A financially literate society therefore provides a foundation for wealth creation and economic development.

Financial institutions and banks tend to be myopic in lending decisions, being flexible in good economic times only to tighten lending when the economic climate turns bad (Lusardi & Mitchell, 2011a). The authors refer to the situation as procyclicality, and it can have significant negative effects on

highly leveraged borrower who do not plan for the changed cycle and therefore default in harsh economic times.

Jappalli (2010) explains that in a financially educated society, borrowers will be less likely to take on more debt just because credit is cheap and freely available. As a result, they will have a far better chance of riding out an economic downturn without defaulting on their debt repayments – which, in turn, will help minimise the bad debt experience of financial institutions and, by doing so, help bolster the stability of the financial system. As a result, financially literate consumers will understand cyclical changes in the financial markets, and will borrow and invest accordingly, while also being resilient in harsh economic times.

Measurement of financial literacy

Unlike health literacy, which is typically measured using one of the three standardised tests, there currently are no standardised instruments to measure financial literacy. Given the wide array of concepts and definitions of financial literacy, it is not surprising to find substantial heterogeneity also in measurement. While most research papers resort to objective test-based measures, the number, wording and content of the tests used in each paper are far from homogeneous.

Marcolin and Abraham (2006) identified the need for research focused specifically on measurement of financial literacy. Typically, financial literacy and/or financial knowledge indicators are used as inputs to model the need for financial education and explain variation in financial outcomes such as savings, investing and debt behaviour. Measurement of financial literacy level

was an important preoccupation for many researchers who conducted several surveys to identify the level of financial literacy of different category of people. However, far fewer studies specifically emphasise measurement of financial literacy as an objective.

Across studies, both performance tests and self-report methods have been employed to measure financial literacy. Self-assessment of own financial knowledge and skills is probably the easiest measure to implement in a survey and is sometimes used as a measure for financial literacy (e.g., in Perry & Morris, 2005). However, van Rooij et al. (2011) show that this may not be a reliable measure, because high (low) self-assessed knowledge does not correspond to high (low) test-based knowledge in a remarkable share of their sample. Moreover, Jappelli (2010) suggests that self-assessment about financial knowledge is likely to be confounded with over- or under-confidence (with over-confidence being more frequent than under-confidence). Jappelli uses two different measures of self-assessed financial knowledge, and find that the first one is positively (but weakly) correlated to a test-based index of financial literacy, while the second is not correlated at all.

A few remarks are necessary on what financial literacy tests are about. First, since the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial wellbeing (PACFL, 2008) builds on numerical abilities, it is quite common to include numeracy tests in the financial literacy tests. This is, for instance, the case of van Rooij et al. (2011) and Lusardi and Mitchell (2011c). However, financial literacy is not exhausted by numeracy, and it is debatable whether numeracy tests alone can

be used to measure financial literacy (such as the numeracy tests in the Survey of Health, Ageing and Retirement in Europe [SHARE]).

Second, some surveys focus on the knowledge of economic indicators (e.g., what is the current inflation rate), such as European Commission (2009). Given that most studies try to capture knowledge of basic financial principles, rather than knowing a single parameter, I disregard this type of measures in the current review. Finally, the studies on financial capability concentrate on broader concepts than strictly on knowledge of financial principles, and include – in addition to the standard quizzes on economic-financial concepts – also measures of attitudes and behaviour (e.g., attitudes to spending money and saving, understanding consumer rights, etc.). The ANZ Banking Group (2008) follows this approach.

Performance tests are primarily knowledge-based, reflecting the conceptual definitions. In contrast, many self-reports assess perceived knowledge or confidence in knowledge (i.e., how much you think you know). However, consumers often think that they know more than they actually do, a common finding that has been demonstrated not just in financial matters, but across a wide range of knowledge and abilities (OECD, 2005). Whereas actual and perceived knowledge are often correlated, this correlation is often moderate at best. For example, Agnew and Szykman (2005) found correlations between actual and perceived financial knowledge that ranged from .10 to .78 across demographic groups (the median correlation was .49 across 20 categories). Hence, caution should be taken when using perceived knowledge as a simple proxy for actual knowledge.

Even though performance tests are more objective than self-assessed knowledge, van Rooij et al. (2011) state that they are not free from problems because of the following:

1. Test-based measures are not absolute measures (i.e., defining what people have to know to be ‘financially literate’ is not easy and involves some degree of arbitrariness), and also when considered as relative measures they can be problematic. In particular, comparisons between different ‘indices’ or even different tests is hardly feasible.
2. It is important whether a ‘don’t know’ option is offered or not. Not allowing for a ‘don’t know’ option may force respondent to select a random answer.
3. The methodology used to build a synthetic measure of financial literacy is also important. This usually depends on the nature of the questions (i.e., with right/wrong questions a count of correct answers is a reasonable way to go; with questions admitting different degrees of right/wrong questions a principal component analysis may be used, as in Kimball and Shumway (2007) proposed an index for the kind of questions that can be answered right/wrong to varying degrees).

To (partially) address these measurement issues, several surveys that have recently added financial literacy tests for the first time in their questionnaires have opted for exactly the same set of questions in order to improve comparability across samples and countries. The questions that are establishing as the most widely used are those developed by Lusardi and Mitchell (2011c).

Goldsmith and Goldsmith (2006) made a study to examine the financial literacy level of college students at a small liberal arts college in the North-eastern United States and examine the factors that contribute to financial literacy. They used the measurement of financial literacy by the Jump\$tart Coalition (2008) to build the survey instrument. They measured financial knowledge in four areas – income, money management, saving and investment and spending and debt. This survey conclude that class rank, as indicated by its impact on the number of credit cards, and motivation, as measured by interest in personal finance, were the most significant predictors of financial literacy. In the same time, this study contradict the results of previous surveys related the gender and personal financial literacy that have consistently indicated men having a higher level of literacy related to personal finance than women.

Another research was conducted by Lusardi et al. (2010) though they showed that financial literacy is low, only 27 percent knew about inflation and risk diversification and could do simple interest rate calculations. Moreover, women proved to be the least financially literate. Differences between women and men persisted even after accounting for many demographic characteristics, family background characteristics and peer characteristics.

Table 1 illustrates how financial literacy has been actually measured (i.e., the operational definitions), across several empirical studies placed in chronological order.

Table 1: Measurement of financial literacy

Publication	Operational definition	Measurement strategy ^a		Content domain ^b		
		SA	PT	S	I	D
Hilgert et al. (2003)	<i>Percent correct</i> on a knowledge test		x	x	x	x
Agnew and Szykman (2005)	<i>Number of correct responses</i> to 10 multiple choice and true/false items	x	x		x	
	Self-rated investment knowledge relative to others on 1-10 scale					
Mandell (2007)	<i>Percent correct</i> on a knowledge test		x	x	x	x
Mandell (2008)	<i>Percent correct</i> on a 31-item knowledge test		x	x	x	x
ANZ Bank (2008)	<i>Mean score, based on target responses</i> to 26 questions derived from an operational framework	x	x	x	x	x
Lusardi & Tufano (2008)	<i>Correct responses</i> to 3 individual multiple-choice items	x	x			x
Lusardi & Mitchell (2011a, 2011b)	<i>Correct responses</i> to 3 multiple-choice and true/false items		x	x	x	
Lusardi & Mitchell (2011c)	<i>Correct responses</i> to 3 computational items		x		x	
Lusardi & Mitchell (2011d)	<i>A single weighted average of correct/incorrect responses</i> (based on factor analysis) of 5 multiple-choice basic financial literacy items and 8 multiple-choice sophisticated financial literacy items. Separately considered a 7-point item on perceived knowledge.	x	x	x	x	
van Rooij et al. (2011)	<i>Two weighted averages of correct/incorrect responses</i> (based on factor analyses) for (a) 5 multiple-choice basic financial literacy items and (b) 11 multiple-choice sophisticated financial literacy items. Separately considered a 7-point item on perceived knowledge.		x	x	x	

^a SA = Self-Assessment, PT = Performance Test

^b S = Savings, I = Investment, D = Debt, N = Numeracy

^c Italics have been added throughout to emphasise key definitional components

^d This study labels the construct investment literacy

Source: Hung, Parker & Yoong, 2011

Factors that influence financial literacy

Financial knowledge is related to a wide range of financial behaviours, including wealth accumulation, stock market participation, portfolio diversification, participation and asset allocation in plans, indebtedness, and responsible financial behaviour in general. A number of factors influence financial literacy which ultimately affect financial decision making. The main determinants of are organised along domains as follows:

Socio-demographic characteristics

Many financial literacy surveys and studies indicate a link between lack of financial literacy, however measured, and particular socio demographics (ANZ, 2008). Research has linked low levels of financial literacy with low socio-economic geographic areas (Hilgert et al., 2010). ANZ (2008) focuses on financial inclusion in Australia, linking poor financial behaviour with particular social attributes such as poverty and disability.

The socio-demographics which score poorly in financial literacy tests include women; young people; people experiencing unemployment; people who are not working such as retirees and students; the elderly; people with low incomes; people from disadvantaged areas; people with no tertiary education; people from families with low financial sophistication and participation; single parent households; people from social and ethnic minorities, including those with less developed English proficiency. Linking financial literacy levels and financial behavioural patterns with particular socio-demographic groups is important because it elucidates the impact of particular traits on financial literacy and behaviour.

A young person may be inexperienced in specific transactions such as investing in shares, leading to less knowledge about market volatility and higher sensitivity to market fluctuations which causes inertia. The young person may score poorly on a financial literacy measure that deals with investing in shares, but in reality the person has no need for such literacy. Other people, such as middle aged people, may need a particular knowledge base and experience to achieve optimal financial results.

ANZ (2008) showed that one evident commonality among these groups is higher social position. This higher social position corresponds with greater wealth and stronger social capital or social networks, assisting with career progression and performance in formal education. This likely leads to more exposure to the experiences and information which strengthens the skills and knowledge defined as financial literacy. Therefore, social position is a key determinant of financial literacy, and also financial behaviour.

Gender differences in financial behaviour have been identified in previous studies. Volpe, Chen and Volpe (2006) indicate that differences in the ways in which men and women view money matters, and that women were more likely than men to be dissatisfied with their current circumstances and their spending habits. Volpe et al. also reports that there is an appreciable difference in the way that women and men learn and apply their learning. They found that women were more likely to report the use of sound financial practices, but they also tended to score lower on measures of financial knowledge. Goldsmith and Goldsmith (2006) found that male students both felt that they knew, and did know, more about finances than women students,

but that financial education improved both the knowledge base and the gap between actual knowledge and perceived knowledge in both genders.

Bernheim and Garrett (2003) found that males and whites perform better on both financial and macroeconomic questions. Being male is associated with greater financial knowledge also in Italy (Jappelli, 2010), the Netherlands (van Rooij et al., 2011), Australia (ANZ Banking Group, 2008), and in other US studies, such as Lusardi et al. (2010) and Lusardi and Mitchell (2011a), using the National Longitudinal Survey of Youth.

Ethnic minorities perform worse on financial literacy tests (Lusardi & Mitchell, 2011b). Lyons, Rachlis and Scherpf (2007) found that Hispanics are significantly less knowledgeable than whites about credit scores and reports. In Australia, individuals of aboriginal descent display lower financial literacy (ANZ Banking Group, 2008).

There is some evidence of an inverse u-shaped age profile of financial knowledge, meaning that middle-aged adults report higher scores than both their younger and older counterparts, without controlling for cohort effects (ANZ Banking Group, 2008). 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 (Agarwal & Mazumder, 2010), controlling for cohort effects. This pattern is not confirmed in Lyons et al. (2007), who find a slightly negative relation between age and credit score knowledge in a sample representative of the United States population aged 18 and older.

Unsurprisingly, a higher level of education is usually associated with a better understanding of credit reports and credit scores (Lyons et al., 2007) and a higher degree of financial knowledge in general (ANZ Banking Group,

2008; Jappelli, 2010; Lusardi & Mitchell, 2011a). In addition to formal education, individual cognitive abilities also play a role. Delavande et al. (2008) estimate a model where the financial knowledge score depends on cognitive ability and other controls. As expected, ability increases the accuracy of responses to financial tests, over and above the effect of education.

As part of socio-demographic factors to financial literacy, is family background, especially mother's education, and whether parents owned stocks, either in private wealth or retirement wealth. Lusardi et al. (2010) examine financial literacy among the young using data from the U.S. National Longitudinal Survey of Youth (NLSY) (in addition to the youth interview, the NLSY97 includes separate interviews with each youth's parent; the authors of this paper included a small set of financial literacy questions in Wave 11 of the survey, fielded in 2007-2008 when respondents were 23-28 years old).

Employment results in income, the development of skills, and the maintenance of a social network. Worthington (2006) argues that being out of work results in lack of exposure to financial transactions and experiences. Possible reasons for differences in financial literacy for non-working respondents include lack of exposure to financial transactions such as pay slips and superannuation statements, simpler sources of income, less exposure to work-related literacy campaigns, and fewer synergies between work-related and personal literacy.

ANZ (2008) study produced a mean score of 83.1. Those groups scoring below this mean score included blue collar workers. University graduates and white collar workers scored above the mean score. Lack of

exposure by some blue collar workers to relevant experiences, such as workplace skills like mathematics and economics, is one reason for this difference in scoring. Employment level can therefore expose a person to particular forms of financial decision making and transactions.

Financial wealth creates more opportunities and incentives to acquire knowledge. Wealth increases exposure to finance and this exposure enhance financial knowledge and skills gained from experience. Monticone (2010) shows that households endowed with larger financial assets are more likely to invest in financial knowledge. Her study validates the insights of previous studies by showing that household wealth affects financial knowledge even after removing wealth endogeneity (Bernheim & Garrett, 2003; Delavande et al., 2008).

Delavande et al. (2008) propose a simple theoretical framework linking the acquisition of financial literacy to wealth, viewing the acquisition of financial knowledge as a sort of human capital investment. Delavande et al. assume that financial knowledge allows investors to obtain higher expected rates of return on their assets, for any given level of risk, up to a theoretical maximum on the mean-variance frontier. In analogy with the theory of human capital, investors decide to invest in the acquisition of financial knowledge, thereby incurring costs in terms of money, time, and effort, to benefit from higher risk-adjusted returns on their financial assets. In this framework, the benefit from investing in financial knowledge also depends on the amount of assets invested, because the higher the stock of financial knowledge possessed, the higher the rates of return obtained by the assets. Hence, according to this

model, wealthier individuals should have a greater incentive to acquire financial knowledge.

Jappelli (2010) studies the link between economic resources and economic literacy from a macroeconomic point of view. The empirical analysis shows that a country's level of economic literacy depends on educational achievement, social interactions and the level of financial development, as proxied by mandated saving in the form of social security contributions. The contribution rate is used as an (inverse) proxy for financial market development to minimise the risk of reverse causation between literacy and financial development. These findings can be rationalised by a standard human capital model, where financial knowledge depends on cognitive abilities, and the incentives to accumulate knowledge are directly related to the level of households' resources invested in financial markets.

Wealth gives people the opportunity to invest and by having a greater incentive to learn about how best to manage their money, these people invest with better refined skills. For example, it is widely accepted that diversification tends to be undertaken by more wealthy households (Jappelli, 2010). Wealth therefore provides the opportunity to be exposed to financial experience, and it acts as a driver for the acquisition of greater financial skill and knowledge.

Time preferences

Meier and Sprenger (2010) present the results of a field study linking individual decisions to acquire personal financial information to time preferences. They offered a short, free credit counselling and information

programme to more than 870 individuals. About 55 percent chose to participate. Independently, the authors elicited time preferences using incentivised choice experiments both for individuals who selected into the program and those who did not. Results show that the two groups differ sharply in their measured discount factors (controlling for other individual characteristics, including prior knowledge about credit scoring). Individuals who choose to acquire personal financial information through the credit counselling programme discount the future less than individuals who choose not to participate. This suggests that individual time preference may explain who will and who will not choose to become financially literate.

Intelligence and cognitive ability

Cognitive ability and intelligence assists the development of learned behaviours and provides a natural ability to calculate efficiently and judge matters. Cognitive ability and intelligence play a key role in human functioning and the ability to process information. Important factors that contribute to human choices include the information to which a person is exposed, and, his or her ability to process that information (Banks, O’Dea & Oldfield, 2010). This includes the ability to deal with the many aspects of the financial markets. A link has been established between cognitive ability and good financial behaviour.

Huston (2010) also supports the belief that intelligence and cognitive ability are a leading influence on financial literacy. For example, if an individual struggles with arithmetic skills, this will certainly impact his/her financial literacy. It is no surprise then that Agarwal and Mazumder (2010)

believe that higher scores in mathematics and other cognitive measures are linked with the ability to make fewer financial mistakes. Therefore, the influence of endowed human capital reflects what is meant by cognitive ability and intelligence, which is put to practice and which provides the foundation for attaining more refined levels of human capital.

Smith, McArdle and Willis (2010) found that the strong cognitive ability of people within a household has significant positive effects on the financial outcomes of the household, and in particular a strong association was established between cognitive ability, household wealth and portfolio holdings. Banks et al. (2010) found an extremely strong correlation between numeracy and financial wealth. Cognitive ability formed an important part of a financial literacy study and found that people with higher numerical ability tend to display optimal financial behaviour, such as making mortgage repayments consistently and on time (Gerardi, Goette & Meier, 2010).

