KNOWLEDGE OF THE THREE-TIER PENSION SCHEME AND ITS INFLUENCE ON RETIREMENT PLANNING AMONG WORKERS IN SELECTED ORGANIZATIONS IN GHANA

BY

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DECLARATION

I MARY AYI-BONTE, hereby declare that, this thesis was done by me under the supervision of Dr. Robert Akuamoah-Boateng and Dr. Kingsley Nyarko. That this piece of work is original and has never been presented to any institution in part or whole for the award of any degree.

I also declare that full acknowledgement has been given to the views and ideas of other people used in this thesis.

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DEDICATION

I dedicate this thesis to my father, Mr. Joseph Nii Ayi-Bonte. You knew the essence of educating a female and never hesitated in providing the necessary support in making me ready for this cruel world. You listened to my challenges and always encouraged me to persevere which continually boosted my confidence. THANK YOU very much for I could not have come this far without you.

I also dedicate it to my best friend, Mr. Edward Nii Ayensu Thompson. Your encouragement and support have ultimately yielded fruits. God bless you for being there for me throughout this journey.
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ABSTRACT

The study investigates the relationship between knowledge of the three-tier pension scheme and retirement planning. Using the cross sectional survey method, 196 participants made up of 102 males and 94 females were sampled from six organisations. Participants were administered with the Retirement Planning Scale, Knowledge of the three-tier pension Scheme questionnaire and the Financial Literacy Questionnaire. The result using Pearson Product-Moment Correlation Coefficient indicates that knowledge of the three-tier pension scheme has a significant positive correlation with retirement planning. Also, significant age difference was found among respondents however, gender did not yield any significant difference among respondents in relation to their knowledge of pension scheme and retirement planning using the Independent t-test. Further analysis using the hierarchical multiple regression showed that variables such as age, educational level, income level and financial literacy had significant moderation effects on the relationship between knowledge of the three-tier pension scheme and retirement planning. These findings imply that for workers to better plan for retirement they must possess adequate knowledge of their pension scheme. They also need not to underplay the importance of the moderating variables (that is, financial literacy, educational level, income level and age) during the process of planning. It is therefore essential for employers to organize workshops or seminars to educate their employees on their pension schemes, identify the prospects and challenges associated with the scheme early enough to assist workers to make informed decisions about their retirement.
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LIST OF ABBREVIATIONS

APA - American Psychology Association
FL - Financial Literacy
IRB - Institutional Review Board
KTTPS - Knowledge of Three-tier Pension Scheme
NMIMR - Noguchi Memorial Institute for Medical Research
SSNIT - Social Security and National Insurance Trust
CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

When retirement draws nigh, people ask questions like ‘where will I find purpose? Are people going to remember me? Who will I be? What will my life mean?’ These questions normally are asked when people feel uncertain about the future. Eminent amongst the problems that come along with aging is the kind of fear people attach to retirement. For many, retirement means limitations, losses, financial fears, and worries about how to stay healthy and leave family members unburdened (Prinsloo, 2009). Without the routine of work, people lose structure, social interactions, and sense of purpose, loss of professional identity, loss of income, and loss of lifestyle (Mitchell, 1988). These factors make most people fear how they will cope during retirement. However, other people perceive retirement as an opportunity to experience freedom from work pressures, responsibilities and time constraints (Mitchell, 1988).

The rising cost of living around the world is having significant impact on almost everyone (Polaski, 2008; WACOSS, 2011). The effect is however felt more by the young who are struggling with unemployment and unattainable life goals while the older generation is also being faced with less interest rate as they look to maintain their lifestyle on a fixed income during retirement (Pilkington, 2009).

Due to the long-term nature of pension arrangement, many people are unable to estimate what their pension benefit at retirement will be (Guiso, Jappelli & Padula, 2009). This means that whether these benefits will be sustainable or not may not be known to a number of
people until retirement. Workers who would want to avoid such situations usually invest in pensions and property accumulation known as retirement planning (Rosenkoetter & Garris, 1998). Workers who plan for retirement can contribute meaningfully towards building a sustained quality of life during retirement; the lack of pre-retirement planning however weakens an individual’s life satisfaction (Prinsloo, 2009). Retirement planning on the other hand often seems both limited and belated (Rosenkoetter & Garris, 1998).

Previously, personal pensions were not common and most people had little to plan for (Hedges, 1997). But currently, there is a greater need for retirement planning but many lack the knowledge and understanding they need to do this effectively and are often not well equipped to choose between options (Hedges, 1997). The lack of planning leaves workers who are rapidly nearing retirement with the fear of financial hardship which is much more pronounced as reality dawns on those whose plans are likely to fall short when in their 50s (HSBC, 2011). Drawing from the problems faced in retirement, one will notice that most of it has to do with financial matters because the other aspects of retirement planning such as health, leisure and accommodation to a higher extent depend on the level of an individual’s wealth holding.

Planning for life events, such as retirement reduces uncertainty, motivates behaviour, and enhances personal well-being (Smith, 1996). Those who plan for retirement have realistic expectation about life in retirement, positive attitudes towards retirement and perception of personal control (Aiken, 2002; Mutran, Reitzes, & Fernandez, 1997). Less depression and anxiety which promote psychological well-being during retirement have been found to be some of the long term benefits of retirement planning (Fretz, Kluge, Ossana, Jones, & Merkangas, 1989). Part of retirement planning includes pension schemes which are usually instituted to cater for some of the needs of the aged.
According to the Organisation for Economic Co-operation and Development (OECD) (2005) a pension scheme is a legally binding contract having an explicit retirement objective with some additional benefits such as disability, sickness, and survivors’ benefits. Kenny (2004) affirms that pension schemes provide a platform for employees and employers to set aside a proportion of their earnings to provide benefits in the form of retirement pension in a tax efficient manner. Some form of tax reliefs are therefore enjoyed by workers who contribute to these schemes.

Pension schemes are designed to either operate in the form of Defined Benefits (DB) or Defined Contribution (DC) or a combination of the two as in the case of Ghana. Since the introduction of pension schemes in the 19th Century with the aim of reducing the rate of poverty among retirees especially those living in penury, the system has gone through various reformations in countries such as Chile, Argentina, Brazil, Uruguay, India, Italy as well as Ghana (Costa, 1998; Kpessa, 2011). In Africa, this trend in pension reform is due to the unsustainability of most pension schemes which is owed to high unemployed youth without the needed process of industrialization to absorb them. As a result, the effective utilization of the youth for development to benefit the aged is lacking. There is therefore a significant proportion of our society that is retired or those who will soon be retiring without the needed resources. The growth of this population has raised concerns expressed by politicians, social scientists, health care professionals, and the public in general (Anderson & Weber, 1993).

The increase in life expectancy is occurring in high, middle and low-income countries (He, Muenchrath & Kowal, 2012). According to the 2010 census of Ghana, the number of people aged 60 years and above have increased representing 6.7 percent of the total population. The proportion of people 60 years and above is expected to double in Africa by 2050. As a developing country it raises concerns about how rapid the elderly population is growing compared to the developed countries. The demographic transition leading to an aging
population spans over a century for the develop countries (Angel & Angel, 1997). Nevertheless, in Africa, the same process takes just a few decades which does not give the continent ample time to prepare to absorb these increasing numbers of the elderly (Mbamaonyeukwu, 2001). These concerns are very often directed towards how State pensions can be used in addressing problems associated with the ageing population.

Pension reforms are usually done to make the pension schemes sustainable, simple and to provide support for the vulnerable in society. In Ghana, the current pension reform was as a result of concerns raised by workers about the scheme’s inability to sustain them during retirement. It was also, due to the discrepancy in the pensions received by those under the Social Security and National Insurance Trust (SSNIT) compared to those under the Chapter 30 of the 1950 British Colonial Ordinances (CAP 30).

The new scheme known as the three-tier pension scheme (TTPS) which was established under the National Pension Act 766 took effect in 2010. The three-tier pension scheme consists of two mandatory schemes and a voluntary one. The first tier, a mandatory basic national social security scheme is for all employees in both the public and private formal sectors. The second tier, an occupational pension scheme is also mandatory for all employees in the formal sector. This scheme is privately managed to cater for the employees’ lump sum. The third tier is a voluntary provident fund and personal pension scheme which is supported by tax incentives designed for workers in the formal sector who want to make additional contributions and also for workers in the informal sector.

The second and third-tier of the three-tier pension scheme are contributory in nature, meaning workers are tasked with the responsibility of determining their own financial security (Even & Macpherson 2007; Skinner, 2007). Compared to Defined Benefits, Defined Contribution schemes put more of the responsibility and risk in planning for retirement on the individuals.
involved (Sundén, 2006). This is because decisions about contributions and investment decisions are required by these schemes. Hence, individuals are left not only with the option of how much to save but also how and where to invest their retirement wealth (Kapteyn, Hung, Heinberg, Yoong, & Lusardi, 2011). As a result, to achieve financial security during retirement, it is important to consider retirement planning while taking into account what the pension scheme has to offer. This can only be known through ones knowledge of the scheme.

Unfortunately, Bottazzi, Jappelli and Padula (2006) have confirmed that workers use expected pension wealth as substitute for private wealth meaning they are not likely to invest in other investment machinery or properties aside their pensions which alone may not guarantee a sustained retirement. Agblobi (2011) revealed that those who plan for their retirement have three potential sources of cash flow during retirement. These include social security pensions, other retirement investments and assistance from family and relatives. Unfortunately, when it comes to relying on family members for assistance, one cannot be sure what will happen in the future because the then collectivist Ghanaian culture is now becoming more individualistic (Dei, 2001). The high unemployment rate among the youth can prevent family from taking care of their relatives during retirement. Also, during retirement the ageing process makes one vulnerable to chronic health conditions which family members may be tired of dealing with (Myers, 1957).

Major sources of income for most workers during retirement, come from both public and occupational pensions (Sundén, 2006). This may be due to the confidence individuals attach to paying into a scheme. Dilnot, Disney, Johnson and Whitehouse (1994) assert that one form of guaranteed income for retirement is saving in a pension machinery aside its associated financial risks. Mayhew (2001) also argue that part of a wider support system which provides security in old age is the State pension scheme. He further explains that this support system which provides free access to health and long-term care for the retired worker partly
depends on incomes from the States pension. Kelly (2007) using a sample of 1500 in a study, found that more than half of the respondents agreed that putting money into a pension is the most secured way of saving for retirement. Similarly, Mayhew (2003) concluded that most workers see pensions to be the most relatively secured means of saving for retirement. The above researches indicate how important pensions are to workers. However, some researches indicate that there is a general lack of knowledge of pension schemes among workers (e.g. Byrne & Rhodes, 2005; Clery, Humphrey & Bourne, 2010; de Mesa, Bravo, Behrman, Mitchell, & Todd, 2006; Gustman & Steinmeier, 2001).

Evidently, Byrne and Rhodes (2005) report that employees often have limited general and specific knowledge of the particular schemes they are members of. Similarly, researching retirement decisions in three organisations with occupational pension schemes, Vickerstaff, Baldock, Cox, and Keen (2004) found that many people delay in getting information about their pension options while there is a considerable confusion about how pensions are calculated among workers.

Knowledge of pension schemes has become very relevant for a number of reasons. According to Ameriks (2006) from the individual point of view, the lack of knowledge of the features and provisions of pension arrangement can inhibit the ability to plan for retirement. Ameriks (2006) further explains that whether the lack of familiarity is the result of indecision, complication or psychological barriers, becoming informed represents a real cost that individuals must bear to be able to plan for retirement, irrespective of the type of pension plan they have. From the provider’s point of view, ignorance of the features of the scheme may be dear, inasmuch as unknown or misunderstood incentives are unlikely to be efficient incentives (op. cit.).
Sundén (2006) also added that an important piece of information that aids in deciding when to retire and how much to save have to do with an individual’s knowledge about the level of benefits of a particular pension scheme and how this varies with the choice of retirement age. For instance, workers who would like to retire voluntarily will then be informed about the percentage of pension they will be receiving, also workers in hazardous employment will be informed on their retirement age. This kind of information will update workers to either look for alternative ways of supplementing their retirement benefits or to depend solely on their pension to face the consequences in the future.

Equally, Kenny (2004) argues that there will be the need for additional pension covers aside the one provided by the State to maintain into retirement the standard of living the employee enjoyed whilst working. For instance, the Ireland’s Pensions (Amendment) Acts, 1996-2002 give members the right to obtain comprehensive information about their scheme and how it is run. As a result, Trustees to the Ireland’s Scheme are to account to scheme members by giving basic information about the scheme, their personal entitlements and how the scheme is being administered. Knowledge of pension schemes is found to help individuals, especially the young to decide whether it is adequate for them to take the necessary action to supplement what they have (Kenny, 2004). Similarly, Mitchell (1988) reiterated that workers make myopic and perhaps suboptimal decisions about how much to save for retirement or when to retire if they find it difficult obtaining information about their pension schemes. This, she explained will be translated into poverty during retirement.

Research literature reveals a universal assumption that workers are perfectly informed about the rules and regulations governing their pensions which have to do with the pension scheme and other related issues (Gustman & Steinmeier, 2000). However, results from testing this assumption suggest that workers are rather less than fully informed (Gustman & Steinmeier, 1989; Mitchell, 1988) and that information provision about pension schemes can affect their
behaviour to plan (Bernheim & Garrett, 1996; Clark & Schieber 1998; Madrian & Shea, 2001). As concluded by Vickerstaff et al. (2004:v) “a lack of knowledge and understanding of pension policies and retirement options seriously undermines many people’s capacity to plan ahead for retirement.”

The influence of the three-tier pension scheme on retirement planning depends on other factors such as gender, age, educational level, current income level, financial literacy, and generally the kind of life style the individual will like to enjoy during retirement (Lim, 2003; Luchak & Gunderson, 2000; Lusardi & Beeler, 2006). In the same way, the information acquired about the pension scheme as identified by Mitchell (1988) can be influenced by the abilities of individuals to process complex financial information which may affect retention and understanding of their pension plans. This shows that in studying the relationship between knowledge about the three-tier pension scheme and retirement planning it is prudent to also study the moderating effects of these variables.

The increase in labour force participation of older women at the end of the twentieth century was followed with a notable increase of younger women participation as well (Maestas & Zissimopoulos, 2010). This trend has increased steadily up till today. The increase has however, not reflected in studies investigating women’s knowledge of pension schemes and retirement planning. Most studies indicate men to be more informed about their pension scheme and also as better planners of retirement compared to women.

Bucher-Koenen and Lusardi (2010) indicate that an important tool for making financial decisions concerning retirement is financial literacy. Financial literacy is defined as measuring how well a worker can understand and use personal finance-related information (Huston, 2010). Financial literacy has to do with having the knowledge of financial matters and being able to apply it to human capital specific to personal finance. Workers therefore
need financial literacy to better understand the three-tier pension scheme. As indicated by Chen and Volpe (2005), for workers to be more contented they must be financially knowledgeable in order to make informed investment decisions and take advantage of investment opportunities. Workers might then be able to identify some of the investment opportunities created by the scheme and take advantage of them.

The U.S. House of Representatives Financial Services Committee (2009) also states that increased financial literacy among workers advance their welfare through better decision making which will in turn affect their retirement planning. This notwithstanding, research has emphasized that most individuals lack basic financial literacy, in effect, affecting the way they plan for their retirement (Bernheim 1995, 1998). Lack of financial planning has been attributed to one of the reasons why workers do not plan for their retirement (Lusardi, 2009). Financial illiteracy is particularly acute among the elderly, African-Americans, Hispanics, women, and those with low education levels (Lusardi, 2009). These demographic groups are also those that have been documented as doing little or no retirement planning (op. cit.).

Retirement planning has been found to increase with increases in income levels (Deaton, 2005). Hesketh and Griffin (2010) also found that compared to those who engage in little planning, those with higher income actively engage in retirement planning. In particular, individuals at the top of the income distribution have calculated saving and investment needs more frequently than individuals at the bottom (Lusardi, 2011). Further, knowledge about pension schemes has been found to also influence pension saving (Clark & Strauss, 2008). The question then is how does income affect the relationship between knowledge of pension schemes and retirement planning? As normally is the case, income level increases with the levels of education which have been found to affect retirement planning. Individuals with
higher educational level are known to plan more for their retirement compared to those with lower educational levels.

Age is another factor that influences retirement planning. Studies have shown that the farther individuals are from retirement the less they think about retirement planning. Hesketh and Griffin (2010) found that older individuals actively engage in retirement planning, especially, those close to the retirement age. Therefore, it is essential to find out the effect of age on the relationship between pension scheme knowledge and retirement planning.

The task of choosing how to invest savings for retirement has never been simple. It requires not only specific cognitive skills, such as mathematical and financial knowledge, but also some good understanding of how the pensions system works (Felix, 2012). This study therefore looks at the influence of knowledge of the three-tier pension scheme on retirement planning. Gender and age differences of respondents in relation to their knowledge of pension schemes and retirement planning are also investigated. Further, the moderating role of financial literacy, income level, educational level and age on the relationship was also investigated. This was to find out the effect of financial literacy, income level, educational level and age on the relationship.

1.2 Statement of the problem

Retirement is a stage where one stops working to either enjoy the fruits of his labour or suffer the consequence thereof. Mostly, the realization by workers of their income not meeting their needs is during retirement. This makes them anxious as nothing can be done about the situation. Others also get depressed and live the rest of their life in despair wishing they had planned for their retirement whilst working. These worries result from the kind of preparation workers make towards retirement. Due to individuals’ low knowledge of pension schemes
workers feel reluctant in planning for retirement (Anderson & Weber, 1993). Also, because of the aging process, termination of employment, societal role changes and other conditions that usually accompany retirement, retirees and other family members are often confronted with a variety of new challenges. Finding alternative solution to the wide variety of these problems will require an ongoing effort of retirement planning.

Retirement planning is something that is unpopular in Ghana because workers believe during retirement they will be taken care of by their children or family members who they have catered for whilst working (Dei, 2001; Odundo, 2003). This confirms Mba’s (2010) assertion that children are expected to care for their aged parents due to the lack of a universal pension systems in Africa. Currently, this may not be the case as the once collectivist culture is now following the trend of becoming individualistic making people concentrate more on their immediate family. Now that retirement decisions are left with the individual, there is a likelihood of workers fulfilling present desires while undervaluing future needs (Mitchell & Utkus, 2003). Furthermore, as a result of lack of retirement planning among the Ghanaian populace, there is a conviction that proceeding on retirement implies sentencing oneself to penury. If workers have knowledge on the features of the pension scheme this conviction may have been influenced to change for the better. It is therefore imperative on researchers to investigate variables that are likely to influence retirement planning.

Retirement planning seminars are usually organized for workers to help them better plan for their retirement. However, empirical research on how the component parts of these seminars affect retirement planning is very scanty (e.g. Hershey, Mowen & Jacobs-Lawson, 2003). Knowledge on pension schemes which is an essential part of these seminars is lacking among workers. Knowledge of the three-tier pension scheme will inform contributors of the scheme of the percentage of their current income and what they are likely to receive as pensions during retirement. Workers who find inefficiencies in the system will then be informed to
make a decision on whether to look for alternative ways of maintaining themselves during retirement or not. However, the relationship between these two variables has barely been looked at.

Pension schemes are established as a form of government effort to provide workers with some kind of income during retirement. This alone, however, has not been able to cater for the growing needs of Ghanaian retirees. The reason being the increasing levels of cost of living, cost of health care and the lack of other benefits they would have enjoyed during their working life, such as free medical care, subsidized lunch, petrol coupons and the likes. Also, people cannot enjoy the benefits created in the system when they do not have knowledge of the scheme. In the same vein, if the system is not beneficial, workers will not know. When planning for retirement, likely income to be received as pensions must be considered. It is therefore important for individual workers to really understand what the three-tier pension scheme has in store for them to know the way forward.

According to Hedges (1997), the pension system is highly complex and often poorly understood. Hedges (op. cit.) indicated that rapid changes in the system further destabilises people’s perceptions which eventually leave many feeling uncertain, confused and sometimes anxious about the future. This kind of anxiety can be reduced or resolved if a conscious effort is geared towards seeking information about the new scheme and the provisions therein. Larsson and Paulsson (2010) observed that one important function of what pension scheme information does is to trigger the contributors to start thinking about retirement. They further point out that it also helps individuals to make informed decisions by considering how life choices can affect their pension benefit.

The second and third tiers of the three-tier pension scheme which are contributory in nature have been projected to earn higher returns for contributors. There is also the notion that
pension savings will increase because benefits are directly linked to individuals’ contributions. However, Kpessa (2011) posits that because of the fragile nature of the private sector, pensioners are exposed to income insecurity due to the management of the funds by private fund managers. Also, workers as a result of information overload from competitive potential private fund managers can wrongly choose investment products. Aside this, deductions of operations costs from contributions of workers will reduce their accumulated savings. Further, as a result of weak market institutions, there is a high probability of inflation and investor fraud as well as lack of participants’ protection against market failures (Kpessa, 2011). The individual is therefore at risk of receiving lesser pension income.

Nonetheless, Adenutsi (2009) revealed that retirement is planned to have a special arrangement to cater for retired workers with a consistent income as a result of old age, disability or ill-health when they are no longer earning a regular income. This is affirmed by Dwyer (2001) that retirees who plan to retire will most likely be financially better off than those who retire unexpectedly. Meanwhile, researches show that the most important sources of income during retirement for the elderly are pensions (Mayhew, 2001; Mercer Human Resource Consulting, 2004; Rohwedder & van Soest, 2006). Hence, if most retirees are known to rely on their pension schemes during retirement then it is relevant to find the relationship between their knowledge of the scheme and their retirement planning. In this vein, policies could be put in place to avert any shock or setbacks during retirement. The rapid changes in technology and the rate at which information is becoming easily accessible, one will wonder whether acquiring knowledge about this new scheme should be an issue.

1.3  Aim and objectives of the study

Generally, the study aims to investigate the influence of knowledge of the three-tier pension scheme on retirement planning. Specifically, the study seeks to;
1. Examine the relationship between knowledge of the three-tier pension scheme and retirement planning.

2. Investigate age and gender differences in relation to the knowledge of the three-tier pension scheme and retirement planning.

3. Investigate the moderating roles of age, educational level, income level and financial literacy on the relationship between knowledge of the three-tier pension scheme and retirement planning.

1.4 Relevance of the Study

Normally, government is concerned with the unemployment of the youth and always to find ways to reduce or curb the situation totally. On the other hand, he pays less attention to those who are currently employed that will also be unemployed in the future through retirement. As a result, even as the problem of one group (that is, unemployed) is trying to be solved, another group also suffers (that is, the employed) because they have many dependents to take care of (which includes the retired or aged). This current study will therefore draw government’s attention to the fact that providing pension schemes for workers is not enough to make them enjoy sustained retirement by highlighting on the influence of knowledge of pension schemes on retirement planning.