JumpStart Coalition (2008) found a link between students' scores and financial literacy, indicating that intelligence levels and a personality geared towards doing well on such tests can be the cause of good financial behaviour, financial literacy and numerical ability. One potential explanation is that high levels of very specific cognitive abilities may be a prerequisite for making optimal financial choices. This demands an investor to synthesise a wide range of information concerning economic conditions and the past performance of various assets, accounting for transactions costs, asset volatility, and covariance among asset returns.

Experience and exposure

Jappelli (2010) provides evidence that financial and economic literacy is assisted by experience with finance, by finding that the private accumulation of resources is related to financial literacy. His review showed that numeracy and the accumulation of experience in dealing with wealth created better financial behaviours and a greater familiarity with money. His study showed that people living in countries with more generous public pensions demonstrate lower levels of financial literacy other things being equal. Financial experience is therefore important in shaping financial behaviour.

Experience is a highly relevant variable, which can be stronger in certain demographics (Worthington, 2006). Worthington found that there was a u-shaped age profile of financial knowledge, which signified a peak at middle age and then a decline can be explained by greater experience and then a reduction in cognitive ability in later life. He asserts that the experience is dependent on the employment experience and exposure to markets and credit, marketing, and a person's level of financial responsibility.

Social factors

These social factors can diminish or enhance the ability to acquire proficiency (either cognitive, acquired intellect or knowledge) and therefore understand financial terms and concepts and gain access to financial opportunities. Whether these abilities are enhanced or diminished depends on social factors.

Duflo and Saez (2004) shows that behaviour may be more heavily influenced by environment than other social influences. It is true that social

influences may lead a person to a particular environment, but people of similar social origin and education, and the same career and similar pay, have been shown to differ in investing according to their workplace. Duflo and Saez displayed that effects of peer groups was important in financial knowledge. They support the assertion that people are influenced by their environment.

Market and economic complexity

Complex markets and financial products can leave consumers feeling overwhelmed and confused as well as not motivated to go through information. One leading cause of financial exclusion, other than wealth, is the use of complicated language in financial products not using simple English Language. According to Gallery and Gallery (2010), complex markets and overly complex financial products cause inertia. However, the complexity of the markets may be easy to understand for particular socio-demographics with the appropriate levels of education or experience. Market complexity may mean that financial education, and accordingly certain forms of financial literacy, are futile.

Monticone (2010) is of the view that individuals need greater financial skills to manage increasingly complex financial products and urges that consumers should not act as financial experts. His advice was based on the velocity of change in the financial marketplace means that education cannot keep up with such change, the market and its products are becoming increasingly complex, a growing and complex financial market and the number of products on offer has boomed causing consumers to feel

overwhelmed. All these contribute to a lack of motivation in applying financial knowledge.

Financial knowledge and financial behaviour

It is important to establish the link between financial knowledge and good financial behaviour to elucidate the benefits of financially literate consumers. Marcolin and Abraham (2006) argue that the link between financial literacy and behaviour has not been established.

The literature is mixed concerning a link between financial knowledge and optimal financial behaviour (Hutson, 2010) because other factors influence human behaviour and opportunity. However, a number of studies draw a link between financial literacy and particular forms of behaviour, arguing that financial knowledge matters in accumulating wealth, stock market participation (Monticone, 2010), greater portfolio diversification (Jappelli, 2010), planning for retirement and prudent borrowing behaviour (Lusardi et al., 2010).

Hilgert et al. (2003) describe the impact of financial knowledge on various aspects of financial behaviour such as cash-flow management, credit management, saving and investment, and other financial experience, such as planning and setting goals for financial future. They found that the relationships between specific financial knowledge scores and the corresponding financial practices are statistically significant (e.g., knowing about credit issues is correlated with having higher index scores for credit management practices). The authors conclude that this pattern may indicate

that increases in knowledge and experience can lead to improvements in financial practices.

Lusardi and Mitchell (2011a) pioneered linking financial knowledge with financial behaviour, through the use of questions in surveys that reflect such behaviour relative to knowledge. Hilgert et al. (2003) found a significant correlation between financial knowledge and financial behaviour. They achieved this through the link between housing counselling (which includes advice about managing mortgage repayments, budgeting and other skills relevant to buying a house) and lower delinquency and default rates.

The findings of Nyamute and Maina (2010) show that most respondents embrace a savings culture displayed as by their setting aside of some money out of each payment they receive. There is a significant difference between the means of the financial literate and the non-finance respondents. Those who were financially literate recorded a mean of 3.688, while those who are not had a mean of 3.492 out of the maximum 5.0 points. Most financially educated respondents were always looking for other opportunities to save money, setting aside money for future needs, and saving out of each payment they received unlike their counterparts.

The student t-test of equal means gives a p-value of 0.01989 at a five percent significance level; clearly indicating that there is a significant difference between the saving practices of the finance and the non-finance respondents. The results could be attributed to the fact that the financially literate respondents have an appreciation of causes and consequences of business bankruptcies and are able to apply the logic to their own situations.

Many financial experts agree that having a household budget is a characteristic of good financial management practice. The research findings showed that more respondents who are financially literate track all or some of their expenses with a mean of 3.67 compared to their counterparts who registered a mean of 2.00. Both categories however display similar trends when it comes to comparing prices for all major expenses with means of 4.13 and 4.02, respectively.

The best way to really know where the money is going is by tracking spending each day. Only then can spending change. Those financially literate recorded a mean of 3.67 compared to 2.00 for those who are not. A very small percentage in both categories spends more than they can afford; recording a mean of 1.94 and 1.93, respectively. Spending more than one makes can lead to unnecessary debt burdens for the individuals. Debts and especially consumption debt can negatively change the course of one's life (Monyoncho, 2007). About three in ten of those interviewed did not have a spending plan.

Nyamute and Maina (2010) show that most respondents embrace good expenditure practices, especially in the area of comparing prices for major expenses. Statistically, they found a significant difference between the means of the financially literate and the non-finance respondents. Those who were financially literate recorded a mean of 3.34, while those who were not had a mean of 2.27 out of the maximum 5.0 points. The student t-test of equal means gave a p-value of 0.046124 at a five percent significance level indicating that there is a significant difference between the expenditure practices of the finance and the non-finance respondents.

Although many respondents were aware of existing investment instruments a much lower numbers had made investment commensurate to the knowledge. Lusardi et al. (2010) found that those who were financially literate had a higher mean (3.63) in investments practices compared to the mean of those who were not (3.51). The findings show that there is no significant difference between the finance and the non-finance respondents as far as investment practices are concerned. Those who were financially literate recorded a mean of 3.63, while those who were not had a mean of 3.51 out of the maximum 5.0 points. The student t-test of equal means gave a p-value of 0.38403 at a five percent significance level indicating that the two means are not significantly different. These findings may be an indication that saving does not necessarily lead to investment.

Financial literacy in Ghana

Atia (2012) reports that financial literacy is generally low in Ghana. He indicates that Ghanaians did not have adequate financial knowledge and skills to make informed judgments and decisions on management of their finances, as well as understanding details of financial products and services. There is a large section of the people who know very little about investing, about mutual funds, about private pension and about compound interest. Atia points out that lack of knowledge of financial and investment opportunities was preventing majority of people from accessing benefits from the sector, adding that when people were enlightened about the various opportunities in the financial sector; it could help increase savings and investment to support growth of the economy.

Anane (2009) mentions that results of two surveys conducted in 2007 and 2009 to ascertain the depth of financial literacy amongst urban and rural adult Ghanaians, established that 43 percent of those surveyed did not have full or correct information on what they needed for successful financial planning. Government of Ghana therefore believed in promoting financial literacy to empower consumers and small business to better understand and manage financial risk, deal effectively with market complexity and take advantage of increasing competition in the financial sector towards a stronger economic growth.

The Government of Ghana approved the National Financial Sector Strategic Plan in 2003. The strategic plan aims, among other things, to:

1. Create awareness and educate consumers on access to financial services
2. Make consumers understand their rights and responsibilities as clients of financial services
3. Change attitudes to translate knowledge into behaviour

The strategic plan suggests that Ghanaians should know and understand financial literacy which is expected to impact behavioural change in them. In order to further these objectives, an annual Financial Literacy Week was launched in September 2008 and has been celebrated annually since then. The Week was instituted to deepen financial intermediation, raise awareness, broaden financial inclusion, instil financial discipline among Ghanaians, and enhance public understanding of the range of products and services being offered by financial institutions (Abubakar, 2009). In other

words, the objective of the week was to help consumers to better understand the need to manage their finances.

The financial sub-sectors, the banking industry, insurance industry and the securities industry, undertake various financial education programmes during the week. There is usually a public forum on finance held simultaneously in selected locations in six regions, including Greater Accra, Ashanti, Brong-Ahafo, Northern, Western and Volta.

According to Abubakar (2009), the youth who are the leaders of tomorrow needs a better understanding of financial issues which will fast-track economic growth in Ghana. Hence the integration of financial literacy in schools, especially at the senior high school level, has been identified as key for financial literacy by of the Ministry of Finance and Economic Planning as well as the Ghana Education Service. The integration of financial issues in schools is supported by the German International Cooperation (GIZ) through Responsible Finance Ghana Project to develop a more detailed content to be addressed under personal financial education in the Senior High Schools. The objective is to equip students at senior high schools with adequate knowledge of basic financial issues and enable them make informed financial decisions as future custodians of financial service providers.

Anane (2009) asserts that government's commitment to continue pursuing measures to set the National Financial Literacy Week on a sustainable path by instituting a financial education endowment fund, decentralisation and increasing the frequency of organisation of financial literacy programmes, furthering the inclusion and enhancement of financial literacy content in Upper Primary and Junior High School curricula of teacher

training colleges, among others. Anane stipulates that one of the most important and prudent lessons of life borders on how to achieve and maintain financial security, yet too few Ghanaians have had the opportunity to learn the basics of money management in school, at work and at home, which behoves on us as individuals and a nation to avail ourselves of opportunities to learn about personal financial skills.

Public sector workers in Ghana

A country's public sector effectiveness and efficiency is imperative to the success of development. The public sector, sometimes referred to as the state sector or the government sector, is a part of the state that deals with either the production, ownership, sale, provision, delivery and allocation of goods and services by and for the government or its citizens, whether national, regional or local/municipal (Boachie-Danquah, 2006).

The composition of the public sector in Ghana is made up of government departments in charge of making available goods and services that each and every citizen values, where the market forces will not provide at all and if they will they will under-provide (Wodzicki, 2007). Broadbent and Guthrie (2008) also view the public sector as an encompassing organisation which provides services to the public that are publicly funded, owned and operated. Examples of public sector activities range from delivering social security, administering urban planning and organising national defence.

Dividing the public sector is carried out in a form of organisational units which are normally called ministries; the Ministries are headed by Ministers who are also members of cabinet. There are two major types of

organisational units (not forgetting the specialised agencies and state-owned enterprises), central agencies and line departments. Each of these units has a particular function to perform or specialisation related to a set of responsibility and authorities, though most of the time they overlap. In a broader perspective, the line departments are focused on the area of policy and programmes in relation to the economic and social sectors, for example, Ministry of Health (Boachie-Danquah, 2006). Central agencies are focused on areas that affect the entire government, for instance the Department of Finance sets budget allocation levels that affect resources available for all departments or government entities (Wodzicki, 2007).

The public sector is seen by Peters (2008) to be central to the effective working of government and the effective governing of society, because it is the fundamental instrument for implementing laws enacted by legislature and providing services to the public. The public service in Ghana has been categorised to comprise the totality of organisational processes and human resources employed by the state to transact the business of governance. In this sense, the confusion of equating the public service with only the civil service is avoided. With the above definition of public sector in line with the constitution, Peters (2008) mentions that the present-day Ghanaian public service as falling into three classificatory scheme – civil service, state-owned enterprise sector and hybrid sector.

Conceptual framework

Although the ability to use knowledge and skills towards achieving financial wellbeing is quite behaviourally based, this study argues that

financial literacy encompasses the complex relationships among financial knowledge, skills, attitudes and behaviour. Figure 1 presents these logical relationships among financial literacy components.

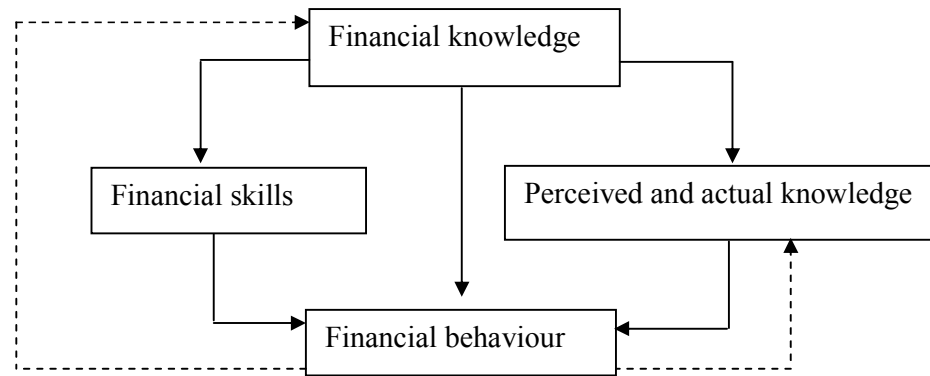


Figure 1: Conceptual model of financial literacy

Source: Adapted from Hung et al., 2011

Financial knowledge which represents a basic form of financial literacy is reflected in perceived financial knowledge and influences financial skills that depend on knowledge. Similarly, one's perceptions on financial knowledge influence his or her financial behaviour. Actual financial knowledge is obtained after an individual uses his or her perceptions to refine financial knowledge. It is therefore hypothesised that an individual with a positive refined or actual knowledge would apply more financial skills than an individual with a negative financial knowledge.

Knowledge and skills in interest rate, budgeting, inflation, investment, debt management, use of banking services and financial negotiations influences financial behaviour for an effective financial literacy. Financial behaviour which helps in the making of better-informed choices in financial

issues, in turn, depends on all three (financial knowledge, financial skills and financial attitudes).

Finally, the experience gained through financial behaviour feeds back to both actual and perceived financial knowledge. Still, the relationships are likely to be imperfect, as each also depends on other factors internal and external to the individual (e.g., attitudes, resources).

CHAPTER THREE

METHODOLOGY

Introduction

This chapter presents the methodology of the study. It describes the procedure used to collect and analyse the data. It includes a description of the Cape Coast Metropolis, study design, study population, sample and sampling procedures, method of data collection, ethical consideration, field work, field challenges and data management.

Study area

The Cape Coast Metropolis is the capital and one of the 17 districts in the Central Region. The Metropolis lies within latitudes $5^{\circ}.07'$ to $5^{\circ}.20'$ north of the Equator and between longitudes $1^{\circ}.11'$ to $1^{\circ}.41'$ west of the Greenwich Meridian. It is bounded on the south by the Gulf of Guinea, west by the Komenda-Edina-Eguafo-Abrem Municipal, east by the Abura-Asebu Kwamankese District and north by the Twifu-Hemang-Lower Denkyira District. The Metropolis covers an area of 122 square kilometres and is the smallest metropolis in the country (CCMA, 2006). The total population is 118,106 out of which 57,365 are males and 60,741 are females.

The Metropolis is an exciting blend of old and new, urban and rural, traditional culture and cosmopolitan culture. This has created vast opportunities for private sector organisations including financial institutions. The Municipal area has a wide range of financial institutions. Among them are Barclays Bank of Ghana Limited, Ghana Commercial Bank Limited, SG-SSB Bank Limited, Agricultural Development Bank Limited, National Investment

Bank, Zenith Bank Ghana Limited, UT Bank, Prudential Bank Limited, ProCredit Bank Limited, First National Bank Limited, HFC Bank Limited, Kakum Rural Bank, Assinman Rural Bank Limited, Twifo Rural Bank Limited and Bayport Financial Services. The public sector institutions in the Metropolis comprise workers in the civil service (education, health, Ministries, departments, and local government), state-owned-enterprise sector (Ghana Post Company Limited, Community Water and Sanitation Agency, Electricity Company of Ghana Limited, Ghana Water Company Limited, and Ghana Broadcasting Corporation) and hybrid sector (public universities and polytechnics).

Research design

Quantitative research design was adopted as the primary approach to collecting and analysing data. Onwuegbuzie and Leech (2004) define quantitative research design as an approach in which quantitative techniques in the form of descriptive and inferential statistics are used to describe issues in a study. Onwuegbuzie and Leech categorise quantitative research method into two: experiments and surveys. The study however, adopted the survey method of quantitative research design.

Quantitative research design was used to produce quantitative or numerical descriptions of the level of financial literacy among public sector workers in the Cape Coast Metropolis. The quantitative research design enabled the researcher to control errors that might have distorted the findings of the study as well as used scientific principles to select and analyse the data. However, the use of this research approach required a lot of scientific cautions

and principles which when violated could distort findings (Creswell & Plano, 2011).

Study design

The study adopted cross-sectional and descriptive study designs. Neuman (2006) indicates that a cross-sectional study design entails observation of a subset of a population, description of the current nature and conditions that exists, studying of the relationship between different variables at a single point in time and showing how variables affect each other. It therefore used the design to examine the levels of knowledge and application of financial literacy among public sector workers in the Cape Coast Metropolis.