The outcome of this study would open employers to the importance of educating their employees on the pension scheme as well as the population to target for such programs. These measures if taken might influence employees to make informed decisions which are fundamental to allow for a sustained retirement. Suboptimal decisions taken by workers concerning their retirement will then be controlled.

Most employees are aware that monthly contributions are paid into their pension scheme however, the features of these schemes and even the amount contributed on their behalf are
not known to them (Byrne & Rhodes, 2005; Gustman & Steinmeier, 2001). This can lead to disappointment and even depression if at retirement employees realise their monthly pension is ‘just a peanut’. The study will as a result help employees to understand the importance of seeking information on their pension scheme which can avert some of these disappointments.

Myers (1957) asserts that persons with fixed incomes may be faced with financial problems including the strong likelihood of continued rise in the cost of living for not preparing for their retirement. This kind of hardship during retirement has been the concern of many policymakers and pension researchers. This current study will therefore identify some of the variables that are likely to influence the relationship between knowledge of the three-tier pension scheme and retirement planning. Policymakers can therefore rely on the findings to bring up policies to influence people to plan for their retirement. This in effect will aid in reducing the number of retirees who depend on others for their livelihood. The economic impact of ageing population could be lessened if the right policies for both men and women are put in place for them to adapt to the challenges faced in retirement. This can only be achieved if the differences in gender are investigated.

The study would also contribute enormously toward the retirement planning literature by broadening our understanding of the influence of knowledge of pension schemes on retirement planning. The extent to which this relationship would be strengthened or weakened by variables such as financial literacy, education, income, and age would be explored fully. This is because there is almost no study on the moderation effect of any variable on the relationship between knowledge of pension schemes and retirement planning. Further, research on the three-tier pension scheme in Ghana is very new, especially, with its relation to retirement planning. Therefore, apart from adding to existing literature, the study will also create some form of awareness of the scheme. The study will finally lead the way
for further researches in the field which will help expand the knowledge base through the recommendations made.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section discusses the theories upon which the study is based. This is followed by review of related studies taking into consideration the variables involved. The rationale and the hypotheses to be tested are then stated based on the literature reviewed. The last part of this section briefly defines key terms that have been used in the study.

2.2 Theoretical framework

2.2.1 Continuity theory.

Continuity is seen as a flexible, strong probabilistic relationship between the past, present and likely examples of thoughts, behaviour and social arrangement (Ryff & Marshall, 1999). The craving to get a better understanding of constancy and behaviour change throughout the cycle of aging is the driving force behind the continuity theory. According to Bailey (1994) and Buckley (1967) the continuity theory is a feedback systems theory, that is, the theory evolves continuously.

The feedback systems theory of adult development hypothesizes that in order to organize and interpret life experiences people need mental structures (Levinson, 1990). Similarly, the continuity theory holds that people maintain internal and external structure of continuity when making adaptive choices in situations and when setting goals (Atchley, 1989). The internal structure bases on past internal foundations of the individual to make future decisions. The internal structure is stable throughout the course of life and is made up of
beliefs, ideas, mental skill, preferences and personality. The external structure is made up of an individual’s social roles and relationships which maintain a steady lifestyle and self concept for the person.

Strategies tied to past experiences are preferred when using these internal and external structures. These structures help the individual to accommodate varying degrees of change without experiencing any form of crisis (Ryff & Marshall, 1999). Individuals are therefore presumed to be dynamic, analytic, descriptive, evaluative, decisive, goal oriented and also able to interpret inputs and feedback using thought formed from life time experience (Ryff & Marshall, 1999). Consequently, they are capable of taking effective decisions through what they have learnt continuously from their day to day experiences. When making choices in life whilst adapting to change, there is the motivation for inner structures which represent life time selective investments to be maintained.

The continuity theory states that the activities, personalities, relationships and behaviours of older adults are maintained as it was earlier in their life (Atchley, 1989). That is, even as people exit their primary jobs, they tend to maintain their earlier values, self-esteem as well as life patterns (Richardson & Kilty, 1991). Continuity of lifestyle is maintained by older adults as they adapt to strategies connected to their past experience (Atchley, 1989). When these earlier lifestyle is maintained, post-retirement maladjustment are avoided (Wahat & Earl, 2012). For instance, when faced with an obstacle or problem, the individual evaluates the nature of the obstacle or problem to be able to take the best decision. After evaluating the pros and cons associated with the three-tier pension scheme, the individual may be more likely to make effective decisions that will help sustain them during retirement. This will prevent the person from getting confused when dealing with situations (Redhead, 2009). As pointed out by Mearns (2012), people try to use minimum effort to achieve maximum gain.
Furthermore, this theory suggests that an individual’s course of life development is affected by the diverse features of behaviours revealed in relation to their environment. The ability to better manage and understand changing conditions comes from what one learns through life experience. When learning, external stimuli is perceived, encoded and stored in an individual’s mental niche. To enable decision making, the stimuli encoded are altered to suit the brain’s cognition and interpretation during the analysis of the stimuli (Bettman, 1979). Humans as a result do not merely respond to stimuli but process the information they receive (op. cit.). The information people receive can be objective or perceived and because not all information can be absorbed, individuals are selective in what information they give attention to (Redhead, 2009). The interpretation given to the same objective information may however differ from person to person based on motives, experience, knowledge and social influences (Ricciardi, 2008). It is therefore concluded by Redhead (2009) that perceived information form the basis of decisions. Hence, employees who have in-depth knowledge about the dictates of the pension scheme may be more likely to inculcate this knowledge in decisions concerning their retirement thereof.

Continuity theory is constructive in nature. That is, whilst facing the experiences of life, personal constructs are developed (Kelly, 1955) including ideas about how to retire. The theory posits that personal constructs are influenced by what is learnt from the media and those around us even though they cannot determine them. This means that a person’s experiences of life in terms of their age, financial literacy and level of education, may influence their decisions pertaining to retirement or may not predetermine their course of action towards retirement.

Continuity according to Ryff and Marshall (1999) is about adaptation. Continuity theory assumes that adaptive change is the primary goal of adult development. Through learning across the life span, the adaptive thought develops and does not remain static. It also
maintains that the choices of individuals are to constantly adapt to changing situations and not to only achieve goals. They therefore cater for the development and maintenance of the adaptive capacity of the individual. This involves how people adapt and the expected mental framework they would be using in doing so. What produces effective decisions as well as what gives life satisfaction is clearly spelt out as one ages. Learning over the life time results in an individual’s adaptation to life. Adults, therefore, through adapting to change use both the internal and external structures in their decision making process. The continuity theory can either produce positive change or negative feedback which can lead to disorder. The theory can help us understand why some people have developed the way they are. It is evident that people attach value to things differently depending on whether there will be a gain or a loss. According to Kahneman, Knetsch and Thaler (1990), losses are felt more intensely than gains, thus, individuals try as much as possible to avoid losses.

Furthermore, continuity theorists believe that individuals have goals for the developmental directions which include their activities, relationships and ideas about themselves. Specific developmental goals are influenced by social class and organizational environment. However, life experiences such as education can profoundly affect this goal. A person’s perception of reality is made up of constructs developed through learning from experience. The theory also assumes that selective investments of time and energy are the endurance of thought and behaviour over time. Individual decision making is based on their efforts to develop better knowledge and skills from the feedback from past experience.

The financial situation of people change during retirement, thus, makes it difficult for them to maintain their past values without additional sources of income. Since continuity theory pertains to the individual, it can therefore be classified as a micro-level theory. Continuity theory is useful for individuals who are petrified of going on retirement. Change during retirement is therefore linked to perceive past, thus continuity in inner psychological
characteristics, social circumstances and behaviour are produced. Expecting to be satisfied after retirement is related to earlier retirement expectations (Griffin & Hesketh, 2006). These expectations are normally based on some form of preparation the individual is undertaking and also the knowledge an individual has on the pension scheme. For that reason, pre-retirement lifestyles, better adjustment and successful aging can be achieved with good retirement planning (Anderson, Li, Bechhofer, McCrone, & Stewart, 2000; Kim & Moen, 2002).

### 2.2.2 Rational Choice Theory (RCT)

The Rational Choice Theory (RCT) is also referred to as Rational Action Theory or Choice Theory. The theory was popularised and applied more widely by Becker (1976). Rational choice theory is the idea that people make choices in ways that are advantageous to them while at the same time reducing cost (Simon, 1978). Rationality as used in the theory simply means acting to maximize personal advantage by balancing costs against benefits (Friedman, 1994). Scott (2000) argues that individuals are motivated by the goals that work to their advantage. But because individuals are not able to achieve all their goals, they are usually faced with the problem of making choices. Elster (1989) therefore stated that people choose the option they think will yield the best outcome when faced with alternative courses of action.

The theory assumes that the decision maker has accurate information and knowledge of the situation. Individuals therefore act based on the information, given the constraints and the conditions under which they are acting (Scott, 2000). The rational choice theory holds that the outcomes of alternative courses of action must be anticipated by individuals for them to be able to calculate and choose what will be best for them. The alternative that is likely to give the best satisfaction are then rational (Carling, 1992). Similarly, Abel (2002) stated that
individuals take optimal decisions given the constraints or opportunities considering their preferences.

Rational action has been taken generally to imply conscious individual involved in a deliberate calculative strategies (Scott, 2000). As argued by Homans (1961) human behaviour is not free but determined. That is, through reinforcement in terms of rewards and punishment human behaviour is shaped. Aaron (1999) asserts that people make optimal spending and saving decisions for both their present and future needs based on all resources available to them at a given time. These resources include their knowledge of their pension scheme and how they perceive it to affect their retirement in the future. This follows the assumption of self-regarding interest by the rational choice theory. This assumption states that, an individual’s actions are fully concerned with their own welfare (Ogu, 2013). Similarly, people assess the degree to which personal circumstances such as how retiring can impact on their lives, and then adjust their consumption and saving patterns accordingly (Burtless, 1999). This reflects their desire to maintain a consistent standard of living throughout life (Modigliani & Brumberg, 1954; Friedman, 1957).

The main advantage of the theory is that, it helps in predicting the actions of individuals. It allows for informed decision making and reduces the chances of errors because the rational approach to decisions is on obtained data. It infuses the decision making process with discipline and consistency. The decision maker then arrives at an optimal decision. However, it is time consuming because it requires careful considerations and deliberations of information. It encourages conservation and errs on the side of caution. Decisions to analysis are limited to only information available which may impede creativity because the result of rational decision is experienced in the long term and regrets may set in if the targeted goal is not achieved.
2.3 Review of related studies

This section reviews studies in the area of retirement planning and knowledge of pension schemes that are relevant to this study. The main argument is that retirement planning is influenced by knowledge of pension schemes which currently in Ghana is known as the three-tier pension scheme. Further, literature on gender and age differences in of knowledge of the three-tier pension scheme and retirement planning are presented. Also, the evidence that factors such as age, sex, income level, educational level and financial literacy affects the relationship between knowledge of the three-tier pension scheme and retirement planning is reviewed.

2.3.1 The relationship between knowledge of pension schemes and retirement planning.

An exploratory study by Gustman and Steinmeier (2001) establishes that people are not very well informed about their pensions and social security. However, their retirement and saving behaviour is not very much affected by whether they have been overly optimistic or pessimistic. The study shows that retirement savings are not revised to better attain their desired consumption in retirement. Respondents who overestimated their benefits were shown to be content to accept whatever consumption their saving will permit in retirement. The study implies that planned behaviour is maintained and the effect of pension scheme information will have just a minimal effect on the individual.