A descriptive study design involves compromise or contrast and attempts to discover relationships between existing variables (Sarantakos, 2005). As a descriptive study, it was designed to obtain relevant and accurate information on financial literacy among public sector workers in the Cape Coast Metropolis. The design combined both quantitative and qualitative tools to determine the relevance and challenges associated with financial literacy education. It used the descriptive study design to observe and describe events and then organise, tabulate, depict and describe the data collection on the levels of knowledge and application of financial literacy.

Study population

The population of the study constituted all public sector workers in the Cape Coast Metropolis. The Cape Coast Metropolitan Assembly (CCMA) (2012) estimates a total of 13,163 public sector workers in the metropolis. This comprises 4980 civil servants, 734 workers from the state-owned-enterprises and 7449 hybrid sector workers.

Sample and sampling procedure

The sampling frame for the study comprised lists of public sector workers in the Cape Coast Metropolis. According to Krejcie and Morgan (1970), a population of 13,163 requires a sample size of 375 to ensure representativeness. A multi-stage sampling procedure was used to sample respondents for the study. Creswell (2002) defines multi-stage sampling as a process of taking sample in series of steps with the sampling portions constituting the sample (units or increments) at each step being selected from the larger or greater number of portions of the previous step, or from a primary or composite sample. This method is used when the population is very large and extensive. Multi-stage sampling was used due to the vast number of public sector workers. It was therefore used to structure the sampling process.

With the multi-stage sampling process, the public sector workers were first categorised under the three classifications of public sector workers – state-owned-enterprises, civil service or public administration, and the hybrid sector. The aim of the stratification was to have a fair representation of public sector workers from each category as well as conduct comparative analyses on financial literacy among the various categories of public sector workers.

Second, the study further categorised the public sector workers in each classification under the various working groups that fall under them. Workers under state-owned-enterprises were grouped under the Electricity Company of Ghana Limited (ECG), Ghana Water Company Limited (GWCL), Community Water and Sanitation Agency (CWSA), and Ghana Post Company Limited (GPCL). Civil servants were also grouped under the Ghana Education Service (GES), Ghana Health Service (GHS), Ministries, Departments and Local government. Similarly, workers under the hybrid sector were grouped under the university and polytechnic.

To have a fair representation of respondents from the various categories of public sector workers, equal number of working groups were selected from each classification. Two working groups were selected from each group. This was because the hybrid sector has two working groups. Both purposive and random sampling techniques were used to sample the working groups from the classifications. Thus, purposive sampling technique was used to sample the two workers groups under the hybrid sector. Workers under GES were also purposively sampled from the civil servants because they formed the majority of the group. Random sampling technique were used to sample two workers groups under the state-owned-enterprises and one worker group under the public administration sector.

Table 2 presents the number of workers in each of the selected workers groups. Equal proportions were assigned to the three groups. Thus, 125 respondents each were sampled from the state-owned-enterprises, civil service, and the hybrid sector. This was done because of the wide differences in the size of population among the various worker groups. In other words, the

large difference between the number of workers under State-owned enterprises and the other two categories was likely to result in the selection of very few respondents from ECG and GWCL compared to the other workers unions. This was likely to affect the representativeness of the number of respondents from such workers groups in relation to their population. Proportionate sampling technique was used to sample respondents from the various workers groups under the groups. Random sampling technique was used to sample respondents from each of the selected workers groups.

The Rand function in Microsoft Excel was used to sample respondents from each category of workers group. The details of the public sector workers were obtained from the parent institutions. In other words, details of education workers were obtained from GES, details of university workers were obtained from the Division of Human Resource at the University of Cape Coast, while details of polytechnic workers were obtained from the Human Resource Division of the Cape Coast Polytechnic. The names of a particular workers group were entered into Microsoft Excel. The Rand function in Excel was used to shuffle the names to make sure that they were not in any pre-determined position. The first names that corresponded to the sample sizes of the workers groups were selected for the study. The process was repeated to sample respondents for the other categories. Table 2 presents the total number of workers in each stratum and the sample size for the selected workers groups.

Table 2: Sampling for workers group

Public sector	Workers groups	Number of workers	Proportion to sample	Sample size
	ECG	211	0.55	69
State-owned-enterprise	GWCL	173	0.45	56
	Total	384	1	125
	Education	2679	0.77	96
Civil service	Health	811	0.23	29
	Total	3490	1	125
	University	4658	0.62	78
Hybrid sector	Polytechnic	2791	0.38	47
	Total	7449	1	125
Total		11,323		375

Source: Author's construct, 2013

Data collection method

Data were collected from both primary and secondary sources. The primary data was collected from public sector workers in the Cape Coast Metropolis. The study employed survey data collection method (questionnaire and interview schedule) which is less costly and ensures the standardisation of measurements.

Instrument design

The interview schedules were used for eliciting data from the respondents as Neuman (2006) argues that interview surveys are advantageous

in obtaining in-depth responses to questions, ensuring high response rate, soliciting information from individuals who do not have the ability to read or write, and guaranteeing the completeness of the interview. The use of interview schedule was also used to avoid going over the respondents, who were widely dispersed across the metropolis, to retrieve research instrument. The instrument was divided into four sections. The first section was on the background characteristics of the respondents. The second section was on the level of financial literacy among public sector workers. The third section was on the factors influencing financial literacy among public sector workers, while the fourth section was on the level of application of financial literacy among public sector workers in the Cape Coast Metropolis.

Some of the issues considered under the first section were sex, age, level of household income, household size and marital status. The second section captured issues such as interest rates, savings and investments. The third section considered issues such as access to financial programmes, and level of education. Some of the issues captured under the fourth section were income level, and avenues for application.

Pre-testing

A pre-test exercise was carried out at the Komenda-Edina-Eguafo-Abirem District to help assess the clarity of questions, likely responses and challenges likely to be faced during the actual data collection exercise. It also assessed both face and content validity of the instruments. A reliability test was carried out. After the questions were reviewed, the actual data collection exercise was followed.

Ethical considerations

The ethical issues that were considered in the study include introducing the purpose of the study to the management of the various institutions, seeking the consent of the respondents before soliciting for the data, assuring respondents of the confidentiality of their responses, and preserving their anonymity. The researcher also assured respondents that their responses would be used for only academic purpose. The researcher obtained an introductory letter from the Institute for Development Studies indicating the name of the researcher, and the purpose of the research. The researcher did not collect data on the names of the respondents to assure them of their anonymity.

Field work

Six Research Assistants were taken through ethics in data collection, expected conducts of interviewers and observing institutional protocol. They were also taken through the research instruments to ensure common understanding and interpretation of the research items. In situations where respondents were too busy to be attended to, the interviews were re-scheduled. The field work was organised between May 1 and May 31, 2013.

Field challenges

Some of the challenges encountered were poor record management system in some of the sectors. Thus, delays in updating databases affected the sampling and data collection processes. Transferred workers still had their details with the former station. The study, however, dealt with the list of people who were still available.

Data analysis

Data gathered from the field study were thoroughly edited, coded and verified for grammatical errors and consistency. Raw scores were then fed into the computer and analysed, using Statistical Product and Service Solutions version 15 software. Descriptive statistics such as frequencies and percentages were used. Regression was used to measure the factors influencing financial literacy among public sector workers in the Cape Coast Metropolis. The selection of the factors in the regression model was based on issues in the literature. One-way analysis of variance (ANOVA) was used to examine significant differences in financial literacy among the three categories of public workers. Frequency tables and charts were used to present the findings of the study.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presents the results and discussion of the data gathered. The chapter is structured under the background characteristics of respondents, level of financial literacy among public sector workers, factors influencing financial literacy among public sector workers, and level of application of financial literacy among public sector workers.

Background characteristics of respondents

This section presents the background characteristics of respondents. This was essential because people with different background characteristics may have different levels of financial literacy or different levels of application of financial literacy. Some of the issues considered under the section were sex, age, job rank, level of household income, and level of education. A total of 375 public sector workers were interviewed on their background characteristics. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to analyse issues under this section. Table 3 presents results on the background characteristics of respondents.

The Table shows that a little over half (52.8%) of the respondents were males, while 47.2 percent were females. Thus, there was no massive difference, in terms of proportion, between males and females. This could be due to the fact that both males and females have similar chances of securing employment from the public sector.

Table 3: Background characteristics of respondents

Characteristics	Categories	Frequency	Percent
Sex	Male	198	52.8
	Female	177	47.2
	Total	375	100.0
Age (years)	Below 20	18	4.8
	21 – 30	25	6.7
	31 – 40	139	37.1
	41 – 50	114	30.4
	51 – 60	71	18.9
	Above 60	8	2.1
	Total	375	100.0
Job rank	Junior	108	28.8
	Middle	192	51.2
	Management	75	20.0
	Total	375	100.0
Level of household income (GH¢)	500 and below	99	26.4
	501 – 1000	132	35.2
	1001 – 1500	67	17.9
	1501 – 2000	48	12.8
	Above 2000	29	7.7
Total	375	100.0	
Household size	1 – 2	91	24.3
	3 – 4	184	49.1
	5 – 6	58	15.5
	7 – 8	25	6.6
	Above 8	17	4.5
	Total	375	100.0
Level of education	Basic	59	15.7
	SHS	101	26.9
	Tertiary	215	57.4
	Total	375	100.0

Source: Field survey, 2013

From Table 3, 37.1 percent of the respondents were between 31 and 40 years of age, while 30.4 percent were aged between 41 and 50 years. The age distribution however shows that 2.1 percent of the respondents were above the retirement age in public service. This may be due to some special service they deliver to the public sector. The mean age of the respondents was 38.6 years with a standard deviation of 7.2.

The study further examined the job ranks of the respondents. This was critical because employees of different job ranks may have different levels of perceptions or awareness about financial literacy. Table 3 shows that 51.2 percent of the respondents were middle level staff, whereas 28.8 percent and 20 percent were junior and management level staff, respectively.

The level of household income was perceived to be critical in the examination of financial literacy among public sector workers. This is because the level of household income may determine workers appreciation for long terms financial decisions through savings and investments. It may also influence the willingness or ability of workers to uphold or apply certain financial literacy principles in their activities. The study found that 61.6 percent of the respondents earned GH¢ 1,000 and below as monthly household income, whereas 38.4 percent earned above GH¢ 1,000. The mean monthly household income for the respondents was GH¢ 847.4 with a standard deviation of 87.5.

The respondents were asked to indicate their highest levels of education. This was imperative because people with different levels of education may have different levels of financial literacy. Table 3 shows that majority (57.4%) of the respondents had completed tertiary education,

whereas 26.9 percent and 15.7 percent had completed Senior High School and Basic school, respectively.

Table 3 further presents results on the household sizes of the respondents. This was essential because the size of an individual's household may influence his or her financial decisions. From the Table, majority (73.4%) of the respondents had household sizes between one and four, while 26.6 percent had more than four people in their households. The mean household size of the respondents was 3.6 with a standard deviation of 0.6.

Level of financial literacy among public sector workers

The first research objective sought to examine the level of financial literacy among public sector workers in the Cape Coast Metropolis. This was necessary because the level of financial literacy among public workers has implications on their financial well-being which may also have repercussions on their job performance and commitment. Some of the financial literacy issues captured under the study were interest rate on debt levels and investments, financial risks and opportunities, financial concepts and products of banks, relationship between inflation and return, and depreciation of the value of money.

The section was organised under the financial literacy levels of public sector workers and their background characteristics such as sex, age, levels of education, income levels and job rank. The aim was to examine the relationships and differences in financial literacy among public sector workers with different background characteristics. ANZ (2008) reports that linking financial literacy levels with particular socio-demographic groups is important

because it elucidates the impact of particular traits on financial literacy and behaviour.

Cross tabulation analyses were used to examine the relationships between financial literacy levels and demographic characteristics of respondents. A scale of one to three (1 = low, 2 = normal, 3 = high) was used to examine the level of financial literacy among the respondents. Mean score for low ranged from 1.0 – 1.99, normal ranged from 2.0 – 2.99, and high ranged from 3.0 – 3.99. Under this section, high mean scores (3.0 – 3.99) implies high financial literacy level among the respondents, whereas small mean scores (1.0 – 2.99) implies low level of financial literacy. A total of 375 respondents were requested to indicate their levels of financial literacy under the section. A one-way analysis of variance was used to assess significant difference in the level of financial literacy among the three categories of the public sector.

The section assesses the levels of understanding financial literacy levels between male and female public sector workers in the Cape Coast Metropolis. This was essential because Goldsmith and Goldsmith (2006) and Volpe et al. (2006) identified gender differences in financial literacy. Table 4 presents results on the level of understanding of male and female public sector workers on financial literacy issues.

The Table shows that the male respondents had high (mean = 3.2, stdv. = 0.87) level of understanding on interest rate on debt levels, while female respondents had normal (mean = 2.8, stdv. = 0.74) level of understanding. This may be due to the fact that males are mostly the heads of their households and are responsible for settling household debts. Thus, males, as household

heads, may be more concerned about the state and rate of increase of household debts levels. As a result, they are more likely to gain deeper understanding on interest rate on debt levels than females. The results corroborate the findings of Jappelli (2010) that being male is associated with greater financial knowledge.

Table 4: Levels of financial literacy between male and female public sector workers

Financial literacy issues	Male		Female	
	Mean	Stdv.	Mean	Stdv.
Interest rate on debt levels	3.2	0.87	2.8	0.74
Interest rate on investments	2.7	1.2	2.2	0.69
Financial risks and opportunities	1.9	0.49	1.8	0.51
Financial concepts and products of banks	2.2	0.63	1.5	0.75
Prediction of financial position based on existing financial circumstances	2.8	0.92	2.4	0.83
Prediction of the value of products over time based on existing market conditions	1.7	0.32	1.4	0.58
Relationship between inflation and return	1.4	0.81	1.6	0.74
Relationship between inflation and prices	2.5	0.72	2.0	0.78
Depreciation of the value of money	2.1	0.61	3.0	0.88
Opportunity cost of financial decisions	1.4	0.22	1.5	0.40
Ability to interpret financial information	2.6	0.93	1.9	0.64
Risk diversification	1.5	0.41	1.7	0.59

Source: Field survey, 2013

Table 4 further shows that both male and female respondents had normal levels (male – mean = 2.7, stdv. = 1.2; female – mean = 2.2, stdv. = 0.69) of understanding on interest rate on investments. The implication is that public sector workers were more concerned about interest rates on debt levels than interest rates on investments. This could be that interest rate on debt levels reduces household disposable income which may negatively affect the socio-economic conditions of household members, whereas interest rate on investments positively affect the socio-economic conditions of people. Thus, the workers were more concerned about the deterioration of their socio-economic status from interest rates than the positive impacts.

From Table 4, both male and female respondents had low levels (male – mean = 1.9, stdv. = 0.49; female – mean = 1.8, stdv. = 0.51) of understanding on financial risks and opportunities. This is likely to affect the extent to which public sector workers in the Metropolis gain financial opportunities to enhance their financial well-being. In addition, the low level of understanding on financial risks is likely to cause some respondents to attract avoidable debts, which may negatively affect their financial well-being. This is because Bucher-Koenen and Lusardi (2010) observe that low financial knowledge leads to poor financial behaviour and attitude which further impoverish the financial well-being of people. Lusardi et al. (2010) also found that poor financial knowledge and behaviour creates money problem behaviours such as over-indebtedness, overspending, unwise use of credit, bad spending decisions, poor money management and inadequacy of money to make ends meet.

However, the Table shows that the female respondents had high level (mean = 3.0, stdv. = 0.88) of understanding on depreciation of the value of money, whereas males had normal level (mean = 2.1, stdv. = 0.61) of understanding. This could be attributed to the fact that females are responsible for domestic activities and more often interact with prices of goods from the market than the males. As a result, females are better able to determine the real value of money, in terms of the quantity and kinds of goods the same amount of money could have bought previously from the same source. The implication is that the socio-cultural role of both males and females help to influence their levels of understanding on financial literacy issues in the Cape Coast Metropolis. This is in line with Agnew and Szykman (2005) that the socio-cultural roles assigned to both gender groups is essential in understanding the differences in their perceptions and performances.

The study further examined the levels of understanding of financial literacy issues among public sector workers in different age cohorts. This was imperative because Agarwal and Mazumder (2010) indicate that the unique experiences of people from different generations implies that people from different age cohorts may have different levels of financial literacy. The results are presented in Table 5.

Table 5 shows that there is a positive relationship (below 20 – mean = 1.7, stdv. = 0.42; 21 – 30 – mean = 3.2, stdv. = 0.70; 31 – 40 – mean = 3.3, stdv. = 0.58; 41 – 50 – mean = 3.5, stdv. = 1.67; 51 – 60 – mean = 3.8, stdv. = 0.66; Above 60 – mean = 3.8, stdv. = 0.57) between age and understanding of public sector workers on interest rate on debt levels. In other words, the workers understanding on interest rate on debt levels increased as their ages

increased. Table 5 further shows that there is a positive relationship between age and understanding of public sectors on interest rate on investments.

The results mean that the workers gain more financial knowledge on interest rates as they grow. This may be due to high number transactions with financial institutions through increased responsibilities as people grow. Generally, people's responsibilities gradually increase from the early adulthood when they start working, through marriage, family keeping, preparation towards pension and retirement. Thus, some of the responsibilities add to the previous ones which demand proper understanding on some financial issues for good financial judgements and decisions. As a result, workers gain more financial knowledge on some financial issues to better attend to the increasing responsibilities.

The results disagree with the findings of the ANZ Banking Group (2008) in Australia and New Zealand that there is an inverse u-shaped age profile of financial knowledge, meaning that middle-aged adults have higher financial knowledge than their younger and older counterparts. This could be attributed to the fact that people in developing countries, and for that matter Ghana, have little access to financial education compared to those in developed countries. As a result, people in developing countries gain certain financial knowledge through their experiences with financial institutions. In most cases, such experiences are used to either contract loans or invest to ensure better management of people's responsibilities. Consequently, increased responsibilities through age imply more interactions with financial institutions which further enhance the understanding of the older people's knowledge on interest rates on debt levels and investments.

Table 5: Levels of financial literacy among age cohorts

Financial literacy issues	Below 20		21 – 30		31 – 40		41 – 50		51 – 60		Above 60	
	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.
Interest rate on debt levels	1.7	0.42	3.2	0.70	3.3	0.58	3.5	1.67	3.8	0.66	3.8	0.57
Interest rate on investments	1.6	0.33	2.3	0.79	2.6	0.82	3.0	0.92	3.1	0.58	3.5	0.66
Financial risks and opportunities	1.9	0.81	1.7	0.52	2.8	0.63	2.4	0.79	2.7	0.65	2.9	0.77
Financial concepts and products of banks	2.5	0.41	2.8	0.63	2.3	0.88	2.7	0.60	3.3	0.77	3.2	0.83
Prediction of financial position based on existing financial circumstances	2.2	1.1	2.5	0.47	2.7	0.70	2.6	1.3	3.1	1.1	3.8	1.6
Prediction of the value of products over time based on existing market conditions	1.5	0.27	1.9	0.49	1.7	0.61	2.1	0.44	2.6	0.51	2.8	0.92
Relationship between inflation and return	1.3	0.38	1.7	0.82	2.4	0.84	2.9	0.74	2.6	0.90	2.4	0.75
Relationship between inflation and prices	2.2	0.60	2.5	0.75	3.1	0.92	3.2	0.61	3.0	0.74	3.4	0.88
Depreciation of the value of money	2.5	0.33	3.1	0.59	3.0	0.78	3.6	0.92	3.4	0.85	3.7	0.78
Opportunity cost of financial decisions	1.2	0.29	1.8	0.76	2.6	0.59	2.9	0.77	3.1	0.71	3.1	0.49
Ability to interpret financial information	1.6	0.64	2.6	0.81	3.0	0.74	3.3	1.1	3.7	0.55	3.6	0.68
Risk diversification	1.5	0.91	2.8	0.77	1.8	0.93	2.9	0.79	2.8	0.63	2.7	0.71

Source: Field survey, 2013

Table 5 further shows that the respondents below 20 years of age and those within 21 – 30 and 31 – 40 age cohorts had low levels (below 20 – mean = 1.5, stdv. = 0.27; 21 – 30 – mean = 1.9, stdv. = 0.49; 31 – 40 – mean = 1.7, stdv. = 0.61) of understanding on the prediction of the value of products over time based on existing market conditions. However, respondents within 41 – 50, 51 – 60, and above 60 age cohorts had normal levels (41 – 50 – mean = 2.1, stdv. = 0.44; 51 – 60 – mean = 2.6, stdv. = 0.51; above 60 – mean = 2.8, stdv. = 0.92) of understanding on the prediction of the value of products over time based on existing market conditions.

The low and normal levels of understanding of public sector workers on the prediction of the value of products over time based on existing market conditions imply that public sector workers are in most cases unable to safeguard the long term value of their products. This shows that public sector workers require financial education on the prediction of the value of products to help improve their understanding and application of financial knowledge in their activities to improve their financial well-being.

The study also analysed the level of financial literacy among public sector workers in different job ranks. This was essential because Bucher-Koenen and Lusardi (2010) indicate the employees of different job category or rank have different perceptions and understanding on financial literacy issues. Table 5 shows that public sector workers in all the three job ranks had high levels (junior – mean = 3.3, stdv. = 0.72; middle – mean = 3.8, stdv. = 0.85; management – mean = 3.8, stdv. = 0.70) of understanding on interest rate on debt levels. The implication is that public sector workers had high levels of understanding on interest rate on debt levels.

The Table further shows that the junior ranked respondents had low level (mean = 1.8, stdv. = 0.61) understanding on financial concepts and products of banks, the middles ranked respondents had normal level (mean = 2.3, stdv. = 0.89) of understanding, while the management ranked respondents had high level (mean = 3.1, stdv. = 0.87) of understanding. The implication is that the junior ranked public sector workers may not be able to benefit from high-yielding investment products from financial institutions.

Table 6: Levels of financial literacy among different job ranks

Financial literacy issues	Junior		Middle		Management	
	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.
Interest rate on debt levels	3.3	0.72	3.8	0.85	3.8	0.70
Interest rate on investments	2.3	0.94	3.1	0.78	3.6	0.99
Financial risks and opportunities	1.8	0.61	2.7	0.63	3.2	0.73
Financial concepts and products of banks	1.4	0.58	2.3	0.89	3.1	0.87
Prediction of financial position based on existing financial circumstances	1.9	0.67	2.5	0.72	2.9	0.31
Prediction of the value of products over time based on existing market conditions	1.5	0.38	2.1	0.81	2.6	0.79
Relationship between inflation and return	1.4	0.70	1.8	0.44	2.5	0.55
Relationship between inflation and prices	2.1	0.85	2.4	0.60	3.0	0.49
Depreciation of the value of money	2.0	0.77	3.2	1.3	3.7	0.58
Opportunity cost of financial decisions	1.7	0.99	1.8	0.65	2.3	0.63
Ability to interpret financial information	1.8	0.74	2.8	0.82	3.4	0.90
Risk diversification	1.8	0.49	2.6	0.66	2.6	0.78

Source: Field survey, 2013

This may contribute to deteriorate the financial well-being of low-ranked public sector workers. On the other hand, the high level of understanding of the management ranked respondents is likely to enable such workers to benefit from high-yielding investments from financial institutions.

From Table 6, the junior-ranked respondents had low level (mean = 1.8, stdv. = 0.49) of understanding on the interpretation of financial information, the middle-ranked respondents had normal level (mean = 2.8, stdv. = 0.82) of understanding, whereas management had high level (mean = 3.4, stdv. = 0.90) of understanding. The results show that the level of understanding about the ability to interpret financial information is positively related to job rank. Thus, respondents from the management rank category had higher levels of understanding than the middle and junior rank respondents on the level of understanding to interpret financial information. This may be due to the fact that management and middle levels staff sometimes handle financial issues at work.

Table 6 further shows that both the junior and middle level staff had low levels (junior – mean = 1.7, stdv. = 0.99; middle – mean = 1.8, stdv. = 0.65) of understanding on the opportunity cost of financial decisions, while the management staff had normal level (mean = 2.3, stdv. = 0.63) of understanding. The implication is that public sector workers generally do not have proper understanding on the opportunity cost of financial decisions. This is likely to affect the responsiveness of their financial decisions since they may not be able to consider other necessary possible options before taking financial decisions.

It could also be deduced from Table 6 that the junior level staff had low level (mean = 2.0, stdv. = 0.77) of understanding on the depreciation of the value of money, while the middle and management staff had high (middle – mean = 3.2, stdv. = 1.3; management – mean = 3.7, stdv. = 0.58) levels of understanding. The implication is that respondents from all levels of job rank understood the issue about depreciation of the value of money. This could be due to their assessment of the reduction in the actual goods and services they can use their salaries to procure. Thus, reduction in the ‘market value’ of the salaries of workers was used to understand the depreciation of the value of money. The implication is that financial literacy could be gained through the practical experiences of workers through their continuous interaction with prices and market forces in their commercial activities.

Another issue considered under the first research objective was the level of financial literacy among workers with different levels of household monthly income. This was very crucial because Mandell (2007) expresses that the size of an individual’s income influences his or financial attitude, financial decisions and behaviour. However, Lusardi and Tufano (2008) also indicates that the level of influence of size of income on an individual’s financial behaviour is determined by the relationship between income size and his or her immediate or basic needs. Table 7 presents the levels of financial literacy among workers with different levels of household monthly income.

The Table shows that the respondents with household monthly income of GH¢ 500 and below, and between GH¢ 1001 and 1500 had low levels (GH¢ 500 and below – mean = 1.8, stdv. = 0.57; GH¢ 1001 – 1500 – mean = 1.9, stdv. = 0.92) of understanding on financial risks and opportunities.

Table 7: Levels of financial literacy among respondents with different levels of household monthly income

Financial literacy issues	GH¢ 500 and below		GH¢ 501 – 1000		GH¢ 1001 – 1500		GH¢ 1501 – 2000		Above GH¢ 2000	
	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.
Interest rate on debt levels	2.2	0.72	3.1	0.65	3.1	0.85	3.4	0.99	3.8	0.80
Interest rate on investments	1.6	0.48	2.8	0.59	3.4	0.67	3.6	0.85	3.6	0.63
Financial risks and opportunities	1.8	0.57	2.1	0.80	1.9	0.92	2.7	0.72	3.0	0.87
Financial concepts and products of banks	1.5	0.93	1.8	0.77	2.6	0.81	2.7	0.59	3.2	0.48
Prediction of financial position based on existing financial circumstances	1.6	0.64	2.2	0.90	2.8	0.88	3.0	0.65	3.3	0.78
Prediction of the value of products over time based on existing market conditions	1.5	0.87	1.5	0.93	2.3	1.07	2.5	0.72	2.6	0.57
Relationship between inflation and return	1.4	0.44	1.8	0.69	2.5	0.77	2.9	0.81	3.0	0.52
Relationship between inflation and prices	2.8	0.59	3.2	0.85	3.0	0.63	3.7	0.75	3.4	0.89
Depreciation of the value of money	3.1	0.98	3.5	0.74	3.4	0.83	3.5	0.79	3.7	0.66
Opportunity cost of financial decisions	1.7	0.85	1.6	0.69	2.3	0.55	2.0	0.84	2.6	0.75
Ability to interpret financial information	2.0	0.74	1.9	0.36	2.4	0.69	2.5	0.80	3.2	0.90
Risk diversification	1.4	0.72	1.9	0.68	2.6	0.58	2.8	0.48	3.2	0.73

Source: Field survey, 2013

Those who earned between GH¢ 501 and 1000 (mean = 2.1, stdv. = 0.80), and between GH¢ 1501 and 2000 (mean = 2.7, stdv. = 0.72) had normal levels of understanding on financial risks and opportunities, while those who earned above GH¢ 2000 had high level (mean = 3.0, stdv. = 0.87) of understanding. The results show that there is no direct progression on the levels of understanding about financial risks and opportunities among the workers with different levels of household monthly income. Thus, those with household monthly income between GH¢ 501 – 1000 had better level of understanding than those earning between GH¢ 1001 – 1500. This could be attributed to the fact that knowledge about financial risks and opportunities is about individual preference and the influence of people surrounding the individual.

Table 8 further shows that the workers who earned GH¢ 500 and below low level (mean = 1.6, stdv. = 0.64) of understanding on predicting future financial position based on existing financial circumstances, those who earned between GH¢ 501 and 1000 (mean = 2.2, stdv. = 0.90), and between GH¢ 1001 and 1500 (mean = 2.8, stdv. = 0.88) had normal levels of understanding, while the workers who earned between GH¢ 1501 and 2000 (mean = 3.0, stdv. = 0.65), and above GH¢ 2000 (mean = 3.3, stdv. = 0.78) had high levels of understanding. The results show that the levels of understanding on the prediction of financial position based on existing market conditions increased as the household monthly income increased. The implication is that public sector workers with low household monthly income had poor financial forecasting abilities. This is likely to affect their extent of savings and investments as well as their financial decisions. According to

Parker et al. (2011), people's ability to predict their future financial status based on the existing socio-economic conditions influences their investment decisions.

In addition, Table 8 shows that all the workers in the various household monthly income categories, apart from those who earned GH¢ 500 and below, had high levels of understanding on interest rate on debt levels. Thus, workers who earned GH¢ 500 and below had normal level (mean = 2.2, stdv. = 0.72) of understanding on interest rate on debt levels, while the others had mean scores more than 3.0. The implication is that all the workers understood issues on debt rising based on the accruing interest rates. This is likely to enable the workers to avoid contracting loans which they cannot sustainably service the principal with the interest within the repayment period. This is in line with the conceptual framework where people's level of financial knowledge influence their financial behaviour.

Direct application of financial knowledge in financial behaviour could contribute to improve the financial well-being of the public sector workers in the Metropolis as indicated by the human capital theory. According to the human capital theory, financial education or training raises people's confidence and awareness imparting useful knowledge and skills, hence increasing their abilities to make good financial decisions to increase their future financial wellbeing. However, the motivation of the workers to apply such knowledge in their daily activities is conditioned in the conflict between the desire to increase pleasure or to follow social norms as described by the psychoanalysis theory. In Krueger's (1986) explanation of the psychoanalysis theory, he posits that an individual's inherent desire for increasing pleasure or

the social norms may be violated in the pursuit of money which may affect the effective application of financial knowledge and skills.

Differences and similarities in the levels of financial literacy among public sector workers with different household sizes were also analysed by the study. This was imperative because the size of an individual's household influences his or her financial decisions as well as the search for understanding and availability of products and opportunities from financial institutions to address household financial issues.

Table 8 shows that there was generally low level of understanding among the workers with different household sizes on opportunity cost of financial decisions. From Table 8, apart from the workers with household size of 5 – 6 who had normal level (mean = 2.1, stdv. = 0.67) of understanding on the opportunity cost of financial decisions, all the other workers with different household sizes had low levels (1 – 2 – mean = 1.3, stdv. = 0.53; 3 – 4 – mean = 1.8, stdv. = 0.76; 7 – 8 – mean = 1.9, stdv. = 0.81; above 8 – mean = 1.2, stdv. = 0.55) of understanding. This is likely to affect the critical appraisal of the impact of their financial decisions as well as alternative courses of action in financial behaviour of the majority of the public sector workers in the Cape Coast Metropolis.

Table 8 further shows that the public sector workers generally understood the relationship between inflation and prices. Thus, apart from the workers who had more than eight members in their households, all the other workers with different household sizes had either normal or high levels of understanding. From the Table, workers with household size of above eight had low level (mean = 1.7, stdv. = 0.53) of understanding on the relationship

Table 8: Levels of financial literacy among respondents with different household sizes

Financial literacy issues	1 – 2		3 – 4		5 – 6		7 – 8		Above 8	
	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.
Interest rate on debt levels	1.4	0.49	3.5	0.82	3.1	0.76	3.0	0.50	3.2	0.81
Interest rate on investments	1.3	1.01	3.1	0.75	2.9	0.92	3.2	0.43	2.7	0.80
Financial risks and opportunities	2.8	0.33	2.8	0.47	2.1	0.65	1.3	0.39	1.2	0.31
Financial concepts and products of banks	1.7	0.95	2.6	0.50	2.0	0.86	1.9	0.99	2.0	0.47
Prediction of financial position based on existing financial circumstances	1.3	0.87	2.4	0.72	1.5	0.77	2.3	0.80	1.4	0.79
Prediction of the value of products over time based on existing market conditions	1.5	0.23	2.2	0.44	1.3	0.83	1.4	0.48	1.7	0.77
Relationship between inflation and return	1.4	0.78	2.0	0.95	1.7	0.59	1.8	0.71	1.5	0.88
Relationship between inflation and prices	2.2	0.82	3.4	0.93	3.0	1.04	2.3	0.68	1.7	0.53
Depreciation of the value of money	2.8	0.61	3.3	0.60	3.6	0.74	3.2	0.59	2.8	0.84
Opportunity cost of financial decisions	1.3	0.53	1.8	0.76	2.1	0.67	1.9	0.81	1.2	0.55
Ability to interpret financial information	1.9	0.88	3.5	0.95	3.1	0.66	2.7	0.85	2.4	0.47
Risk diversification	1.8	0.43	2.3	0.77	2.7	0.89	1.5	0.73	1.3	0.71

Source: Field survey, 2013

between inflation and prices, those with household sizes of 1 – 2 and 7 – 8 had normal levels (mean = 2.2, stdv. = 0.82; mean = 2.3, stdv. = 0.68) of understanding, whereas those with 3 – 4 and 5 – 6 household sizes had high levels (mean = 3.4, stdv. = 0.93; mean = 3.0, stdv. = 1.04) of understanding. The general understanding of the workers between inflation and prices is likely to enable them to adopt bulk purchasing to avoid frequent price fluctuations and its impact on household budget and other financial behaviours.

Table 8 also shows that the ability to interpret financial information among the public sector workers assumed an inverse u-shape across workers with different household sizes. Thus, workers with household size of 1 – 2 had low level (mean = 1.9, stdv. = 0.88) of understanding to interpret financial information, those with 3 – 4 and 5 – 6 household sizes had high levels (mean = 3.5, stdv. = 0.95; mean = 3.1, stdv. = 0.66) of understanding, while the workers with 7 – 8 and above 8 household sizes had normal levels (mean = 2.7, stdv. = 0.85; mean = 2.4, stdv. = 0.47) of understanding. The results show that the public sector workers across different household sizes generally had the ability to interpret financial information. With knowledge in the interpretation of financial information, the workers would be able to analyse their financial statements and take necessary steps to improve their financial wellbeing.