In a related study, Byrne and Rhodes (2005) in a discussion paper on employee attitudes to pensions indicates that generally workers have relatively limited knowledge about pensions. Just a handful of the respondents in their study knew the amount of contribution done on their behalf by their company. The study used focus group discussion meaning rich data were gathered because the workers gave detailed views on the topic. In contrast, these comments and views were from workers of one organization with its particular culture and history and...
may not be representative of the views of workers generally. Also, the study did not relate the
effect of this lack of knowledge about pension schemes to retirement planning which is what
this study seeks to find.

According to Mayhew (2003), amendment to a pension scheme can result in an increased
sense of confusion among workers and the lack of knowledge of the scheme too can hamper
workers capability about the nature of retirement provisions to make. This research
investigated both general knowledge of pension schemes and individuals’ understanding of
their own pension arrangement. The general lack of knowledge was shown to prevent people
from saving. The study then concluded that this lack of knowledge on pension schemes can
affect a worker’s ability to make sufficient retirement planning.

Similarly, Mercer Human Resource Consulting (2004) reports that many workers lack
confidence in their retirement planning as a result of their poor understanding of their pension
schemes. The sample was made up of 3116 out of which 96% were members of a pension
scheme. The result shows that 51% of the sample did not know the proportion of the final
salary they will be given as monthly pensions. Three in 10 of the sample reports being
satisfied with their knowledge of the scheme. Ninety percent out of the sample who were not
making additional contributions to the scheme attributed it to their lack of information about
the scheme and not that they could not afford it. The study did not indicate whether these
individuals were preparing in other areas such as accommodation, leisure and health aside
their financial preparation.

Another study by de Mesa, Bravo, Behrman, Mitchell, and Todd (2006) using self reports
investigated Chilean worker’s understanding of pension institutions. The result confirmed
that most workers cannot accurately report contribution requirements under their pension
system. Consequently, they investigated the factors associated with being informed about the
pension system’s characteristics and found that, the less educated and those with poorer backgrounds mostly lacked knowledge of their pension schemes. Based on this they asserted that workers who are more likely to make reasonable provision for old age, possibly by contributing more, paying more attention to plan investments, and making proper payout options are those better informed about their pensions. Elaborating on the above, Kelly (2006) establishes that when respondents in his study were asked what they are likely to do if they think they were not going to have enough money in retirement? Twenty seven percent said they would save more in their existing savings, and 25 percent said they would start to save. Twenty-four percent said they would invest in property. This seems to suggest that, when workers perceive their pension schemes to be unfavourable then they are likely to make other investments to increase their retirement savings.

Further, in assessing individuals’ attitudes to pensions, Clery, Humphrey and Bourne (2010) used face-to-face interviews to sample 1,654 respondents aged 18-69. Their results show that 30 percent of the workers with employer pension did not know how much their employer was contributing on their behalf while only few respondents knew the State Pension age. Upon this revelation they asserted that an important and valuable resource for retirement planning is knowledge of pensions. This is confirmed by Goda, Manchester and Sojourner (2011) that optimal retirement saving behaviour requires an accurate understanding of how current contributions can translate into income in retirement.

Expanding on the above, participants who were sent income projections along with enrolment information in a study by Goda et al. (2011) were more likely to change participation status and increase annual pension contributions compared to a control group (those who did not receive any statement of their income projections). Their study indicates that among those who made a change in contribution, the increase in annual contributions was approximately $800. This implies if workers are exposed to what their pension schemes entails then saving
towards retirement will increase even though there was no indication of the kind of perception the respondents have about the scheme.

A similar study by Mastrobuoni (2011) indicates that workers who were provided with statements on their pensions indicating for instance what they will be benefiting when they retire normally, voluntary or late did not affect their retirement planning. The result contrasts that of Goda et al. (2011). The contrast in the results may be due to workers being indifferent to retirement planning which prevented them from seeking information about their pension scheme as studies have identified (Besley & Prat, 2005; Worthington, 2005; Skog, 2006; Tippet & Kluvers, 2007; James, 2009). It can also be that they have saved enough and are satisfied with what they already have.

Even though Duflo and Saez (2003) acknowledge that small incentives that push individuals to gain more knowledge about retirement savings have significant effect on their retirement planning, for instance, people often choose the default option in terms of automatic enrolment onto the pension scheme (Gough & Sozou, 2005). Consequently, a careful assessment of the pension system in order to consider other options for saving is not done (Madrian & Shea, 2001). Fajnzylber and Reyes (2012) however, reports that the probability of making voluntary contributions towards retirement increased when respondents in their study were provided with information about their replacement rates and tax benefits with respect to their pensions. This shows how important information provision on pension schemes can affect individuals’ saving decisions. The study did not show whether the relationship was influenced by factors such as income, age, financial literacy and educational level.

Examining retirement planning intervention seminars among individuals, Hershey, Mowen and Jacobs-Lawson (2003) found that there is a positive effect of information-based seminars on retirement planning. Their study evaluates the effect of the seminar on retirement planning

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on the whole but does not look at how the component parts of the program (e.g. information on pension schemes) relates differently to retirement planning which this study seeks to find. As concluded by a Social Protection Survey, pension knowledge becomes more useful to people when they become more knowledgeable about their pension schemes (de Mesa et al., 2006). In contrast to the above Cagan (1965) indicates that to prepare wisely for retirement, workers do not need to know the facts of their pension schemes. This is because differences in pension risk as linked to the features of the pension scheme affect individuals differently (Guiso et al., 2009). He further asserted that knowing the details of a pension scheme does not enhance savings. This assertion has not however, been tested empirically in order to have an empirical basis.

On the whole most of the studies reviewed measure only the financial aspect of retirement planning. Also, studies relating knowledge of pensions to retirement planning is limited. However, research suggests that knowledge of the pension schemes is low which often leads to the failure of workers to plan for retirement because the inefficiencies in the system cannot be identified so that plans are made considering them (Mitchell, 1988; Gustman & Steinmeier, 1999; Lusardi & Mitchell, 2006; de Mesa et al., 2006). The relationship between knowledge of pension schemes and retirement planning is supported by Guiso et al. (2009) explaining that in an attempt to prevent adverse effect of pension wealth when pensions become unpredictable, there is an increased enrolment in private pensions and investment in life insurance in order for the individual to be financially secured. It is therefore reasonable to hypothesize that knowledge of the three-tier pension scheme will have a positively significant relationship with retirement planning.
2.3.2 Gender differences in knowledge of pension schemes and retirement planning.

Gustman and Steinmeier (2001) investigated “imperfect knowledge, retirement and saving”. The result of their study using demographic comparison revealed that when it comes to knowledge on pensions, women perform worse than men, whites as compared to blacks did better, respondents closer to retiring were better informed as those with more schooling. Those in the lowest income and wealth deciles do worse than those in the highest.

In a related study Watanbe (2009) reports that in 2002 only 15.7% of females who were eligible for pension in his study had basic knowledge of defined contribution pensions as compared to 31.6% of males who were eligible for pension. Further, 52.8% females and 75.0% males possessed some knowledge of pension scheme out of the workers eligible for pensions including those who reported only hearing the name defined contribution pension. On the whole nearly one-half of females had no knowledge of what a defined contribution plan is as compared to only one-quarter of their male counterparts. Watanbe (op. cit.) concluded that the lack of knowledge among the females compared to their male counterparts hindered them from making additional saving in their defined contributions affecting their retirement planning.

Similarly, van Raaij et al. (2011) indicates that younger females have been found to have lower levels of pension knowledge. The groups lacking the knowledge are those found to also lack retirement planning (Cook et al., 2010). With respect to when retirees will start receiving pensions only about 30 percent men and 17 percent women knew this (Clery, Humphrey & Bourne, 2010). This lack of knowledge can affect savings towards retirement.

Despite the measure of knowledge Chan and Stevens (2003) show that men had better knowledge of their pension schemes than women. Calasanti (1993) also confirms that
females have greater difficulty when asked to indicate why they lack access to information for retirement planning. Financial illiteracy is identified as one of the reasons for women’s lack of retirement planning (Lusardi & Mitchell, 2008). Other factors include, others to which women have their lives linked with such as their husbands (Elder, 1998; Szinovacz & DeViney, 2000). Consequently, with the current increase of women in the labour market it would be prudent to find out if these results are still the same.

Moen, Plassmann and Sweet (2001) reports higher levels of planning for hobbies, social club membership and lower levels of volunteer work for men compared to women. Petkoska and Earl (2009) on the other hand found women to be more likely to plan for leisure. Women were also found to be more likely to make active investment decisions than men (Engström & Westerberg, 2003). Another study by Phua and McNally (2008) indicate that younger men were less likely to save for retirement. These studies indicate males and females do plan in some aspect of their life. The current study in contrast looks at retirement planning holistically, that is, gender differences considering all the other aspects of retirement planning (such as financial, accommodation, health and leisure planning).

Based on the literature, it can be hypothesized that males are more likely to have better knowledge of their pension scheme and also more likely to plan better for their retirement compared to females.

2.3.3 Age differences in knowledge of the three-tier pension scheme and retirement planning.

A study by Lim (2003) on older workers attitude to retirement suggests that compared to respondents below 50 years those aged 50 and above have a more positive attitude towards retirement. This attitude results from the plans these older respondents have in place for their
retirement. This is evident in the high mean recorded on the item which states “I have already made plans for what I am going to do as soon as I retire” (Lim, 2003: 338).

Another study by Benitez-Silva, Demiralp and Liu (2010) shows that knowledge of pension scheme increases with age and education. Meaning there is a positive relationship between the two, however, 33% of those aged 55-64 in their study did not correctly answer a question concerning the maximum retiring age. The study on the whole has the advantage of assessing people’s knowledge of social security over an entire age profile and was not limited to just an older sub-population compared to most researches. However, the study just compared the effect of knowledge of pension schemes among different cohorts without exploring it relationship with retirement planning.

Similarly, van Raaij et al. (2011) point out that 76% of those aged 21-35 had no knowledge of pensions compared to 54% of those aged 50-65. Percentages of those who had complete pension knowledge are 6 and 18 for those aged 21-35 and 50-65 respectively. The difference in the two groups shows that the older an individual the better his pension knowledge and vice versa. It was also made known that the younger respondents have not thought about their retirement planning. This means that those who are closer to the retirement age are expected to have more knowledge of their pension scheme and are expected to be planning for their retirement compared to those far from retirement.

Mayhew (2003) examined the knowledge of pensions, attitude to saving and planning for retirement, saving behaviour and the extent of private pension provision and how these varied according to people’s social and economic characteristics. From the result seven out of 10 people have a lot or some thought about their retirement planning. These were the older individuals and those close to retirement while the younger were less likely to have thought about their retirement.
Further, Kelly (2006) investigated public attitudes to pension reform and found that awareness level of respondents on whether there is a shortfall in pension funds in retirement was significantly lower among the youngest group mostly between the ages of 16-24 years. This result confirms Lusardi (1999) observation that lack of planning for retirement exists among many workers. Also, Larsson and Paulsson (2010) assert that, it is vital to know how projections about pension benefit vary with age when decisions about savings are made.

Lusardi and Beeler (2007) using the 2004 Health and Retirement Study (HRS) with respondents aged 51 to 56 establish that close to 30 percent of the respondents have not thought about how their retirement will be. On the other hand, 75 percent have modest sense of how much wealth they need to amass for retirement.

Moorthy et al. (2012) suggest that the best time to start planning for retirement is 26 to 35 years because of the positive attitude respondents in their study exhibited toward retirement during those years. All things being equal, twenty six years could be the earliest age to start planning for retirement for an individual in Ghana whose education has not been interrupted (that is, without him stopping to work before continuing) to the Master’s level. This is because that is the age he would have completed schooling to be able to start working. Using three large companies with over 1,500 workers nearing retirement, Clery et al. (2010) found that the rate of misconception about the appropriate age for retirement affects planned age of retirement. This indicates that retirement plans made with insufficient or inaccurate knowledge of pension schemes may result in inefficient planning.