The study further analysed the level of financial literacy among respondents with different levels of education. The aim was to examine the nature of relationship between levels of education and financial literacy. This was essential because it is generally perceived that people with high levels of

education have higher levels of financial literacy than those with low levels of education. According to Byrnes (2008), on the cognitive theory, an individual's cognitive ability provides the foundation for attaining high levels of financial literacy. Details of the results are presented in Table 9.

Table 9 shows that there was a positive trend in the levels of understanding among the workers with various levels of education on predicting the value of products over time based on existing market conditions. The Table shows that public sector workers with basic level of education had low level (mean = 1.9, stdv. = 0.75) of understanding on predicting the value of products over time based on existing market conditions, those with Senior High School (SHS) education had normal (mean = 2.7, stdv. = 0.78) level of understanding, whereas workers with tertiary education had high level (mean = 3.1, stdv. = 0.91) of understanding.

The implication is that public sector workers with high levels of education are more able to estimate the extent of appreciation and depreciation of the value of products and assets over time than those with low levels of education. This could be attributed to the fact that estimation of depreciation over time is quite technical and requires deeper understanding in financial forecasting which is mostly associated with high learning. The implication is that level of education is more positively related to levels financial literacy. This corroborates the assertion of Lyons et al. (2007) that a higher level of education is usually associated with a better understanding of credit reports and credit scores and a higher degree of financial knowledge in general.

Table 9: Levels of financial literacy among respondents with different levels of education

Financial literacy issues	Basic		SHS		Tertiary	
	Mean	Stdv.	Mean	Stdv.	Mean	Stdv.
Interest rate on debt levels	3.0	0.81	3.5	0.80	3.9	0.83
Interest rate on investments	2.3	0.74	3.1	0.91	3.7	0.65
Financial risks and opportunities	1.4	0.45	1.9	0.85	3.0	0.98
Financial concepts and products of banks	1.8	0.79	2.0	0.66	2.7	0.59
Prediction of financial position based on existing financial circumstances	1.3	0.51	2.0	0.53	3.5	0.78
Prediction of the value of products over time based on existing market conditions	1.9	0.75	2.7	0.78	3.1	0.91
Relationship between inflation and return	1.6	0.48	1.9	0.65	2.4	0.84
Relationship between inflation and prices	2.4	0.69	2.8	0.82	3.6	0.72
Depreciation of the value of money	3.0	1.08	3.3	0.95	3.7	0.99
Opportunity cost of financial decisions	1.4	0.80	1.8	0.76	2.8	0.63
Ability to interpret financial information	1.5	0.59	2.0	0.81	3.0	0.74
Risk diversification	1.3	0.47	1.8	0.74	2.2	0.66

Source: Field survey, 2013

It is also shown in Table 9 that all the respondents had high levels (basic – mean = 3.0, stdv. = 0.81; SHS – mean = 3.5, stdv. = 0.80; tertiary – mean = 3.9, stdv. = 0.83) of understanding on interest rate on debt levels. This is likely to enable the workers to avoid contracting loans which they may not be able to service the principal with the interest within the maturity period. The table further

shows that the majority of workers across the various levels of education had low levels of understanding on the relationship between inflation and return.

This was because the workers with basic and SHS levels of education had low levels (mean = 1.6, stdv. = 0.48; mean = 1.9, stdv. = 0.65) of understanding on the relationship between inflation and return, whereas those with tertiary level of education had normal level (mean = 2.4, stdv. = 0.84) of understanding. The implication is that the majority of the public sector workers may not be able to estimate the balance between price increases and returns on investments. This would affect their decisions on whether to liquidate certain investments for current spending based on the returns in relation to inflation or to maintain them when the returns are higher than the margin and rate of change in inflation.

The respondents were asked to indicate their knowledge about people and institutions to seek for clarity in financial matters. This was very crucial because such knowledge may bridge the gap between low levels of understanding of public sector workers on particular financial issues and their levels of application of financial literacy issues in their activities. The study found that the majority (63.7%) of the respondents admitted to having people and institutions to seek for clarity in financial matters, while 36.3 percent denied having such people and institutions. The implication is that the majority of the respondents could adopt improved and economically viable financial behaviours irrespective of their level of financial literacy. The results further imply that having people and institutions to seek for clarity in financial matters could act as an intermediate variable in the

interaction between levels of financial literacy and levels of application of financial literacy issues among the public sector workers in the Metropolis.

The confidence level of people in their financial decisions is considered essential in the examination of the level of financial literacy. According to the ANZ (2008), people with high levels of financial literacy are expected to have high confidence in their financial decisions. The respondents were, therefore, requested to indicate their level of confidence in their financial decisions. The results are presented in Figure 2.

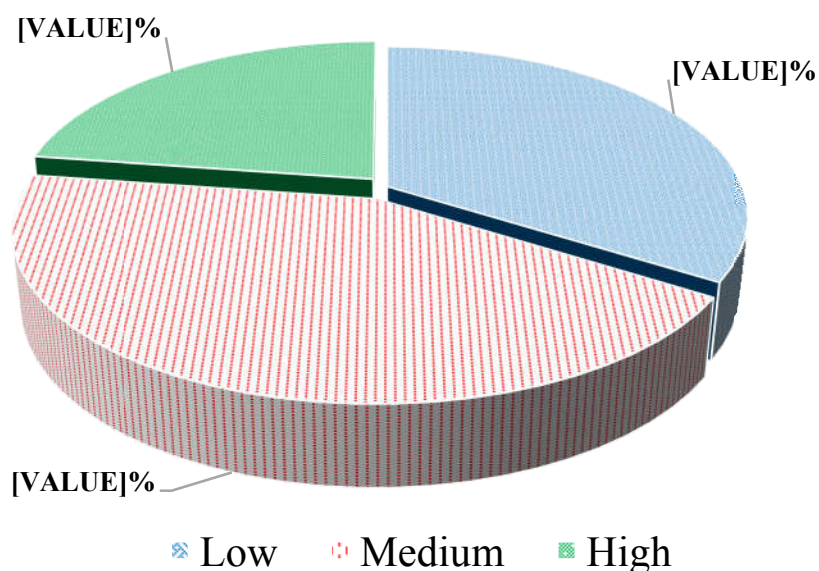


Figure 2: Level of confidence in financial decisions

Source: Field survey, 2013

Figure 2 shows that 22.7 percent of the respondents had low confidence in their financial decisions, 43.4 percent had medium level of confidence, whereas 33.9 percent had high confidence. The low level of confidence of some of the respondents in their financial decisions may affect their ability to invest in high

yielding financial investments within the shortest possible time. This is because such people need others to convince them before they can subscribe to some financial investments. On the other hand, the medium or high level confidence of some of the respondents is likely to enable them to take quick advantage in financial investments and opportunities.

Another issue considered under the first research objective was the perception of the respondents on the importance of budgeting of personal activities. This was important because Lusardi et al. (2010) indicate that a major component of financial literacy is the ability to understand financial choices by improving knowledge and skills in budgeting, savings and debt management. The results are presented in Figure 3.

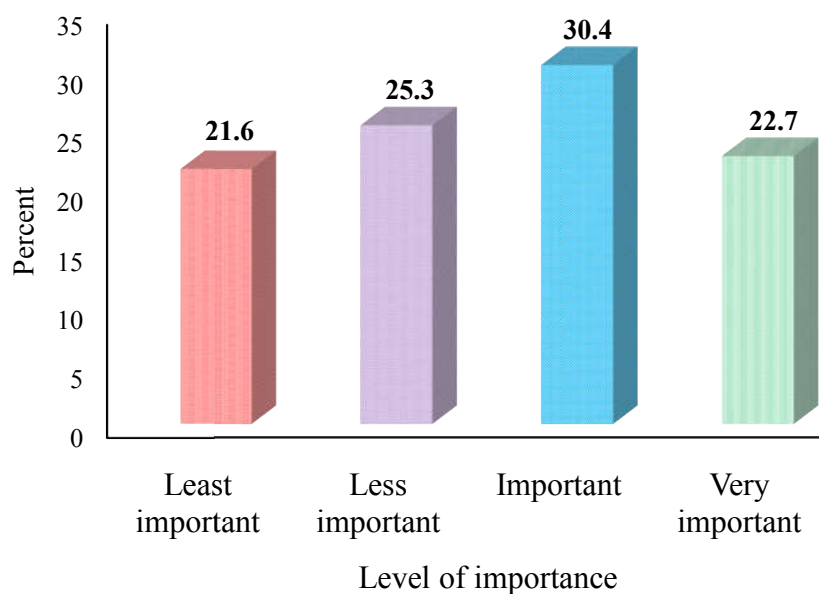


Figure 3: Perception on the importance of budgeting on personal activities

Source: Field survey, 2013

From Figure 3, majority (53.1%) of the respondents perceived budgeting as important and very important in their personal activities, while 46.9 percent perceived it as less important and least important. The implication is that the majority of the respondents are likely to adopt budgeting in their personal transactions. This is likely to help instil order in the financial transactions of the majority of the respondents. This was because Lyons et al. (2007) stated that budgeting of activities instils financial discipline in the financial behaviour and financial management of people and businesses.

The study further examined the level of financial skills of the respondents in making appropriate financial decisions. This was essential because having the necessary skills to make appropriate financial decisions is an indication of an individual's level of financial literacy. The study found that 33.9 percent of the respondents admitted to having low skills in making appropriate financial decisions, 42.6 percent indicated to having medium level skills, while 23.5 percent reported to be having high skills. The implication is that the majority of the respondents had believed in their financial skills in making financial decisions. In other words, the majority had confidence in the appropriateness of their financial decisions.

Another issue considered under the section was the ability of the respondents to communicate about financial matters. This was necessary because Huston (2010) expresses that financial literacy should involve the ability to read, analyse, manage and communicate about the personal financial conditions that affect material wellbeing. The study found that 25.9 percent of the respondents

described their ability to communicate about financial matters as low, 42.1 percent described their ability to do so as medium, while 32 percent described theirs as high. The results show that majority of the respondents are able to communicate about their financial matters. This is likely to enable them to gain more clarifications and financial opportunities to enhance their financial wellbeing. In other words, people's ability to communicate about their financial matters to others enable them to gain technical assistance.

The study further examined differences in the levels of financial literacy among respondents from the state-owned-enterprises, civil service and the hybrid sector. The aim was to assess whether there is significant differences among the levels of financial literacy of respondents from the three categories of the public sector. A one-way analysis of variance was used to analyse the significance of the difference among the three sectors. One-way analysis of variance was deemed appropriate because there was only one independent variable (categories of public sector) which had three categories. Table 10 presents results from the one-way analysis of variance among the three categories of state-owned-enterprises.

Table 10: A one-way analysis of variance in the levels of financial literacy among respondents from state-owned-enterprises, civil service and hybrid sector

Source of Variation	Sum of squares	Df	Mean of squares	F	P-value	Fcrit
Between Groups	621.5	2	108.3	10.4	0.01	5.1
Within Groups	1849	373	277.4			
Total	2470.5	375				

Source: Field survey, 2013

From Table 10, the p-value of 0.01 implies that there is a significant difference in the mean levels of financial literacy among the three categories of the public sector. The implication is that the observed differences in the mean levels of financial literacy as presented in the descriptives in Appendix A is statistically significant. In other words, there was significant difference in the levels of financial literacy among respondents from the state-owned-enterprises, civil service and the hybrid sector.

Factors influencing financial literacy among public sector workers

The second research objective sought to assess the factors influencing financial literacy among public sector workers in the Cape Coast Metropolis. The aim was to examine factors that contribute or inhibit the development of knowledge in financial issues. The analysis of such factors is aimed at identifying the factors that need to be promoted in the process of increasing financial literacy among public sector workers in the Cape Coast Metropolis as well as the factors that need to be suppressed or controlled in the same process. A total of 375 respondents responded to issues under this section. Issues considered under the section were level of financial literacy of the respondents, and factors influencing the level of financial literacy of the respondents.

Regression analysis was used to analyse the factors influencing levels of financial literacy among the public sector workers. The analysis was structured into the relationship between the factors influencing financial literacy and financial literacy levels of respondents, extent to which the selected factors predict

changes in the levels of financial literacy, and the factor that best predicts changes in the level of financial literacy among public sector workers in the Metropolis. The Pearson correlation coefficient was used to assess the statistical significance of the relationship between the factors explaining financial literacy and financial literacy levels of the respondents. Table 11 presents the correlation coefficient of factors influencing financial literacy and financial literacy levels of the public sector workers.

Table 11: Correlation coefficient of factors influencing financial literacy and financial literacy levels of public sector workers

Factors influencing financial literacy	Financial literacy level	Access to financial information	Experience and exposure to finance	Level of education	Sex	Cognitive ability	Household financial wealth	Level of financial responsibility
Financial literacy level	1.00	0.04*	0.46*	0.22*	0.01*	0.20*	0.05*	0.31*
Access to financial information	0.04*	1.00	0.12*	0.18*	0.02*	0.11*	0.03*	0.18*
Experience and exposure to finance	0.46*	0.12*	1.00	0.29*	-0.02*	0.07*	-0.04*	0.23*
Level of education	0.22*	0.18*	0.29*	1.00	0.01*	0.30*	0.03*	0.11*
Sex	0.01*	0.02*	-0.02*	0.01*	1.00	-0.03*	0.02*	0.12*
Cognitive ability	0.20*	0.11*	0.07*	0.30*	-0.03*	1.00	0.07*	0.13*
Household financial wealth	0.05*	0.03*	-0.04*	0.03*	-0.02*	0.07*	1.00	0.01*
Level of financial responsibility	0.31*	0.18*	0.23*	0.11*	0.12*	0.13*	0.01*	1.00

* Significance at $p \leq 0.05$

Source: Field Survey, 2013

From the Table, there was significant positive correlation between financial literacy level, and experience and exposure to finance ($r = 0.46$), level of education ($r = 0.22$), cognitive ability ($r = 0.20$), level of responsibility ($r = 0.31$), household financial wealth ($r = 0.05$), access to financial information ($r = 0.04$) and sex ($r = 0.04$). The implication is that a unit increase in experience and exposure to finance, level of education, cognitive ability, level of financial responsibility, household financial wealth, and access to financial information would increase financial literacy level. The results agree with the findings of ANZ (2008) that differences in socio-demographic factors of people result in changes in their financial literacy levels.

Standard multiple regression analysis was used to assess the factors explaining levels of financial literacy among public sector workers in the Cape Coast Metropolis. This enabled the study to examine how well the selected factors explain changes in the levels of financial literacy among public sector workers as well as the contribution of each of the factors in predicting changes in financial literacy levels. The study first used the normal probability plot to check for outliers, normality, linearity, homoscedasticity, and independence of residuals. Details of the results on the contribution of the selected factors to changes in financial literacy levels among public sector workers are presented in Table 12.

The adjusted R Square value of 0.448 implies that 44.8 percent of changes in the levels of financial literacy are explained by the selected factors (access to financial information, experience and exposure to finance, level of education, sex, cognitive ability, household financial wealth, and level of financial responsibility).

The implication is that other variables explain 55.2 percent of variations in the levels of financial literacy among public sector workers. The significance level (F-statistic) of 0.001, as shown in Table 12 implies that the selected factors have significant influence on variations in the levels of financial literacy among public sector workers in the Metropolis. In other words, the significance level of 0.001 was within the accepted error margin of 0.05.

Table 12: Contribution of the selected factors to financial literacy levels

Model	Unstandardised Coefficients		Standardised Coefficient	T	Sig.
	B	Std. Error	Beta		
(Constant)	373.2	3987.1		0.919	0.366
Access to financial information	70.7	918.6	0.044	0.755	0.539
Experience and exposure to finance	294.9	933.1	0.193	2.711	0.023*
Level of education	200.5	817.4	0.137	1.952	0.036*
Gender	62.1	715.9	0.032	0.504	0.487
Cognitive ability	106.4	883.6	0.061	0.737	0.066
Household financial wealth	91.8	844.7	0.055	0.822	0.163
Level of financial responsibility	107.3	908.9	0.058	0.973	0.062

Adjusted R Square = 0.448, F-statistic = 37.105, Sig (F-statistics) = 0.001

Source: Field Survey, 2013

Predictors: access to financial information, experience and exposure to finance, level of education, gender, cognitive ability, household financial wealth, and level of financial responsibility

Sources of predictors: ANZ (2008); Delavande et al. (2008); Jappelli (2010); Lusardi et al. (2010); Lyons et al. (2007); Monticone (2010); Volpe et al. (2006); Worthington (2006)

Table 12 also examined the unique contributions of each of the selected factors on variations in the levels of financial literacy among public sector workers in the Cape Coast Metropolis. This was imperative to examine how variations in one factor influences changes in the levels of financial literacy among public sector workers. It was also essential to inform stakeholders' decisions on which factors were critical to improve financial literacy levels among public sector workers.

Table 12 shows that experience and exposure to finance made the strongest unique contribution (Beta = 0.193) to explaining variations in levels of financial literacy, when the variance explained by all other factors or variables in the model is controlled for. Comparing the Sig value of 0.023 with the error margin of 0.05 implies that the influence of experience and exposure to finance on financial literacy levels is statistically significant. This corroborates the finding of Worthington (2006) that long exposure to work place financial decisions and transactions enhances financial knowledge and skills. Level of education made the second unique contribution (Beta = 0.137) to explain variations in the levels of financial literacy, when the variance explained by all other variables in the model

is controlled for. Comparing the significance value of 0.036 with the error margin of 0.05 implies that the influence of level of education on levels of financial literacy among public sector workers is statistically significant.

Sex made the least unique contribution (Beta = 0.032) to explaining variations in the levels of financial literacy, when the variance explained by all other variables in the model is controlled for. Comparing the significance value of 0.487 with the acceptable error margin of 0.05 implies that the influence of gender on the levels of financial literacy among public sector workers is not statistically significant. Constructing regression equation for the influence of the selected factors on levels of financial literacy among public sector workers in the Cape Coast Metropolis shows that:

Levels of financial literacy = 373.2 + 294.9 (experience and exposure to finance)
+ 200.5 (level of education).

The equation shows that experience and exposure to finance, and level of education made significant and meaningful impact in the level of financial literacy among public sector workers in the Cape Coast Metropolis. The implication is that efforts to enhance public sector workers' experience and exposure to finance, and levels of education would help to ensure significant increase in their levels of financial literacy in the Cape Coast Metropolis.

Level of application of financial literacy among public sector workers

The third research objective sought to assess the level of application of financial literacy among public sector workers in the Cape Coast Metropolis. This was imperative because Ormrod (2012) argues that the ultimate aim of improving financial literacy among a given populace is to guarantee high level of application of financial skills and good financial behaviour to enhance their financial wellbeing. Per the psychoanalysis theory, the motivation of workers to apply their financial knowledge in their financial behaviour is conditioned in other factors such as pleasure and social recognition. Accordingly, high levels of financial literacy do not necessary or automatically translate into improved financial behaviour and financial discipline.

The section, therefore, examines the extent to which the respondents apply their level of financial literacy in their activities. According to Huston (2010), on the human capital theory, it is the extent of application of financial knowledge and skills that is necessary for financial development and improved wellbeing. Some of the issues considered under the section were frequency of predicting the value of investment, estimating the effect of inflation on investments, comparing financial offers before making decisions, and using most pressing needs to dictate spending. Descriptive statistics were used to analyse issues under this research objective. A total of 375 respondents were requested to respond to issues under this section.

The respondents were requested to indicate if they have started putting measures in place to reach lifetime financial security. This was crucial because the

ultimate goal of the working class in relation to financial literacy and financial behaviour is to guarantee lifetime financial security. From the study, a little of half 51.5 percent of the respondents admitted to putting measures in place to reach lifetime financial security, whereas 48.5 percent denied having instituted such measures. The result shows that majority of the respondents were applying their financial knowledge in their personal activities to ensure their lifetime financial security. The implication is that the majority of the respondents had the motivation to secure their financial wellbeing. Nevertheless, the responsiveness of such measures to guarantee their lifetime financial security may depend on the extent of commitment they attach to the measures, the quantum of resources they commit to the course and the opportunities available to them.

The study also examined the level of confidence the respondents had in their future financial wellbeing based on their current financial skills. This was essential because the level of confidence may inform their motivation to commit adequate resources to their measures to secure future financial wellbeing. The results are presented in Figure 4.

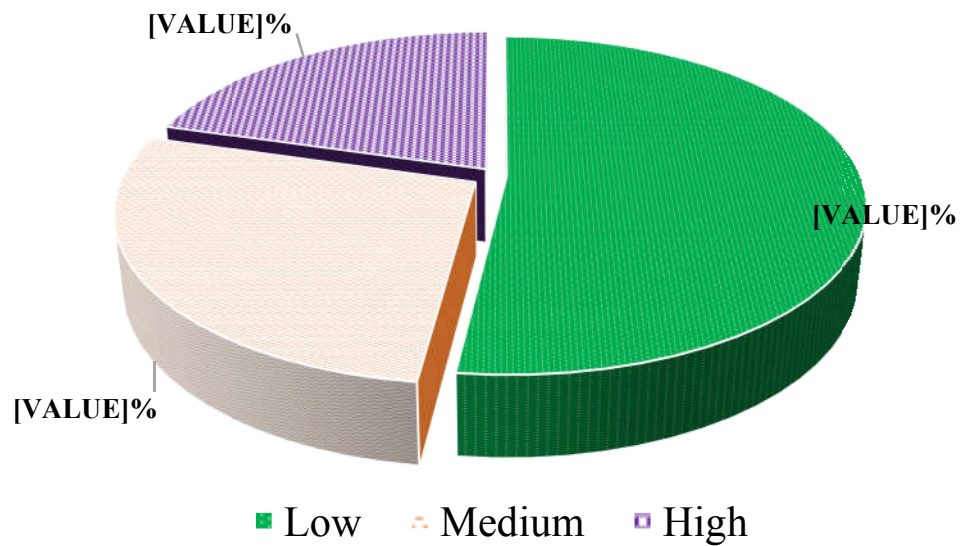


Figure 4: Level of confidence in future financial wellbeing based on the current financial skills

Source: Field survey, 2013

Figure 4 shows that the majority (52%) of the respondents indicated that they have low confidence in their future financial wellbeing based on their current financial skills, while 20.5 percent reported to have high confidence. The results show that the majority of the respondents had low confidence in their abilities and financial skills to guarantee their future financial security. The implication is that majority of the respondents may not be fully committed to the measures instituted to ensure their lifetime financial security. According to Piaget (1983) with the cognitive theory, poor perception of people in their future financial status based on their financial knowledge downgrades their confidence and commitment in their personal effort towards long term financial security and financial wellbeing. Piaget further adds that individuals thinking about financial literacy issues affect subsequent financial decisions and behaviours in their lives.

The respondents were also asked to indicate their level of confidence in the application of their financial knowledge and skills to improve their financial wellbeing. The study found that half (50.1%) of the respondents had low confidence in the application of their financial knowledge and skills to improve their financial wellbeing, 30.4 percent had medium levels of confidence, whereas 19.5 had high confidence. The low level of confidence of about half of the respondents in the application of their financial knowledge and skills may limit the extent of application of their financial knowledge and skills.

Another issue considered under the section was the aptitude in managing personal finances. This was essential because an individual's ability to manage his or her personal finance is an offshoot of his or her ability to apply financial knowledge and skills. The results are presented in Figure 5. The Figure shows that 47.7 percent of the respondents admitted to having high aptitude in managing their personal finances, while 20 percent described theirs as low. The results show that the majority (80%) of the respondents believed to have the ability to manage their personal finances.

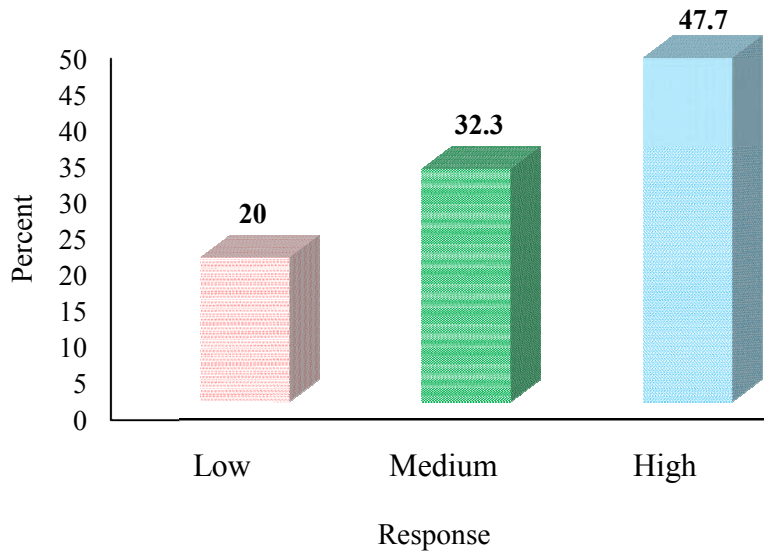


Figure 5: Aptitude in managing personal finances

Source: Field survey, 2013

However, with about half of the respondents having low confidence in the application of their financial knowledge and skills to improve their financial wellbeing implies that majority of them with high or medium aptitude did not manage their finances with the aim of improving their financial wellbeing. This could mean that the majority of the respondents were more concerned about meeting their immediate needs, in relation to their level of income, rather than applying high financial knowledge and skills to improve their financial wellbeing by increasing savings and investments.

The respondents were also requested to describe the existing opportunities and financial environment in the application of their financial knowledge and skills. This was essential because a more conducive environment is required for a high level of application of financial literacy issues. In other words, people may be

less motivated or restricted to apply their financial knowledge and skills in less conducive environments. The results are presented in Figure 6.

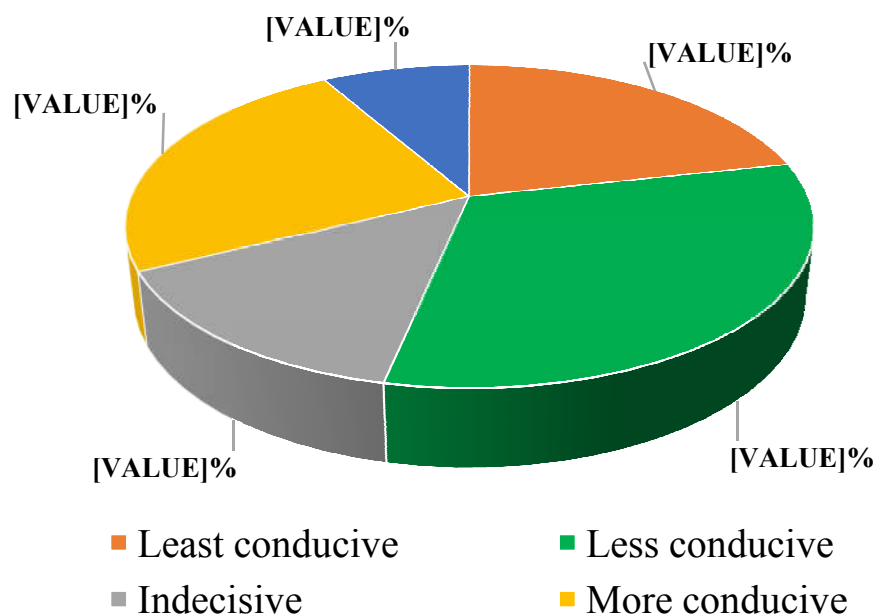


Figure 6: Description of existing opportunities and financial environment in the application of financial knowledge and skills

Source: Field survey, 2013

Figure 6 shows that the majority (53.3%) of the respondents described the existing opportunities and financial environment in the application of financial knowledge and skills as least conducive and less conducive, whereas 32.3 percent described it as more conducive and most conducive. The implication is that the majority of the respondents did not find the existing financial environment as conducive. This could mean that the existing financial environment is unable to provide the necessary financial information, opportunities, products and services, as well as clarification on financial packages to the respondents based on their levels of education, income and financial literacy.

This is likely to restrict the majority of the respondents in applying their financial knowledge and skills to improve their financial wellbeing and security. The results, therefore, imply that financial institutions should segregate their financial education programmes and advertisements along different demographic variables to empower the majority of the public sector workers to learn and apply more financial knowledge and skills to improve their financial wellbeing.

The study further examined the frequency with which the respondents predicted the value of their investments. This was very critical since the application of financial literacy requires that people forecast the viability of investment products before subscribing to them or continue to operate such products and services. The results are presented in Figure 7.

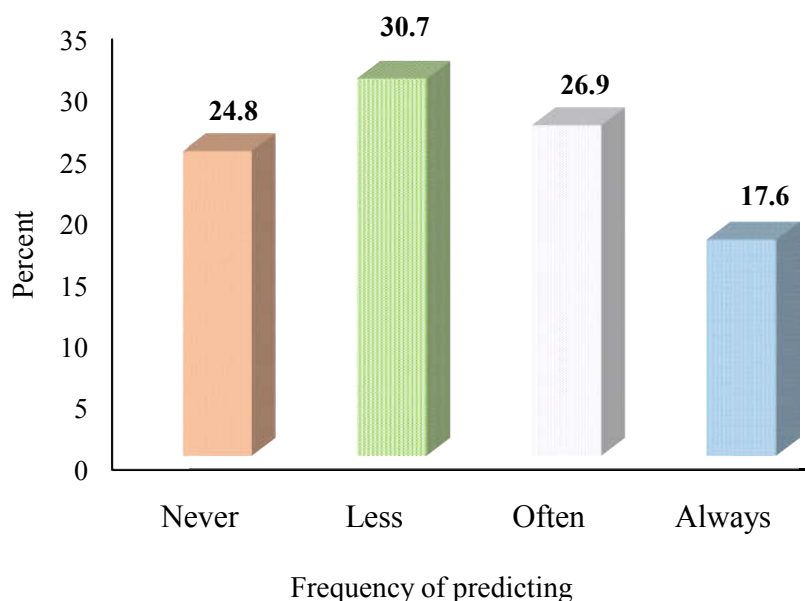


Figure 7: Frequency of predicting the value of investments

Source: Field survey, 2013

The Figure shows that 24.8 percent of the respondents never estimated the value of their investments, 30.7 percent less predicted theirs, whereas 17.6 percent always predicted theirs. The results show that the majority (55.5%) of the respondents did not or on few occasions forecasted the value of their investments. This could be due to the fact that some of the respondents did not have knowledge and skills in financial forecasting. This is likely to affect the quantum of returns obtained on investments which could further discourage them from subscribing to other financial investments to guarantee their financial security and wellbeing. According to Lusardi (2008a), people's ability to forecast their returns on financial investments based on existing marketing and political conditions helps to reduce risks associated with long term investments and enables them to subscribe to high-yielding investments.

Another issue considered under the section was the frequency with which public sector workers in the Metropolis estimated the effect of inflation on investments. This was important because the World Bank (2009) expresses that people's knowledge and ability to estimate the influence of inflation on investments is a critical step in the application of financial literacy and skills to guarantee their future financial security. The detail responses are presented in Figure 8. The Figure shows that the 26.9 percent of the respondents never estimated the effect of inflation on their investments, 38.9 percent less did such estimation, while 11.8 percent always estimated. The results show that the majority (65.8%) of the respondents did not or on few occasions predicted the

effect of inflation on investments. This could be due to their low level of understanding on the relationship between inflation on investments.

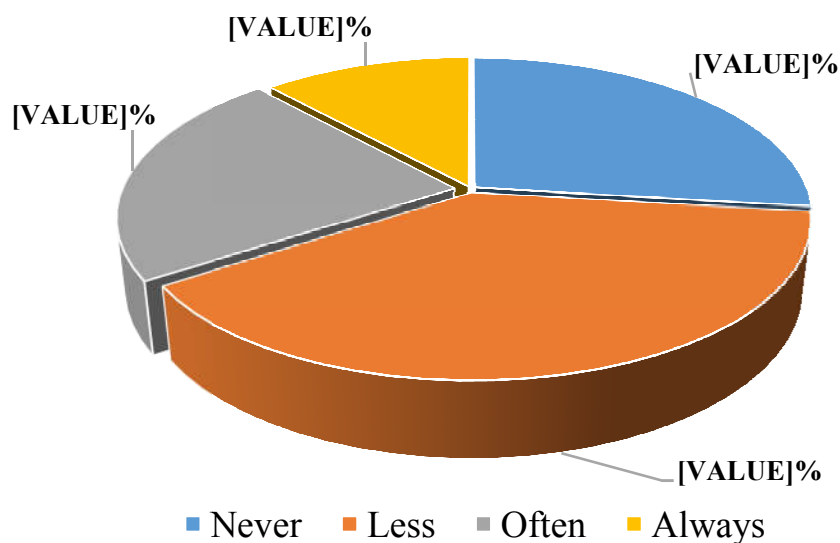


Figure 8: Frequency of estimating the effect of inflation on investments

Source: Field survey, 2013

Thus, per the conceptual framework, the level of financial knowledge would inform the extent of the application of financial principles and techniques to ensure improved financial wellbeing. This is also in line with Jump\$Start Coalition’s (2008) explanation of the human capital theory that the level of financial literacy of an individual depends on one’s financial knowledge, attitude, skills and behaviour. The non-estimation of the effect of inflation on investments could reduce the real value of investment funds which may reduce the workers motivation and commitment to subscribe to other investments.

The study requested the respondents to indicate the frequency with which they calculated the effect of interest rate on debt contracts. This was necessary because interest rate on debt contracts because Lusardi and Tufano (2008) indicate

that one of the basic applications of financial literacy is one's ability to make decisions on interests on debt contracts as well as fusing knowledge about interest compounding in financial choices. The study found that 14.7 percent of the respondent less calculate the effect of interest rate on their debt contract, 53.1 percent often did the calculation, while 32.2 percent always did so. The results show that the greater proportion (85.3%) of the respondents did apply some financial knowledge to check the rate of increase of their debt levels. In other words, the majority of the respondents were more concerned about the level of increase of their debt levels.