In contrast to these studies, Engström and Westerberg (2003) indicate that compared to older individuals, younger individuals make active investment decisions. Even though lack of retirement planning has been shown to be prevalent among the young in some studies, the MetLife Mature Institute (2005) reports that as much as those aged 50 years and above look
forward to social security as their primary source of income, the younger cohort between the ages of 41 to 49 are planning more for their retirement. The MetLife Mature Institute (2005) study contradicts that of Moorthy et al. (2012) who said the younger cohort finds it difficult to plan for their retirement. This brings to bear the rate at which things are changing globally. It can be said that this younger cohort are having access to information more readily as compared to the older cohort when they were their age. This could be the result for their change in attitude. This current research is interested in how the differences in these cohorts affect the relationship between knowledge of the three-tier pension scheme and retirement planning.

2.3.4 Age as a moderator on the relationship between knowledge of the three-tier pension scheme and retirement planning.

Anderson, Li, Bechhofer, McCrone and Stewart (2000) show that, the probability of thinking about retirement increases with age, mainly after about 50 years. They also indicate that, individuals under 40 years and those between the ages of 40 and 49 form 38% and 32% respectively of those who have little or no thought about retirement (op. cit.). Also, among these groups more than half as well as those age 50 to 59 feel financially, they have not prepared enough. The study investigates the age difference in thought about retirement planning. It however, fails to investigate other factors that are likely to influence retirement planning, such as knowledge of pension schemes and whether age can moderate such relationship.

Agblobi (2011) posits that retirement planning must start at the early stages of an individual’s working life. In making decisions about work and savings, a projection about pension benefit and how this vary with age is necessary, especially with the introduction of the contributory pension system (Larsson & Paulsson, 2010). It is therefore costly not to start planning for retirement early (Agblobi, 2011). Even though studies indicate that it is better to
start retirement planning early, Anderson, Li, Bechofer, Mccrone and Stewart (2000) show that, it is the time many have their minds firmly fixed on other things. It is therefore important to investigate whether age moderate the relationship between knowledge of pension scheme and retirement planning.

In studying the retirement planning behaviour of working individuals in Malaysia, Moorthy et al. (2012) find out that the younger generation as a result of the long-term planning involved see retirement planning as a burden. They therefore do not put in efforts to plan for their retirement. A study by Cobb-Clark and Stillman (2006) indicate that more than one out of five of middle age individuals delayed their retirement planning. Also, one out of 10 does not want to retire or have any expected retirement age. These studies did not find out whether there is any relationship between knowledge of pension schemes and retirement planning. The studies did not also investigate the amount of variance that can be accounted for by age on this relationship.

Generally, retirement planning earlier in a working life has been shown to be more beneficial. However, the studies reviewed above show a general lack of knowledge of pension scheme and retirement planning among younger individuals (e.g. Lusardi, 1999; Mayhew, 2003). The literature reviewed did not show whether age can strengthen or weaken the relationship between knowledge of the three-tier pension scheme and retirement planning as was done in this current study.

### 2.3.5 Educational and Income level as moderators on the relationship between knowledge of the three-tier pension scheme and retirement planning.

Lusardi and Beeler (2006) examined individuals aged 51-56. It was found that those who do not plan are those with less than a high school education. Even though some proportions of
non-planners were found among the highly educated, they concluded that planning is strongly linked to educational level. A survey conducted by Moorthy, Sien, Leong, Kai, Rhu and Teng (2012), shows that education and income level were significant predictors of retirement planning. Similarly, a strong correlation was found between retirement planning and education by Ameriks, Caplin, and Leahy (2003).

Helman, Copeland and VanDerhei (2006) report that in acquiring retirement information, there were sharp increases in the number of hours spent on reading related materials with respect to rises in education and income. Cook, Jacobs and Kim (2010) also find out that individuals with better education had more knowledge about social security and plan more for their retirement. Van Raaij et al. (2011) in addition indicate that higher educational level corresponds to higher pension knowledge and retirement planning. The studies did not however measure the effect of education and income on the relationship between knowledge of pension schemes and retirement planning.

Annexes (2006) divulges that middle income households are most likely to under save for retirement. Among middle income households those without a degree were the more likely to under save for retirement. This group which is made up of mostly the self employed may be under saving for retirement because they tend to work throughout their life. Felix (2012) suggests that workers who have higher education and more knowledge about the pension system are more likely to make active investment choices for retirement. In contrast, educational level according to Chan and Stevens (2003) does not significantly increase the probability of being well informed to plan for ones future.

Skog (2006) examining what members of the Chilean pension system know about their pension system, indicates that the more educated, the old, those with higher incomes and workers at bigger companies were more informed. Consistently, Individuals who earn higher
incomes are found to know better about their social security as compared to those who earn lower incomes (Cook et al., 2010). These individuals are found to have savings to draw from during retirement because saving towards retirement rises in proportion of the individual’s income (Bell, Carasso & Steuerle, 2005). Mayhew (2003) shows that higher income earners who are knowledgeable about their pensions were more likely to know what their income in retirement will be.

Investigating workers knowledge of pension provisions, Mitchell (1988) establishes that a large number of employees were unable to identify key features of their company pension schemes, such as the normal retirement age and how much their benefits would rise if they delayed retirement. High income earners were found to be better informed compared to low income earners.

Analysing how much employees know about their pension schemes Luchak and Gunderson (2000) reveal that the level of understanding among all workers in terms of their pension scheme knowledge is very low. Nevertheless, pension scheme knowledge was high among those the knowledge matters most to, such as those close to retirement. Workers who are in highly-skilled semi professions possessed accurate knowledge about the features of their pension scheme as well as workers with higher earnings.

According to Bell et al. (2005), saving for retirement is important in maintaining the standard of living during the working life of the individual into the years of retirement. However, inadequate saving for retirement has been found to be an issue for both the poor and middle income earners (Bell et al., 2005). The pension system is not fully explored by workers and therefore they do not take full advantage of the provisions in the system (Bell & Lerman, 2005). The reason is attributed to the fact that low and moderate income earners who make up the majority of workers lack basic knowledge to save and invest wisely (Bell & Lerman,
2005). Aside this, they mostly rely on social security while private pension in asset building is either absent or low among them (Bell et al., 2005).

According to Larsson and Paulsson (2010), saving among low income households is depressed by lack of sufficient income to afford saving and the lack of supply in saving’s products for the poor, coupled with the low rates offered to them. Saving for retirement according to Rohwedder and van Soest (2006) to a large extent depends on the amount of retirement income one is likely to receive from social security. As a result they advocate that individuals must adjust their saving behaviour by forming expectations about retirement income to have successful retirement planning. This is confirmed by Moorthy et al. (2012) that income level has a significant influence on retirement planning.

Gustman and Steinmeier (2004) demonstrate that pension benefits represent one-half of retirement wealth for a typical family and an even larger share for low-income families. Madrian and Shea (2001) discovered that 71% of US workers choose the default investment alternative of their 401(K) plans and do not make effort in looking at other available investments portfolios. Meanwhile individual’s plan for retirement is found to strongly influence their well-being and financial security at old age (Today’s research on Aging, 2012). Therefore it is important to engage in retirement planning in order to have financial security in retirement.

Stawski, Hershey and Jacobs-Lawson (2007) establish that planning predicts saving tendencies, however, income level explains about half of the variance in terms of saving. It is therefore an important element underlying the motivation to save. Lower-income Americans have been found to be less likely to engage in retirement savings compared to higher income earners (Lusardi & Mitchell, 2008). Mayhew (2003) using a face to face interview confirms
that workers with higher incomes had more knowledge about their pensions in general as well as what their income in retirement will be.

The studies above show that educational level and income levels affect retirement planning. Therefore acknowledging whether an individual’s educational and income level will determine retirement planning. They also, expand on how education and income affect knowledge of pension schemes. However, how these two variables individually affects the relationship between knowledge of the three-tier pension scheme and retirement planning is something yet to be established which makes this research very handy.

### 2.3.6 Financial literacy as a moderator between knowledge of the three-tier pension scheme and retirement planning.

Using the Rand American Life Panel (ALP) dataset, Lusardi and Mitchell (2007) compared self assessed financial knowledge levels with objective measures of financial literacy to identify key causal links. The results revealed that no matter the measure used financial literacy proved to be a key determinant of retirement planning. This is consistent with Lusardi’s (2009) result which shows that workers who are more likely to plan for retirement are those who are more financially knowledgeable. Another research by van Raaij, Huiskes, Verhue and Visser (2011) concludes that low pension knowledge generally corresponds to low financial literacy.

According to Njuguna and Otsola (2011), individuals risk failing to plan for retirement because they underestimate their retirement needs as a result of having minimal pension finance literacy. As reported by Capuano and Ramsay (2011) the need for better informed and financially literate workforce has been prompted by the increased number of people reaching retirement and the shift towards the personal responsibility of funding one’s retirement.
Different studies have established strong and positive relationship between financial literacy and retirement planning (van Rooij, Lusardi & Alessie, 2011; Bucher-Koenen & Lusardi, 2010; Klapper & Panos, 2011). Examining the relationship between financial literacy and retirement planning, significant differences were found in the financial literacy between planners and non-planners (Almenberg & Säve-Söderbergh, 2011). Kapteyn, Hung, Heinberg, Yoong and Lusardi (2010) state that the more financially literate individuals are the more likely they plan for their retirement. However, the researcher’s use of correlation does not give the exact impact of these variables on one another and as such difficult to draw any causal inferences.

Similarly, Kefela (2010) indicates that financial literacy is directly correlated with behaviours that are beneficial to the individual, as such, it can influence individuals in making plans for the future considering inflation, returns on investment and the appropriate investment machinery to undertake. Capuano and Ramsay (2011) also indicate that financial literacy correlates greatly with voluntary superannuation savings. Consequently, as the financially literate saves more for retirement they also have an enhanced ability to set retirement goals that are realistic and achievable (Bernheim & Garret, 1996; Garman 1997). They therefore need financial literacy to make optimal decisions. However, various surveys show that lack of financial literacy abound. The question then is does financial literacy moderate the relationship between knowledge of the three-tier pension scheme and retirement planning? This is something researchers may not have considered.

Using data from the 2006 and 2009 social protection survey, Felix (2012) establishes that there is a positive significant effect on the probability of making investment decisions as a result of financial literacy and knowledge of pensions. Financial literacy according to Capuano and Ramsay (2011) promotes some form of positive financial behaviours. On the other hand, some financial behaviour such as investing and acquiring wealth equips
individuals with experience which eventually improves their financial literacy (Monticone, 2010). A positive relationship between financial literacy and financial behaviour can therefore be observed.

A study by Njuguna, Mutanu, Otsola and Thuku (2011) show that 58.7% of respondents demonstrate a strong understanding of pension scheme issues as opposed to 49.3% literacy in financial issues. Consequently, the participants identified the lack of financial literacy in understanding pension fund matters as a major hindrance when it comes to participating in pension schemes. Similarly, studies have shown that major barriers to improving people’s knowledge about the pension system are due to the lack of financial education and retirement planning (Worthington, 2005; Tippet & Kluvers, 2007; James, 2009). Lack of financial literacy was identified as one of the reasons for employees not joining pension schemes (Hall & Floyd, 2009). This means that financial illiteracy is preventing employees from saving for their future. The study indicates that financial literacy has a strong and positive relationship with planning which is more evident in those who understand risk diversification. The above studies reveal how financial literacy can contribute to an improvement in pension scheme knowledge and a further improvement in the retirement planning in terms of saving. However, they do not show if a relationship exists between knowledge of pension scheme and retirement planning or whether financial literacy weakens or strengthen this relationship.