The results could be attributed to the high level of understanding of the respondents on interest rate on debt levels. Thus, the workers need to understand the financial concepts before they can apply them in their activities as described by Goldhaber (2000) in the learning theory that an individual's level of the application of financial literacy principles is informed by his or her level of financial knowledge, skills and attitude towards financial management. Hilgert et al. (2003) found a significant association between the level of financial knowledge on interest rates and financial practice where people estimate the increment on their debts levels.

The respondents were also asked to indicate the frequency of estimating the effect of interest rate on their investments. This was necessary because the effect of interest rate on investments shows the likely performance or viability of investment products. Interest rates on investments are, therefore, used to select one investment package from others. Details of the results are presented in Figure 9.

Figure 9 shows that 15.5 percent of the respondents never estimated the effect of interest rate on their investments, 38.7 percent often did estimate, while 22.1 percent always did the estimation.

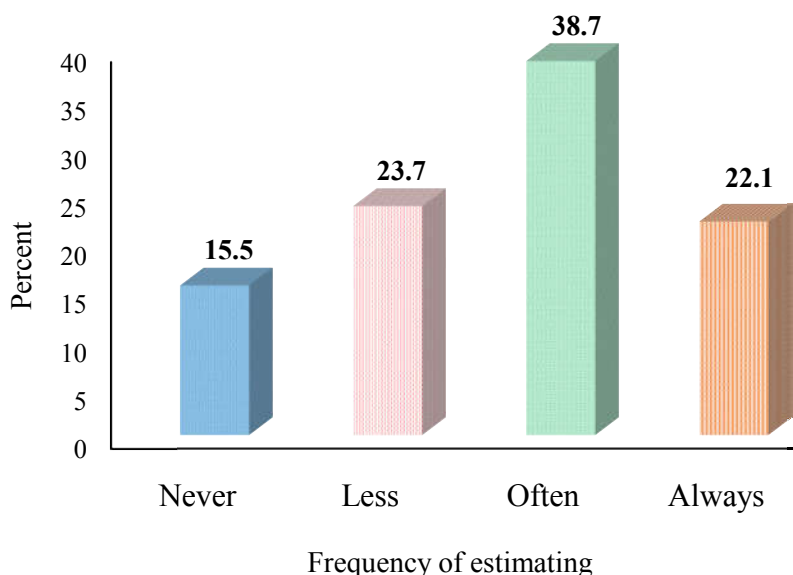


Figure 9: Frequency of estimating the effect of interest rate on investment

Source: Field survey, 2013

The results show that majority (60.8%) of the respondents were more concerned about the effect of interest rate on their investments. This is likely to enable the majority of the respondents to subscribe to high-yielding investments. According to Agarwal and Mazumder (2010), frequent estimating of the effect of interest rate on investments enables investors to reduce some of the risks associated with long term investments. Nevertheless, the comparison in the frequency of estimating the effect of interest rate on debt levels and investments show that the workers were more concerned about the increase in their debt levels than the returns on their investments. In other words, more workers frequently estimated the effect of interest rate on their debt levels than on their investments.

This could be attributed to the negative element associated with the debt contracts as well as the harsh repercussions likely to occur when they are unable to service them.

Comparing financial offers before making financial decisions is also an important element in the application of financial literacy. It shows the extent to which people are familiar or understand financial matters and are prepared to take advantage of financial opportunities to improve their financial wellbeing. It enables people to assess and select the financial service that could best help to improve their financial security and wellbeing. Marcolin and Abraham (2006) emphasise that comparing financial offers before making decisions enables investors to have a fair view about the opportunity cost of their financial decisions. The respondents were asked to indicate the frequency with which they compared financial offers before making decisions. Details of the results are presented in Figure 10.

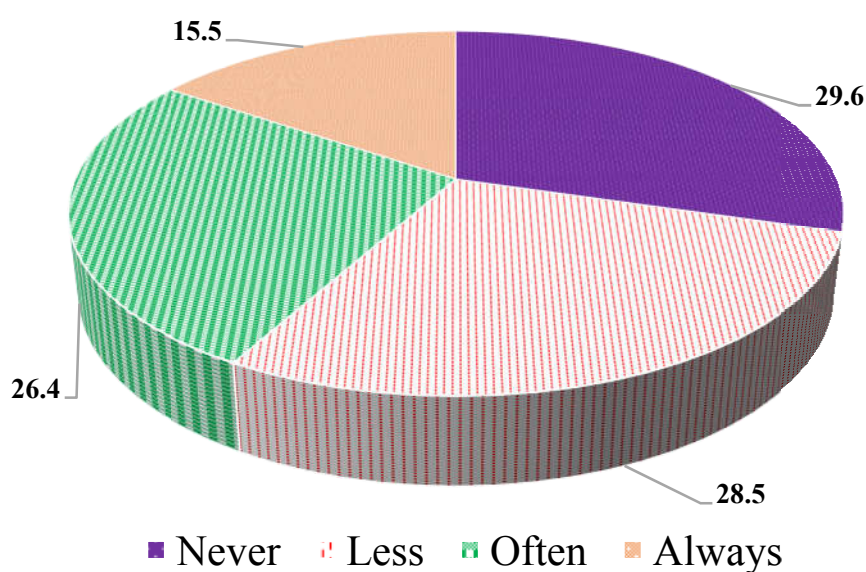


Figure 10: Frequency of comparing financial offers before making decisions
Source: Field survey, 2013

Figure 10 shows that 29.6 percent of the respondent reported that they have never compared financial different financial offers before making decisions, 28.5 percent did such comparison less often, whereas 15.5 percent always compared. The results show that the majority (58.1%) of the respondents did not or on few occasions compared financial offers before making decisions. The implication is that the majority of the respondents were less concerned about the opportunity cost of their financial decisions. This is likely to affect viability of their investments. In other words, comparing different financial offers before making investment decisions enables investors to assess both the short term and long term returns based on existing and projected marketing conditions.

The study further requested the respondents to indicate the frequency with which their spending was dictated by most pressing needs. This was essential because the use of scale of preference to guide spending enables people to gradually address their material needs. From the study, 20.5 percent of the respondents reported that their spending was never dictated by most pressing needs, 30.4 percent indicated that their spending was less dictated by their most pressing needs, whereas 30.1 percent and 18.9 percent admitted that their spending were often and always dictated by most pressing needs, respectively.

The results show that a little over half (50.6%) of the respondents did not have maximum control over their expenditure as indicated by Jappeli (2010) that the level of adherence to items on people's scale of preference is an indication of their level of control over their expenditure. This is likely to reduce the effectiveness of their expenditure patterns in addressing their material needs and

ensuring their financial security and wellbeing. The results further show that the majority of the respondents were confronted with the conflict between the desire to increase pleasure or to follow social norms as indicated by Freud (1910) in the psychoanalysis theory.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents a summary of the major issues in the study. It also presents the overall conclusions of the study and makes recommendations on how financial literacy and application could be improved among public sector workers in the Cape Coast Metropolis.

Summary

The study aimed at assessing the level of financial literacy, factors influencing financial literacy, and level of application of financial literacy among public sector workers in the Cape Coast Metropolis. The study adopted a quantitative research design as a primary approach for collecting and analysing data. Cross-sectional and descriptive study designs were also employed under the quantitative research design. A total of 375 respondents were sampled from a population of 13,163. A multi-stage sampling procedure was used to sample the respondents for the study.

Statistical Product and Service Solutions version 15 software was used to analyse the data. Descriptive statistics such as frequencies and percentages were used to describe the data. Regression was used to measure the factors influencing financial literacy among public sector workers in the Cape Coast Metropolis. One-way analysis of variance (ANOVA) was used to examine significant differences in

financial literacy among the three categories of public workers. Frequency tables and charts were used to present the findings of the study.

Level of financial literacy among public sector workers

1. The study found that males (mean = 3.1, stdv. = 0.87) had better understanding than females (mean = 2.8, stdv. = 0.74) on interest rate on debt levels, while females had better understanding than males on the depreciation of the value of money. This was attributed to the differences in the socio-cultural roles between the two gender groups. Thus, males are mostly the heads of their households and are responsible for settling household debts, whereas females are responsible for domestic activities and more often interact with prices of goods from the market than the males.
2. From the study, the respondents generally had low levels of understanding on financial risks and opportunities among public sector workers. This is likely to affect the extent to which public sector workers in the Metropolis gain financial opportunities to enhance their financial well-being as well as attracting avoidable debts, which may negatively affect their financial well-being.
3. The study found that there was generally low level of understanding on the opportunity cost of financial decisions among public sector workers in the Metropolis. This was likely to affect the proper assessment of available financial options before making financial decisions.
4. The level of understanding about the ability to interpret financial information was positively related to job rank. Thus, respondents from the management

rank (3.4, stdv. = 0.90) category had higher levels of understanding than the middle (mean = 2.8, stdv. = 0.82) and junior rank (mean = 1.8, stdv. = 0.49) respondents on the level of understanding to interpret financial information. This was attributed to the fact that management and middle levels staff sometimes handle financial issues at work.

5. There was a positive trend in the levels of understanding among the workers with various levels of education on predicting the value of products over time based on existing market conditions. Public sector workers with high levels of education were more able to estimate the extent of appreciation and depreciation of the value of products and assets over time than those with low levels of education (Tertiary – mean = 3.1, stdv. = 0.91; SHS – mean = 2.7, stdv. = 0.78; Basic – mean = 1.9, stdv. = 0.75). This was attributed to the fact that estimation of depreciation over time is quite technical and requires deeper understanding in financial forecasting which is mostly associated with high learning.
6. The study found that there was significant difference (p-value = 0.01) in the levels of financial literacy among respondents from the state-owned-enterprises, civil service and the hybrid sector.

Factors influencing financial literacy among public sector workers

1. There was significant positive correlation between financial literacy level, and experience and exposure to finance ($r = 0.46$), level of education ($r = 0.22$), cognitive ability ($r = 0.20$), level of responsibility ($r = 0.31$), household

financial wealth ($r = 0.05$), access to financial information ($r = 0.04$) and gender ($r = 0.04$).

2. The study found that access to financial information, experience and exposure to finance, level of education, gender, cognitive ability, household financial wealth, and level of financial responsibility explained 44.8 percent of changes in the levels of financial literacy.
3. From the study, access to financial information, experience and exposure to finance, level of education, gender, cognitive ability, household financial wealth, and level of financial responsibility had significant influence (p -value = 0.01) on variations in the levels of financial literacy among public sector workers in the Metropolis.
4. Experience and exposure to finance made the strongest unique contribution ($Beta = 0.193$) to explaining variations in levels of financial literacy, when the variance explained by all other factors or variables in the model is controlled for, sex made the least unique contribution ($Beta = 0.032$).

Level of application of financial literacy among public sector workers

1. The majority (51.5%) of the respondents were applying their financial knowledge in their personal activities to ensure their lifetime financial security. The implication is that the majority of the respondents had the motivation to secure their financial wellbeing.
2. The majority (52%) of the respondents had low confidence in their abilities and financial skills to guarantee their future financial security. The implication

is that majority of the respondents may not be fully committed to the measures instituted to ensure their lifetime financial security.

3. The majority (53.3%) of the respondents described the existing opportunities and financial environment in the application of financial knowledge and skills as least conducive and less conducive. This could mean that the existing financial environment is unable to provide the necessary financial information, opportunities, products and services, as well as clarification on financial packages to the respondents based on their levels of education, income and financial literacy.
4. The study found that the workers were more concerned about the increase in their debt levels than the returns on their investments. In other words, more workers frequently estimated the effect of interest rate on their debt levels than on their investments. This could be attributed to the negative element associated with the debt contracts as well as the harsh repercussions likely to occur when they are unable to service them.

Conclusions

Financial literacy among public sector workers is important following the large number of people in the sector and the many personal financial responsibilities they often assume in their homes and workplaces. Measuring the level of knowledge and understanding of public sector workers as well as assessing their behaviours with regard to their finances is fundamental in order to

identify potential needs and gaps in relation to specific aspects of financial literacy.

The study found that public sector workers with different socio-demographic characteristics had different levels of financial literacy. This was because differences in the socio-demographic characteristics enable workers to have various levels of experience and exposure to financial issues. Thus, public sector workers with high levels of education were found to have better levels of understanding on financial literacy issues than those with low levels of education. Similarly, public sector workers with high job portfolios had better understanding on financial literacy issues than those with low job portfolios.

Level of education, and experience and exposure to finance had critical influence to variations in the levels of financial literacy among public sector workers in the Metropolis. The implication is that efforts to increase financial literacy among public sector workers in the Cape Coast Metropolis should focus more attention to those two critical factors. However, low confidence in the abilities and financial skills of the workers poses threat to the adoption of more improved financial behaviour to safeguard the financial security of the public sector workers.

Furthermore, the existing financial environment is unable to provide the necessary financial information, opportunities and services to public workers with different levels of financial literacy. The study, therefore, concludes that low financial literacy among public sector workers influences their ability to apply

high financial literacy principles to guarantee their financial security and wellbeing.

Recommendations

Based on the major findings of the study, the following recommendations were made to improve financial literacy and application among public sector workers in the Cape Coast Metropolis.

1. The study recommends that the Metropolitan branch of the Public Sector Workers Union in collaboration with the financial institutions in the Metropolis should educate public sector workers on financial products and opportunities, financial concepts and the importance of applying financial principles in personal activities to safeguard their financial security. Such education should be organised separately for people with different levels of financial literacy, levels of education, and job ranks. This approach would enable public sector workers with different socio-demographic characteristics to get better understanding on financial literacy issues. The education could be done for the various occupation types under the three categories of public sector workers. The role of the Union would be to facilitate the process for the financial institutions in the Metropolis. Such education should focus more on financial risks and opportunities, opportunities cost of financial decisions, financial forecasting based on existing market conditions.
2. The study suggests that financial institutions in the Metropolis should run their advertisements to educate people with different levels of financial literacy.

This could be done by organising financial advertisements in both English and Fanti languages to enable more public sector workers with low levels of education and low financial literacy levels understand financial terminologies and concepts. Such educative advertisements would enable more public sector workers to take advantage of financial opportunities to improve their financial wellbeing. Improved financial literacy through educative advertisements would enable public sector workers to appraise a number of financial options before making financial decisions. This would help to reduce the risks associated with financial decisions to encourage the application of financial literacy principles to guarantee their financial security. The financial institutions would also benefit from the programme by attracting more public sector workers who hitherto were not part of the formal financial system.

3. It is also recommended that the financial institutions in the Cape Coast Metropolis should create a front desk office for public education and marketing. Such offices would help provide direct and ready clarification and education to the general populace, including public sector workers, on financial matters. The offices would also enable more public sector workers to gain better understanding of financial issues and encourage them to apply financial literacy principles in their personal activities by subscribing to investment packages and other financial products to enhance their financial wellbeing. Such offices would equip more public sector workers with the requisite skills, knowledge and confidence to apply financial literacy principles. The creation of the public education and marketing front desk

office would also enable the financial institutions to market the products and services to public sector workers who may seek clarification of financial issues.

4. The study recommends that the Metropolitan branch of the Public Sector Workers union in collaboration with the Worker College should organise SHS classes for low rank public sector workers who had not have SHS education in the Metropolis. The union could support this by bargaining for reduction in prices and convenient times for members, and encouraging members to subscribe to the package. This would help to increase the level of education of the public sector workers to understand financial literacy issues and enhance their ability to apply them in their personal activities. Thus, the study found that level of education had significant influence on the level of financial literacy of public sector workers in the Metropolis. As a result, such effort would enable members to understand and apply financial forecasting in their financial decisions to enhance their future financial security. It would also enable them to better understand financial concepts and interpret financial information.
5. The study suggests that the financial institutions in the Cape Coast Metropolis should develop more financial opportunities for people in different socio-economic classes. This would enable people from different socio-economic classes to subscribe to financial products and services to enhance their financial wellbeing. Thus, having financial packages for workers low class worker would help to increase their confidence in the application of financial

literacy issues in their personal activities to safeguard their financial security and wellbeing.

Suggestion for further studies

The study suggests that future study should concentrate on the other factors influencing levels of financial literacy among public sector workers. This would enable stakeholders to appreciate all the critical factors to consider in efforts to increase financial literacy among public sector workers.

REFERENCES

- Abreu, M., & Mendes, V. (2010). Financial literacy and portfolio diversification. *Quantitative Finance*, 10(5), 515-528.
- Abubakar, A. (2009). Financial literacy – Key to economic growth. Retrieved from <http://www.mfw4ghana.wordpress.com/2009/09/10/financial-literacy-key-to-economic-growth/> on Wednesday, May 15, 2013 on 10:00am.
- Agarwal, S., & Mazumder, B. (2010). *Cognitive abilities and household financial decision making*. Chicago: Federal Reserve Bank.
- Agnew, J. R., & Szykman, L. R. (2005). Asset allocation and information overload: The influence of information display, asset choice and investor experience. *Journal of Behavioural Finance*, 6, 57-70.
- Anane, E. B. (2009). Government to introduce financial education at SHS. Retrieved from <http://thechronicle.com.gh/gov-to-introduce-financial-education-at-shs/> on Wednesday, May 15, 2013 on 10:00am.
- Aruthur, S., & Sheffrin, S. M. (2003). *Economics: Principles in action*. New Jersey: Prentice Hall.
- Atia, C. (2012). Building a financially literate society for development: The Campaign for Female Education (CAMFED) model. Paper presented at the 8th Centre for Continuing Education and Interdisciplinary Research, Harmattan School Conference, Tamale, 6-8 February, 2012.
- Australia and New Zealand (ANZ) Banking Group. (2008). *ANZ survey of adult financial literacy in Australia*. Melbourne: Australia Banking Group.