From the literature, it is well established that a positive and significant relationship exist between financial literacy and retirement planning. The literature also revealed that financial literacy can affect retirement planning as well as knowledge of pension schemes (e.g. Lusardi, 2009; Lusardi & Mitchell, 2007; van Raaij et. al., 2011). But the degree of contribution of financial literacy to the relationship between knowledge of pension schemes and retirement planning has not been well established. Moreover, almost all the studies reviewed were done in Western countries. These are countries characterised by individualistic
culture and are likely not to rely on their children during retirement for support. The same thing cannot however be said about Ghana, where the children are expected to take care of their parents after they have retired. It is therefore plausible to find the effect of financial literacy on the relationship between knowledge of the three-tier pension scheme and retirement planning. Inferring from the above it can be anticipated that higher financial literacy would strengthen the relationship between knowledge of the three-tier pension scheme and retirement planning.

2.4 Rationale for the study

The Ghanaian pension scheme has now introduced a defined contribution plan on both the second and third tiers in addition to a defined benefit plan which is the first tier. This means that workers now have the responsibility of not only saving for retirement but also how much to allocate to their pension (Lusardi, 2009). Personal responsibility according to DWP (2011) is a guiding principle for pension reforms to enable individuals to take responsibility for meeting their retirement aspirations in the context of increased longevity. In the same way, the system is made simple for people to plan and save for retirement (DWP, 2011). As a result workers who are aware of this provision in the new pension scheme can take it into consideration when planning for their retirement.

However, from the studies that have been reviewed it is shown that empirical researches that focus on knowledge of pension schemes in relation to retirement planning are very limited. Moreover, the few researches that have looked at the relationship between knowledge of pension schemes and retirement planning mostly focus on only one aspect of retirement planning which is, financial retirement planning (e.g. Gustman & Steinmeier, 2001; Mayhew, 2003; Mercer Human Resource Consulting, 2004; Clery et al., 2010; Goda et al., 2011; Mastrobuoni, 2011). This study therefore intends to measure retirement planning holistically in relation to pension scheme knowledge.
In addition, there is almost no study on the moderating effects of financial literacy, age, income and educational level on the relationship between knowledge of pension schemes and retirement. The studies reviewed either relate these variable to either knowledge of pension schemes or retirement planning (e.g. Benitez-Silva, Demiralp & Liu, 2010; Klapper & Panos, 2011; Stawski et al., 2007). Also, the inconsistent result regarding the gender differences in knowledge of the three-tier pension scheme and retirement planning has made it imperative to be investigated.

Some of the studies reviewed investigated only the level of knowledge of pension scheme among the respondents without relating it to retirement planning (Byrne & Rhodes, 2005; Gustman & Steinmeier, 2001). Others also examined the knowledge of pension schemes in relation to savings and not retirement planning (e.g. Mayhew, 2003). One study (Hershey et al., 2003) which examined the positive effect of information-based seminars on retirement planning did not further investigate how the component parts of the program (e.g. the part which looks at pension schemes) relates differently to retirement planning which this current study seeks to find out.

Byrne and Rhodes (2005) in their study gathered data from just one organization, this current study however used employees from selected organizations to get varied views across the population to improve the quality of information generated.

This current research has therefore come very handy in finding how knowledge of the three-tier pension scheme affects retirement planning in the Ghanaian context where mostly individuals rely on their children and other relatives to cater for them during retirement.

Additionally, the three-tier pension scheme is very new in Ghana and aside the research assessing how knowledge of it affects retirement, it also establishes whether workers know the features of the scheme or not. This is crucial because making sound decisions about
retirement involves adequate knowledge about the characteristics of pension schemes, savings and portfolio allocation (Sundén, 2006). Simply contributing to pensions is not an indication that a worker will have a comfortable retirement since income fall considerably with age. Thus, the increasing rate of uncertainty that is associated with the three-tier pension scheme (Kpessa, 2011) makes it challenging to find out how this knowledge is affecting workers plans for retirement.

2.5 Statement of hypotheses

1. Knowledge of the three-tier pension scheme will have a positively significant relationship with retirement planning.

2. Males will be more likely to have better knowledge of the three-tier pension scheme and also more likely to plan better for their retirement compared to females.

3. Individuals aged 40-59 years will be more likely to have better knowledge of their pension scheme and also more likely to plan better for their retirement compared to those aged 30-39 and 18-29 years.

4. Age will significantly moderate the relationship between knowledge of the three-tier pension scheme and retirement planning.

5. Educational level will significantly moderate the relationship between knowledge of the three-tier pension scheme and retirement planning.

6. Income level will significantly moderate the relationship between knowledge of the three-tier pension scheme and retirement planning.

7. Financial literacy will significantly moderate the relationship between knowledge of the three-tier pension scheme and retirement planning.
2.6 Proposed theoretical model

This study was guided by the conceptual model presented in Figure 1. Knowledge of the three-tier pension scheme and retirement planning are independent and dependent variables respectively. Financial literacy, age, income level and educational level are the moderators. The model posits that knowledge of the three-tier pension scheme will have a direct relationship with retirement planning. The model also hypothesizes that the relationship will be moderated by financial literacy, educational level, income level and age.

2.7 Operational definition of terms

- **Retirement planning (Dependent variable)** – plans or preparations to meet the demands of life during retirement.

- **Educational level** – highest level of education a worker has attained.

- **Income level** – the amount of money a worker receives at the end of the month.
• **Financial literacy** – a worker’s ability to answer questions on interest rate, inflation and risk diversification.
CHAPTER THREE

METHODOLOGY

This chapter explains the research design and the methods used in the study. These include the target population, sampling technique, sample, design, procedures for data collection, a description of the measures used in the data collection and the ethical considerations employed in the study.

3.1 Population/Sample

Workers in the formal sector in the Accra Metropolis made up the population for this study. Respondents were selected from the Accra Metropolis because of the diverse nature of the work force here, some of which have migrated from the other regions of Ghana. The formal sector was also the area of focus because workers in the informal sector mostly tend not to retire from their business. They are mostly the owners of the business or may be running it with their family. Also, for the informal sector there is no legal age for retirement so retirement planning may not be important to them as compared to workers in the formal sector who are expected to retire at a certain age. The sample for this present study was drawn from the Ghana Broadcasting Corporation, City Investment Company, National Identification Authority, Ecobank Ghana Limited, National Health Insurance Authority and ADRA Ghana. These organizations were used because of ease of access which was convenient for the research due to the limited period for undertaking the study.

3.2 Sampling and Sampling Technique

The convenient non-probability sampling method was used in selecting the organizations. This method was used because not all organizations written to gave approval to the
researcher. The researcher also considered proximity and ease of access to the participants in selecting the organizations. As a result, places where easy approval could be gotten were used.

Purposive sampling technique was employed in selecting participants for the study. This was done by giving questionnaires to only participants who were contributors to the three-tier pension scheme and aged 18-59 years. Only contributors to the scheme were used because knowledge of the scheme will not have a direct effect on those who have not been migrated onto the scheme. The age limit was set at 59 years because the legal age for retirement in Ghana is 60 years. As indicated by Babbie (2004), purposeful sampling underpins all sampling decisions.

Participants were drawn from six different organizations in the Accra Metropolis. It included all employees who have been migrated to the three-tier pension scheme. One Hundred and ninety-six (196) participants were purposely selected from the six organizations. The 196 is deemed appropriate based on Tacbanick and Fidel (2007) formula N>50+8m, where N is the sample size and m is the number of independent variables. Since there were six independent variables (knowledge on the three-tier pension scheme, financial literacy, income level, educational background, gender and age) the estimated sample size is to be greater than 98. In view of this, the sample size of 196 used for this study is considered adequate.

Participants were selected from the formal sector (i.e. both private and public) due to the nature of the variables of interest. Out of the total of 196 respondents used for the current survey, (39%) were between the ages of 18-29 years, while (37%) age ranged between 30-39 years and (24%) also age ranging between 40-59 years. Fifty two percent of the respondents are males and (48%) are females. Thirty seven percent of the respondents earn Gh¢ 1,101 and above monthly, 48% and 15% also earn Gh¢ 501-1,100 and below Gh¢100-500 respectively. Those who are married make up the majority adding up to (52%) followed by (40%) who are
single with six and three percent divorced and widowed respectively. Seventy three percent (73%) had at least a first degree and (27%) have below a first degree education. In relation to tenure in current organization, respondents who have been employed from 1-5 years represent (47%), 6-10 years represent (28%), followed by 16+ years with the minority being 11-15 years representing (10%).

3.3 Design

Data for the study variables were collected during a particular period of time, the cross-sectional survey design was therefore deemed appropriate. Another reason for this design is that the respondents drawn have varied demographic backgrounds in terms of their education, age, income, financial literacy, sex, tenure of office and position held. Also, the study used questionnaires which were self-reported to obtain the data to assess whether knowledge of the three-tier pension scheme influences retirement planning. Other variables such as financial literacy, educational level, income and age moderate this relationship.

3.4 Instruments/Measures

The study used the instrument in the form of a questionnaire comprising of four different sections: section A, B, C and D. Respondents demographics were gathered in Section A, knowledge of the three-tier pension scheme, retirement planning and financial literacy were investigated using Sections B, C and D respectively.

Section A: Demographic Variables

In this section items assessed respondent’s demographics and background information such as age, sex, education, income, marital status, highest level of education, position in organization and number of years in employment. Respondents were required to tick or provide information about them where appropriate. The demographic information was assessed to enable the researcher to describe the sample. It was to enable the researcher
determine how age, educational level, and income level affect the relationship between knowledge of the three-tier pension scheme and retirement planning. Age was categorised ranging from 18-29, 30-39 and 40-59. Sex was measured as either male or female. Income also ranges from below Gh¢ 100 to Gh¢ 1,101 and above. For level of education it was assessed whether participants were degree or non-degree holders.

**Section B: Knowledge on Three-tier Pension Scheme**

The scale was developed by the researcher with assistance from Supervisors. The scale has 14 questions, question 8 and 9 enquires about participant’s awareness and how they got to know about the scheme. The next eleven questions from 10 to 20 measure what participants know about the three-tier pension scheme with the options true, false and don’t know at the end of each. Question 21 ask participants to rate how their knowledge about the three-tier pension scheme has influenced their retirement planning.

Exploratory factor analysis of the items using principal component analysis yielded there are factors which suggested four components. Using Catell’s (1966) test on scree, two of the components were therefore maintained for further analysis (Refer to Table 4.1. and Appendix H for factor loadings and the scree plot respectively). The coefficients of the items ranged from .85 to .37, with the factor loadings making significant contributions to the variable.

The rating for this question ranges from “True”, “False” and “Don’t know”. Scores of respondents ranges between 0 and 11. A correct answer to each of the 11 questions asked yields a score of 1. A sample question is “the worker contributes 5% of basic salary while the employer contributes 13.5% on behalf of worker, totalling 18.5%.” The Cronbach alpha of .80 was recorded for the main study.
Section C: Retirement Planning

A modified version of Akuamoah-Boateng (2000) retirement planning scale was used in measuring retirement planning. The scale is made of four subscales under the headings financial preparedness, health, accommodation and leisure. Respondents were asked to indicate their level of preparedness at the end of each subsection with a 7-point scale ranging from “Not Preparing at all, Preparing, Somehow Preparing, Don’t Know, Quit Preparing, Prepared, and Fully Prepared”. For the rest of the questions respondents were given options to choose from while others were YES or NO questions. Overall preparedness is measured using the last items on each subsection with the 7-point scale. The rest of the questions under the subsection were then used to explain the person’s retirement preparedness. The minimum score on the scale is 4 while the maximum score is 28. The study recorded an average Cronbach alpha of .74 based on all the four subscales.

Financial Preparation – This section asks questions on how participants are preparing towards retirement financially. Questions relate to pension schemes, benefits, and contribution, investment etc. While some questions require participants to give definite response the rest require YES or NO answers. A Cronbach alpha for the study was .80. A sample question from this subscale is “do you think that your pension will be enough to take care of you and your dependents during retirement?

Preparation towards Accommodation – This section asks questions on the kind of preparation for accommodation participants are undertaking towards their retirement. Participants were given four options to choose from on the second and third questions under this section, otherwise they were to specify any other option not listed. The rest of the questions had YES, NO, or Already Have with the last question being measured on a 7-point scale. Some of the questions include “do you have your own house”, “where do you live” and
where will you live or plan to live during retirement?” This subscale yielded a reliability cronbach alpha of .70.

**Preparation towards Health** – The six (6) items which made up this section elicit information about plans towards health. Some of the questions include “does your company pay your hospital expenses” and “how long do you hope to live”. Participants were required to answer YES or NO or choose from a list of options. The reliability coefficient for this scale in the current study was .75.

**Preparation towards leisure** – This section elicit information on preparation towards leisure. Participants were to answer YES or NO for some questions and choose from a list of options for the rest with some requiring specific answers if not included in the list. A question in this section is “if you have a hobby what is it?” this scale also yielded a reliability coefficient of .70.

**Section D: Financial Literacy Scale**

The Financial Literacy Scale was adapted from empirical studies (Lusardi & Mitchell 2007; Lusardi, 2011). The questionnaire has 6-items which evaluate fundamental concepts of economics and finance expressed in everyday life. It includes calculations on interest rates, inflation, risk diversification, relationship between bond prices and interest rates, and the relationship between interest payment and maturity in mortgages. Respondents were considered to have a low financial literacy if they score from 0 to 2 and intermediate financial literacy. Scores from 5 to 6 corresponds to a high level of financial literacy. The reliability coefficient for this scale is .70. Sample items in the scale include “do you think the following statement is true or false? Buying a single company stock usually provides a safer return than a stock mutual fund.” The responses were True, False, Don’t know and Prefer not to say.
3.5 Procedure for Pilot study

The pilot study was to test the adequacy of the research instrument, assess the feasibility of the survey and establish whether the sampling frame and technique were effective (van Teijlingen & Hundley, 2001). This was further to provide important information to help improve the structure and content of the questions to reflect the current study. The study was conducted with a sample size of 30 purposefully selected to determine the reliability of the questionnaire for the study. As stated by Radhakrishna (2007) reliability can be established in a pilot study with the use of a sample size of between 20-30. The sample was selected from two formal organizations. They were made up of 17 males and 13 females with similar characteristics. The respondents complained about the length of the questionnaire but due to the importance of each item none of it was deleted during the main study. Aside that most of the respondents said the questionnaire has spurred them up to start thinking about their retirement.

The knowledge of the three-tier pension scheme and the financial literacy scale yielded a Cronbach alphas of .70 and .73 respectively. The retirement planning subscales yielded Cronbach alphas of .75, .70, .75 and .69 for the finance, accommodation, health and leisure respectively and an overall average Cronbach alpha of .72.

3.6 Procedure for Main Study

The researcher submitted a proposal for the study to the Noguchi Memorial Institute for Medical Research (NMIMR), Institutional Review Board (IRB) for ethical approval. The Board reviewed and approved the study on the 8th of May, 2013 (see Appendix A). Introductory letters were taken from the Psychology Department, University of Ghana and sent to the various organizations identified for the study. Six of the organizations in the Accra Metropolis granted permission, these included Ghana Broadcasting Corporation, City Investment Company, National Identification Authority, Ecobank Ghana Limited, National
Health Insurance Authority and ADRA Ghana. At almost all the organizations one of the employee serves as a liaison and introduces the researcher as we move from department to department. The liaison first briefs the potential participants on the objectives and the purpose of the study to the employees. The researcher then answers questions asked by some of the employees who needed further clarification on the study. Workers who were identified as contributors to the three-tier pension scheme were then made to fill a consent form approved by the NMIMR-IRB to give their consent to partake in the study. Those who gave their consent were given the questionnaires to fill. Clear details on how the questionnaires should be filled were given. Assistance was however given to respondents who needed further clarifications on some of the questions. Two hundred and fifty (250) questionnaires were distributed out of which two hundred and thirteen (213) were returned yielding a response rate of 85.2%. Out of the 213 questionnaires returned, one hundred and ninety six (196) were used for the analysis. Seventeen of the questionnaires were not used because they were not completed. Confidentiality was assured by asking the respondents not to indicate their name and that of their organization on the questionnaire. They were also asked not to provide any information (e.g. their phone number) that could link the questionnaire to them. The respondents were encouraged to fill the questionnaire within one week. However, it took about three to four weeks for all the questionnaires to be gathered from the six organizations with the help of a Research Assistant.

3.7 Research Ethics Considered in the Study

Code of ethics plays an important role in the field of psychology. This is because in carrying out research the welfare of participants is to be protected. As such, the American Psychology Association (APA) code of ethics has laid down procedure that a researcher must adhere to in order to minimise or avoid undue harm to participants. Ethical implications are therefore to be considered a part of the research process (Brewerton & Millward, 2001).
According to the APA Code of Ethics Standard 3.10 participants in a study must consent to be a part of the study (American Psychological Association, 2011). Permission must be sorted from authorised persons for those who are legally incapable of giving their consent as in the case of minors. Participants gave their consent by filling a consent form after which they were given the main questionnaire in accordance with standard 3.10 of the code of ethics (see Appendix B). In accordance with Standard 8.02 participants were informed of the inconvenience the filling of the questionnaire will cause to them since it will be done during working hours (American Psychological Association, 2011). They were therefore allowed to do it at their own time. Also, they were informed that the research will not benefit them directly even though their participation is very important.

Participants were further assured of confidentiality and anonymity of the information they will provide. They were made to understand that information will be treated without any relation to the person who provided it. They were therefore asked not to write their names or departments on the questionnaire. They were further assured that the information they provide will be used for research purposes only.

The right to decide not to respond to the questionnaire before or during the answering of the questionnaire was clearly outlined to participants. The right to choose to answer specific statement or withdraw from the study was also stated. For any doubt or additional information participants were provided with the contact of the researcher and that of the NMIMR-IRB. All these were clearly stated in the consent form which was endorsed by the NMIMR-IRB.
CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the data analysis and key findings which have been summarized in relevant tables. The series of statistical tests include descriptive statistics, factor analysis of the knowledge of three-tier pension scheme questionnaire developed and reports on the summary of statistical analysis of the data collected in relation to the hypotheses tested. There is also detailed presentation of the tables with their interpretations. The key findings are then highlighted and the observed relationships presented in a figure form at the end of the chapter. The version 20 of the Statistical Product and Service Solutions (SPSS) software was employed in the analysis. This software was used due to its effectiveness in data management and the wide range of options in terms of methods, graphs and charts it presents (Harri, 2012). Also, there are more techniques available for cleaning the data and above all, the organization of the output is better compared to other software (Harri, 2012).

4.2 Analysis of Data

Prior to the testing of the hypotheses, preliminary analyses were conducted to ascertain the construct validity of the knowledge of pension scheme questionnaire through factor analysis, the Skewness, Kurtosis and Cronbach’s alpha. This section therefore describes the various methods employed in the analysis of the data collected.

4.2.1 Factor analysis of knowledge of three-tier pension scheme questionnaire.

Greater confidence is attached to the interpretation of results when a newly developed instrument is subjected to factor analysis. This process establishes construct validity of the survey instrument developed thereby strengthening the data collected (Burton & Mazerolle,
The degree to which a measure correlates with the concept investigated theoretically results in construct validity (Turocy, 2002). Construct validity makes the conclusions drawn from the findings justifiable because the instrument developed measures what it is suppose to measure (Netemeyer, Bearden & Sharma, 2003). The researcher therefore carried out a principal component factor analysis on the items of the newly developed knowledge of the three-tier pension scheme questionnaire. The influence of the factors on each construct was measured by means of their factor loadings; the value of each of the factor loadings indicates the strength of the influence of the factor on the variable. For a factor loading to make a significant contribution to the variable of study it had to be greater than .3 (Field, 2005), factors of the items on the scales loaded satisfactorily upon the principal component analysis. The factor analysis indicated that the scale has construct validity (see Table 4.1).

4.2.2 Analysis of descriptive statistics, Skewness, Kurtosis and Cronbach’s alpha.

The descriptive statistics generated from the summary of the raw data indicate the means and standard deviations of the sample used. In carrying out statistical tests some assumptions have to be met. The researcher therefore tested for normality to check whether the variables are normally distributed to meet one of the assumptions of undertaking a regression analysis (Garson, 2012).

To measure the inter-correlation of the items in each instrument used, the coefficient of internal consistency (Cronbach’s alpha) was computed to ascertain the reliability of the instruments being used in the study (see Table 4.2).

4.2.3 Analysis of the main hypotheses.

Seven hypotheses were tested, hypothesis one was analysed using the Pearson Product-Moment Correlation Coefficient (Pearson r) which explored the relationship among the key variables in the study. The Pearson r was deemed appropriate because same subjects are each been measured on two variables that is retirement planning and KTTPS (Opoku, 2006). Also,
the level of measurement on each of the variables was on an interval scale which is a basic requirement for the use of the Pearson r (Opoku, 2006).

Hypothesis two was analysed using the Independent t-test. This test was used because according to Opoku (2006) some basic requirement for the use of the Independent t-test are when samples are randomly drawn from two populations (in this case, males and females) and the difference between the means of the two samples were being compared to the difference between the means of the two populations from which the samples were drawn. Also, the dependent variable (Retirement Planning) is measured on an interval scale.

With Hypothesis three, differences in knowledge of the three-tier pension scheme and retirement planning were measured using three independent groups (that is, those age 18-29, 30-39 and 40-59) as a result the analyses was done using the One-Way Analysis of Variance.

Finally, hypotheses four, five, six and seven were analysed with the Hierarchical Multiple Regression using the Enter method. Regression analysis assumes that there must be a linear relationship between the independent and independent variables (Nardi, 2006). Also, the variables were measured on an interval scale (Nardi, 2006). Moderation analysis was used in testing these moderating hypotheses (that is, hypotheses four, five, six and seven). The basis for this analysis both conceptually and statistically are outlined below.

**Conceptual meaning of moderation analysis.**

Generally, a moderator is a quantitative or qualitative variable that affects the strength and/or direction of the relationship between a predictor and a criterion variable (Baron & Kenny, 1986). This study examined whether financial literacy, income level, educational level and age affects the relationship between knowledge of the three-tier pension scheme and retirement planning. To capture both a correlation and experimental views of the moderator
variables, Baron and Kenny (1986) suggests a prescriptive and analytic procedure outlined in the path diagram in Figure 2.