- Banks, J., O'Dea, C., & Oldfield, Z. (2010). Cognitive function, numeracy and retirement saving trajectories. *The Economic Journal*, 120, 381-407.
- Becker, G. (1962). Investment in human capital: A theoretical analysis. *Journal of Political Economy*, 70(5), 9-49.
- Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. Chicago: University of Chicago Press.
- Bernheim, B. D., & Garrett, D. M. (2003). The effects of financial education in the workplace: Evidence from a survey of households. *Journal of Public Economics*, 87(7-8), 1487-1519.
- Boachie-Danquah, N. Y. (2006). *What kind of public service does Ghana need for national development*. Accra: University of Ghana.
- Braunstein, S., & Welch, C. (2002). Financial literacy: An overview of practice, research and policy. *Federal Reserve Bulletin*, 88, 445-457.
- Broadbent, J., & Guthrie, J. (2008). Public sector to public services: 20 years of contextual accounting research. *Accounting Auditing and Accountability Journal*, 21(2), 129-169.
- Bucher-Koenen, T., & Lusardi, A. (2010). Financial literacy and retirement planning in Germany. Paper presented at the Netspar International Pension Workshop, Zurich, 10 – 11 June, 2010.
- Byrnes, J. P. (2008). *Cognitive development and learning in instructional contexts* (3rd ed.). Boston: Pearson Education, Inc.

- Capuano, A., & Ramsay, I. (2011). *What causes suboptimal financial behaviour? An exploration of financial literacy, social influences and behavioural economics*. Melbourne: University of Melbourne.
- Cohen, M., & Nelson, C. (2011). *Financial literacy: A step for clients towards financial inclusion*. Washington, D.C: Microfinance Opportunities.
- Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. New Jersey: Pearson Education.
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). California: Sage Publications.
- Delavande, A., Rohwedder, S., & Willis, R. (2008). *Preparation for retirement, financial literacy and cognitive resources*. Ann Arbor: University of Michigan.
- Duflo, E., & Saez, E. (2002). Participation and investment decisions in a retirement plan: The influence of colleagues' choices. *Journal of Public Economics*, 85(1), 121-148.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Texas: Harcourt Brace College Publishers.
- European Commission. (2009). *Follow up in retail financial services to the consumer markets scoreboard SEC (2009) 1251 final*. Brussels: Commission of the European Communities.
- Freud, S. (1910). The origin and development of psychoanalysis. *American Journal of Psychology*, 21, 181-218.

- Gallery, G., & Gallery, N. (2010). Rethinking financial literacy in the aftermath of the global financial crisis. *Griffith Law Review*, 19(1), 30-50.
- Gerardi, K., Goette, L., & Meier, S. (2010). *Financial Literacy and Subprime Mortgage Delinquency: Evidence from a Survey Matched to Administrative Data*. Atlanta: Federal Reserve Bank.
- Ghana Statistical Service. (2000). *Population and housing census 2000*. Accra: Ghana Statistical Service.
- Ghana Statistical Service. (2012). *2010 population and housing census: Summary of final results*. Accra: Ghana Statistical Service.
- Goldhaber, D. E. (2000). *Theories of human development: Integrative perspectives*. Cambridge: Mayfield Publishing Company.
- Goldsmith, E., & Goldsmith, R. E. (2006). Sex differences in financial knowledge: A replication and extension. *Psychological Reports*, 89, 1169-1170.
- Gustman, A. L., Steinmeier, T. L., & Tabatabai, N. (2012). Financial knowledge and financial literacy at the household level. *American Economic Review: Papers and Proceedings*, 102(3), 309-313.
- Hilgert, M. A., Hogarth, J. M., & Beverly, S. (2003). Household financial management: The connection between knowledge and behaviour. *Federal Reserve Bulletin*, 89(7), 309-322.
- Holzmann, R. (2010). *Bringing financial literacy and education to low and middle income countries: The need to review, adjust and extend current wisdom*. Washington, D.C: World Bank.

- Hung, A. A., Parker, A., & Yoong, J. K. (2011). Asking for help: Survey and experimental evidence on financial advice and behaviour change. Rand Corporation, Working Paper (WR-714-1).
- Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, 44(2), 296-316.
- Jappelli, T. (2010). Economic literacy: An international comparison. *The Economic Journal*, 120, 429-431.
- Jump\$tart Coalition. (2008). *The financial literacy of young American adults*. Washington, D.C: Jump\$tart Coalition for Personal Financial Literacy.
- Kimball, M. S., & Shumway, T (2007). *Investor sophistication and the home bias, diversification and employer stock puzzles*. Mimeo: University of Michigan.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607-610.
- Krueger, D. W. (1986). Money, success and success phobia. In D. W. Krueger (Ed.), *The last taboo: Money as symbol and reality in psychotherapy and psychoanalysis* (3-16). New York: Mazel, Inc.
- Kunateh, M. A. (2009). Financial literacy low among adults in Northern Ghana-survey. Retrieved from <http://www.ghanadot.com/news.ghanadot.kunateh.081909g.html> on Friday, November 9, 2012 at 10:00am.
- Lusardi, A. (2008a). *Household saving behaviour: The role of financial literacy, information, and financial education programmes*. National Bureau of Economic Research Working Paper 13824.

- Lusardi, A. (2008b). *Financial literacy: An essential tool for informed consumer choice?* Dartmouth College Working Paper.
- Lusardi, A. (2009). United States household savings behaviour: The role of financial literacy, information and financial education programmes. In C. Foote, L. Goette, & S. Meier (Eds.), *Policymaking insights from behavioural economics* (109-149). Boston: Federal Reserve Bank.
- Lusardi, A., & Mitchell, O. S. (2011a). The outlook for financial literacy. In O. S. Mitchell, & A. Lusardi (Eds.), *Financial literacy: Implications for retirement security and the financial marketplace* (1-16). Oxford: Oxford University Press.
- Lusardi, A., & Mitchell, O. S. (2011b). Financial literacy and planning: Implications for retirement wellbeing. In O. S. Mitchell, & A. Lusardi (Eds.), *Financial literacy: Implications for retirement security and the financial marketplace* (17-49). Oxford: Oxford University Press.
- Lusardi, A., & Mitchell, O. S. (2011c). Financial literacy around the world: An overview. *Journal of Pension Economics and Finance*, 10(4), 497-508.
- Lusardi, A., & Mitchell, O. S. (2011d). Financial literacy and retirement planning in the United States. *Journal of Pension Economics and Finance*, 10(4), 509-525.
- Lusardi, A., & Tufano, P. (2008). Debt literacy, financial experience and over-indebtedness. National Bureau of Economic Research Working Paper No. W14808.

- Lusardi, A., Mitchell, O. S., & Curto, V. (2010). Financial literacy among the young. *Journal of Consumer Affairs*, 44(2), 358-380.
- Lyons, A. C., Rachlis, M., & Scherpf, E. (2007). What's in a score? Differences in consumers' credit knowledge using OLS and quantile regressions. *Journal of Consumer Affairs*, 41(2), 223-249.
- Mandell, L. (2007). Financial literacy of high school students. In J. J. Xiao (Ed.), *Handbook of consumer finance research* (163-183). New York: Springer.
- Mandell, L. (2008). Financial education in high school. In A. Lusardi (Ed.), *Overcoming the saving slump* (257-279). Chicago: University of Chicago Press.
- Marcolin, S., & Abraham, A. (2006). Financial literacy research: Current literature and future opportunities. Retrieved from <http://ro.uow.edu.au/commpapers/223/> on Wednesday, May 15, 2013 on 10:00am.
- McQuaid, R., & Egdell, V. (2010). *Financial capability – Evidence review*. Edinburgh: Edinburgh Napier University.
- Meier, S., & Sprenger, C. (2010). Present-biased preferences and credit card borrowing. *American Economic Journal*, 2, 193-206.
- Monticone, C. (2010). How much does wealth matter in the acquisition of financial literacy. *Journal of Consumer Affairs*, 44, 403-417.
- Monyoncho, K. (2007). *How to save money for Investment: Practical Principles towards your financial success*. Nairobi: Word Alive Publishers.
- Neuman, L. W. (2006). *Social research methods: Qualitative and quantitative approaches* (6th ed.). New York: Allyn and Bacon.

- Nyamute, W., & Maina, J. K. M. (2010). *Effect of financial literacy on personal financial management practices: A case study of employees of finance and banking institutions*. Nairobi: University of Nairobi.
- Onwuegbuzie, A. J., & Leech, N. L. (2004). *Enhancing the interpretation of significant findings: The role of mixed methods research*. Florida: Eastern Educational Research Association.
- Organisation for Economic Co-operation and Development (OECD). (2005). *Improving financial literacy: Analysis of issues and policies*. Paris: OECD Publishing.
- Organisation for Economic Co-operation and Development (2011). International Network on Financial Education (INFE) *measuring financial literacy: Questionnaire and guidance notes for conducting an internationally comparable survey of financial literacy*. Paris: OECD.
- Organisation for Economic Co-operation and Development (2012). *OECD/INFE high-level principles on national strategies for financial education*. Paris: OECD.
- Organisation for Economic Co-operation and Development (2013). Financial literacy framework. In OECD (Ed.), *Programme for International Student Assessment (PISA) 2012 assessment and analytical framework: Mathematics, reading, science, problem solving and financial literacy* (139-166). Paris: OECD Publishing.
- Ormrod, J. (2012). *Human learning* (6th ed.). Boston: Pearson.

- Parker, A. M., Bruine de Bruin, W., Yoong, J., & Willis, R. (2011). Inappropriate confidence and retirement planning: Four studies with a national sample. *Journal of Behavioural Decision Making*, 5(2), 115-120.
- Pavlov, I. P. (1960). *Conditioned reflexes: An investigation of the physiological activity of the cerebral cortex*. New York: Dover Publications, Inc.
- Perry, V. G., & Morris, M. (2005). Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial behaviour. *Journal of Consumer Affairs*, 39(2), 299-313.
- Peters, H. F. (2008). Reforming Ghana's public service: Issues and experiences in comparative perspective. *Public Administration Review*, 63(3), 343-354.
- Piaget, J. (1983). Piaget's theory. In W. Kessen (Ed.), *History, theory and methods* (703-732). New York: John Wiley and Sons.
- President's Advisory Council on Financial Literacy (PACFL). (2008). 2008 annual report to the President. Retrieved from <http://www.treas.gov/offices/domestic-finance/financial-institution/fin-education/council/index.shtml> on Wednesday, May 15, 2013 on 10:00am.
- Remund, D. L. (2010). Financial literacy explicated: The case for a clearer definition in an increasingly complex economy. *Journal of Consumer Affairs*, 44(2), 276-295.
- Sarantakos, S. (2005). *Social research*. New York: Pelgrave MacMilan.
- Schultz, T. W. (1961). Investment in human capital. *The American Economic Review*, 51(1), 1-17.

- Scott, R. H. III. (2010). Credit card ownership among American high school seniors: 1997-2008. *Journal of Family and Economic Issues*, 31(2), 151-160.
- Skinner, B. F. (1953). *Science and human behaviour*. New York: The MacMillan Company.
- Smith, J., McArdle, J., & Willis, R. (2010). Financial decision making and cognition in a family context. *The Economic Journal*, 120, 363-378.
- Sobhesh, K. A., Samir, B., Joshy, J., & Jayanth, R. V. (2012). *A survey of financial literacy among students, young employees and the retired in India*. Gujarat: Indian Institute of Management Ahmedabad.
- Stevens, M., & Teggemann, S. (2004). Comparative experience with public service reform in Ghana, Tanzania and Zambia. In B. Levy, & S. Kpundeh (Eds.), *Building state capacity in Africa: New approaches, emerging lessons* (43-86). Washington, D.C: The World Bank.
- Tuckett, D., & Taffler, R. (2008). Phantastic objects and the financial market's sense of reality: A Psychoanalytic contribution to the understanding of stock mark. *International Journal of Psychoanalysis*, 89(2), 389-412.
- van Rooij, M., Lusardi, A., & Alessie, R. (2011). Financial literacy and stock market participation. *Journal of Financial Economics*, 101, 449-472.
- Volpe, R. P., Chen, H., & Liu, S. (2006). An analysis of the importance of personal finance topics and the level of knowledge possessed by working adults. *Financial Services Review*, 15, 81-99.

- Wodzicki, M. (2007). *Public sector reform and democracy assistance: A literature review*. London: Queen University.
- World Bank. (2009). *The case for financial literacy in developing countries*. Washington, D.C: World Bank.
- Worthington, A. (2006). Predicting financial literacy in Australia. *Financial Services Review*, 15, 59-69.

APPENDIX A
QUESTIONNAIRE FOR PUBLIC SECTOR WORKERS IN CAPE COAST
METROPOLIS

Dear Sir/Madam,

This questionnaire is designed to examine the levels of financial literacy and its application among public sector workers in the Cape Coast Metropolis. It aims at assessing the level of financial literacy among public sector workers, exploring the factors that influence financial literacy among public sector workers, and examining the level of application of financial literacy among public sector workers in the Cape Coast Metropolis. This is in partial fulfilment for the award of an MPhil degree at the Institute for Development Studies in the University of Cape Coast. Consequently, any information given would be treated with utmost confidentiality.

Thank you

Section A: Background characteristics of respondents

1. Public sector group: [1] State owned enterprise [2] Civil Service [3] Hybrid
2. Sex of respondents: [1] Male [2] Female
3. Age of respondents: [1] Below 20 years [2] 21 – 30 years [3] 31 – 40 years [4] 41 – 50 years [5] 51 – 60 years [6] Above 60 years

4. Place of work: [1] ECG [2] GWCL [3] Education [4] Health [5] University [6] Polytechnic
5. Job rank at work place: [1] Junior [2] Senior [3] Management
6. Level of household income:
7. Household size: [1] 1 – 2 [2] 3 – 4 [3] 5 – 6 [4] 7 – 8 [5] Above 8
8. Marital status: [1] Single [2] Married [3] Divorced [4] Widowed
9. Highest level of education: [1] Basic [2] SHS [3] Tertiary

Section B: Level of financial literacy among public sector workers

10. How would you describe your level of understanding in the following? Using

Low = 1, Medium = 2, High = 3

Issue	1	2	3
Interest rate on debt levels			
Interest rate on investments			
Financial risks and opportunities			
Financial concepts and products of banks			
Prediction of financial position based on existing financial circumstances			
Prediction of the value of products over time based on existing market conditions			
Relationship between inflation and return			
Relationship between inflation and prices			
Depreciation of the value of money			

Opportunity cost of financial decisions			
Ability to interpret financial information			
Risk diversification			

11. Do you know people and institutions to seek for clarity in financial matters?

[1] Yes [2] No

12. How confident are you in your financial decisions?

[1] Low [2] Medium [3] High

13. How do you perceive the importance of budgeting on personal activities?

[1] Least important [2] Less important [3] Important [4] Very important

14. Skills in making appropriate financial decisions:

[1] Low [2] Medium [3] High

15. Description of your ability to communicate about financial matters: [1]

Low [2] Medium [3] High

Section C: Factors influencing financial literacy among public sector workers

16. How would you rate your financial literacy level?

[1] Very low [2] Low [3] High [3] Very high

17. How do you agree to the following as factors influencing financial literacy?

Using Strongly disagree = 1, Disagree = 2, Agree = 3, Strongly agree = 4

Factors	1	2	3	4
Access to financial information				
Experience and exposure to finance				

Level of education				
Gender				
Cognitive ability				
Financial wealth of household				
Level of financial responsibility				

Section D: Level of application of financial literacy among public sector

workers

18. Putting measures in place to reach lifetime financial security: [1] Yes [2] No
19. Level of confidence in your future financial wellbeing based on your current financial skills. [1] Low [2] Medium [3] High
20. Level of confidence in the application of your financial knowledge and skills to improve your financial wellbeing: [1] Low [2] Medium [3] High
21. Aptitude in managing personal finances: [1] Low [2] Medium [3] High
22. How would you describe the existing opportunities and financial environment in the application of your financial knowledge and skills? [1] Least conducive [2] Less conducive [3] Indecisive [4] More conducive [5] Most conducive
23. How often do you do the following? Using Never = 1, Less often = 2, Often = 3, Always = 4

Issue	1	2	3	4
Predicting the value of your investment				
Estimating the effect of inflation on investments				

Calculating the effect of interest rate on debt contracts				
Estimating the effect of interest rate on investments				
Comparing financial offers before making decisions				
Spending dictated by most pressing needs				

24. Any additional comment:

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Thank you

APPENDIX B

Descriptives on one-way analysis of variance on levels of financial literacy among the three categories of the public sector

					95% confidence interval for mean			
	N	Mean	Stdv.	Std. error	Lower bound	Upper bound	Min	Max
State-owned- enterprises	125	2.44	1.07	0.31	2.27	3.05	1	4
Civil service	125	2.75	0.93	0.22	2.49	3.23	1	4
Hybrid sector	125	3.38	1.34	0.42	2.81	3.88	1	4
Total	375	2.8	1.21	0.37	2.75	3.62	1	4

Source: Field survey, 2013