**Predictor**
(Knowledge of the three-tier Pension scheme, KTTPS)

**Moderators**
(Financial Literacy, FL)
(Income level)
(Educational Level, EL)
(Age)

**Outcome Variable**
Retirement Planning

**Predictor × Moderator**
(KTTPS×FL)
(KTTPS×INCOME LEVEL)
(KTTPS×EL)
(KTTPS×AGE)

**Figure 2: Path diagram of the moderating model (Baron & Kenny, 1986)**

There are three causal paths in Figure 2 above that feed into the outcome variable retirement planning: the effect of KTTPS as a predictor (Path a), the effect of Financial Literacy, Income level, Educational level and Age as moderators and the product of the predictor (KTTPS) and each of the moderators (i.e. KTTPS×FL, KTTPS×EL, KTTPS×AGE, KTTPS×INCOME LEVEL) (Path c). If the interaction (Path c) is significant then the moderator hypothesis is supported (Baron & Kenny, 1986).

**Statistical Test for Moderation Analysis**

As a requirement for moderation a relationship was first established between the dependent and independent variable (see Table 4.3). Hierarchical Multiple Regression was then employed to the various moderation hypotheses. Specifically, Baron and Kenny’s (1986) proposed procedure which is widely accepted for testing moderation was employed in this current study. This procedure involves four stages;
1. To eliminate the problem associated with multi-collinearity the predictor and moderator are centred or standardized.

2. Using the standardized values, the interaction between the predictor and moderator are calculated.

3. The outcome variable is then regressed on the predictor, moderator and their interaction. Using the hierarchical regression analysis, the predictor, moderator and interaction terms are entered into the first, second and third block respectively.

4. There is a moderation effect if the beta of the interaction effect of the predictor and moderator is significant and vice versa.

4.3 Presentation of results.

This chapter presents the summaries of the relevant tables of the data analysed with their interpretations.

4.3.1 Preliminary analysis.

Prior to the testing of the main hypotheses preliminary analysis was done which include factor analysis of the knowledge of three-tier pension scheme questionnaire, descriptive statistics, skewness, kurtosis cronbach’s alpha and a Pearson Correlation Product Moment Coefficient to find the relationship among the variables of interest. Summaries of the result and interpretation are summarised in the tables below;
Table 4.1

Factor loadings based on a principal component analysis of the 11 items on the KTTPS (N=196)

<table>
<thead>
<tr>
<th>Items</th>
<th>Component 1</th>
<th>Component 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The scheme is made up of three-tiers of which the 1st and 2nd tiers are mandatory and the 3rd tier is a voluntary provident fund/personal pension (for both the formal and informal sector)</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>2. When a member dies before 60 years his benefits is paid to his beneficiaries</td>
<td>.72</td>
<td></td>
</tr>
<tr>
<td>3. Minimum contribution period is 180 months or 15 years in aggregate</td>
<td>.56</td>
<td></td>
</tr>
<tr>
<td>4. Survivors benefit period have been increased from 12 years in the old scheme to 15 years in the new scheme</td>
<td>.85</td>
<td></td>
</tr>
<tr>
<td>5. Lump sum benefit can be used as collateral to secure mortgage or primary residence</td>
<td>.49</td>
<td></td>
</tr>
<tr>
<td>6. Survivor's benefits period is for 15 years</td>
<td>.81</td>
<td></td>
</tr>
<tr>
<td>7. Accrued benefits on the 2nd tier can be preserved or transferred to another account during change of employment</td>
<td>.58</td>
<td></td>
</tr>
<tr>
<td>8. SSNIT manages 13.5% of the total contribution</td>
<td>.67</td>
<td></td>
</tr>
<tr>
<td>9. A member who retires before the minimum contribution period receives his total contribution plus interest accrued</td>
<td>.58</td>
<td></td>
</tr>
<tr>
<td>10. The worker contributes 5% of basic salary while the employer contributes 13.5% on behalf of the worker, totaling 18.5%</td>
<td>.41</td>
<td></td>
</tr>
<tr>
<td>11. The age at which an individual qualifies to contribute to the scheme is between 25 and 60 years</td>
<td>.37</td>
<td></td>
</tr>
</tbody>
</table>

% Of variance explained 25% 20%

The 11 items on the knowledge of the three-tier pension scheme questionnaire was subjected to principal components analysis using SPSS. Prior to performing principal components analysis the suitability of the data for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. A Kaiser-Meyer-Olkin value of .81, exceeding recommended value of .6 (Kaiser, 1974) and Bartlett’s Test of Sphericity (p=.000) was also significant (Bartlett’s, 1954) thus supporting the factorability of the correlation matrix.
Principal component analysis reflected the presence of four of the components with eigenvalues exceeding 1, which explained (34%), (11%), (10%), and (9%) of the respective variance. Inculcating Catell’s (1966) test on scree, two of the components were therefore maintained for further analysis. The coefficients of the items ranged from .85 to .37, with the factor loadings making significant contributions to the variable; the varimax method of rotation was used which showed the presence of a simple structure of the factor loadings of the items. The solution from the two factors accounted for a variance of (45%), with component one representing (25%) and component two representing (20%). The interpretation from the principal component analysis of the newly developed scale indicates that the scale falls under two components and also has construct validity.

Table 4.2
Summary of descriptive statistics, Skewness, Kurtosis and Cronbach’s alpha

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL</td>
<td>2.31</td>
<td>1.47</td>
<td>.26</td>
<td>-.58</td>
<td>.70</td>
</tr>
<tr>
<td>KTTPS</td>
<td>4.51</td>
<td>2.97</td>
<td>-.12</td>
<td>-.99</td>
<td>.80</td>
</tr>
<tr>
<td>RP</td>
<td>11.17</td>
<td>4.63</td>
<td>.89</td>
<td>.35</td>
<td>.74</td>
</tr>
</tbody>
</table>

Note: N= 196, FL= Financial Literacy, KTTPS= knowledge of the three-tier pension scheme, RP= Retirement planning

As indicated in Table 4.2 above the standard deviation(s) observed in relation to their respective mean(s) show small standard deviations in relation to the means. This implies that, majority of the respondents scores were close to the mean score. Therefore, the individual variations as compared to the mean were widely spread. To run for normality a common rule of thumb is to divide the skew and kurtosis by their standard (Garson, 2012). The result in (Table 4.2 and Appendix F) reveals that, the division of the Skewness and kurtosis values by their standard error scores show z- scores less than 3.29 (significant at the p < 0.01 level). Since these scores are below the upper threshold of 3.29 the data is normally distributed (Tabachnick & Fidell, 2001). Thus the use of parametric statistical analysis is appropriate.
Appreciable levels of internal and external consistency of scores on the instruments were also observed. This therefore boosted the confidence of the researcher in the use of the scales due to the reliability of the scales established.

Table 4.3

Pearson correlations matrix for dependent, independent and moderating variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Educational level</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Income level</td>
<td>.47**</td>
<td>-.31**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Financial Literacy</td>
<td>.66**</td>
<td>-.06</td>
<td>.35**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Knowledge on three-tier pension scheme</td>
<td>.65**</td>
<td>-.04</td>
<td>.35**</td>
<td>.60**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Retirement Planning</td>
<td>.66**</td>
<td>.04</td>
<td>.32**</td>
<td>.82**</td>
<td>.52**</td>
<td></td>
</tr>
</tbody>
</table>

Note: N=196, ** = \( \rho < .01 \) (one tailed)

The result as shown in (Table 4.3) above indicates there is a significant positive relationship between age and retirement planning \([r_{(196)} = .66, \ \rho < .01]\), Income level and retirement planning \([r_{(196)} = .32, \ \rho < .01]\) and Financial Literacy and retirement planning \([r_{(196)} = .82, \ \rho < .01]\). Educational level in relation to retirement planning in contrast was not significant \([r_{(196)} = .04, \ \rho > .01]\).

The interrelationship between variables from Table 4.3 indicates that financial literacy and knowledge of the three-tier pension scheme are significantly positively related \([r_{(196)} = .60, \ \rho < .01]\) as well as income level and knowledge of the three-tier pension scheme \([r_{(196)} = .35, \ \rho < .01]\). Age and knowledge of the three-tier pension scheme also revealed a significant positive relationship \([r_{(196)} = .65, \ \rho < .01]\). Educational level and knowledge of the three-tier pension scheme however, did not show any significant relationship \([r_{(196)} = -.04, \ \rho > .01]\). There was also no significant relationship between educational level and retirement planning \([r_{(196)} = .04, \ \rho > .01]\).
4.3.2 Testing of main hypotheses of the study.

Based on the objectives stated seven main hypotheses were formulated. The Pearson Product-Moment Correlation Coefficient (Pearson \( r \)), Independent t-test, One Way Analysis of Variance and Hierarchical Multiple Regression were used in analysing the hypotheses.

**Hypothesis one:** *Knowledge of the three-tier pension scheme will have a positively significant relationship with retirement planning.*

The correlation matrix in Table 4.3 above indicates that knowledge of the three-tier pension scheme correlates significantly and positively with retirement planning \([r_{(196)} =.52, \rho>.01]\). This squared coefficient \((r^2 = 0.27)\) demonstrates that knowledge of the three-tier pension scheme accounts for 27% of the variance in retirement planning. Further analyses showed that knowledge of the three-tier pension scheme correlated significantly with age \([r_{(196)} =.65, \rho>.01]\); income level \([r_{(196)} = -.31, \rho>.01]\) and financial literacy \([r_{(196)} =.60, \rho>.01]\). Detailed characteristics of the respondents with regards to their retirement planning have been outlined below.

**Characteristics of respondents with regards to retirement planning**

Referring to Appendix J, (83%) of the respondents think their pension will be inadequate in catering for their needs in retirement even though (67%) did not know how much their pensions will be. In addition to their pensions (69%) are investing to boost their sustainability but (31%) are not. Most of these investments are into Treasury bill (37%) even as saving account and other investment represent (33%) and (30%) respectively. Aside the money investment, (91%) either has or plans to own businesses in order to earn some additional income during retirement. Of this, (16%) are interested in farming, (26%) in stores, eight percent in livestock rearing, (23%) in other business and (27%) have not yet decided on the kind of business to venture into. Concerning plans towards accommodation, only (25%) of
respondents own houses. However, almost all of them plan to live in their own houses during retirement (98%) and (39%) are in the process of building their own houses of which (88%) believe can be completed before retirement. The hospital expenses of (71%) of respondents currently are taken care of by their organizations. Of this only (18%) will still be catered for by their organizations during retirement. Interestingly, 128 out of the 196 respondents had health insurance aside 68 who are not registered under any health scheme. Out of the 68 respondents, (87%) intend to fund their health bills through their own resources, nine percent by their children and four percent by other relatives of theirs during retirement. Majority of respondents had hobbies or interests (94%) but the most notable was reading (48%). With respect to how respondents will spend their free time during retirement, (58%) stated they will engage in their own business, three percent have planned stay at home, five percent said they will get employment, eight percent will look after grand children while eight percent said they do not know yet. Thus the hypothesis that Knowledge of the three-tier pension scheme will have a positively significant relationship with retirement planning was confirmed.

**Hypothesis two: Males will be more likely to have better knowledge of the three-tier pension scheme and also be more likely to plan better for their retirement compared to females.**

To determine whether males would be more likely to have better knowledge of their pension scheme and also more likely to plan better for their retirement compared to females, the independent t-test method was employed and the results are summarized in Table 4.4 below:

**Table 4.4**

Summary of Independent t-test of gender differences in retirement planning and KTTPS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Male</th>
<th>Female</th>
<th>df</th>
<th>t</th>
<th>ρ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retirement Planning</td>
<td>10.78(4.25)</td>
<td>11.60(4.99)</td>
<td>194</td>
<td>1.23</td>
<td>n.s</td>
</tr>
<tr>
<td>KTTPS</td>
<td>4.58(2.98)</td>
<td>4.43(2.97)</td>
<td>194</td>
<td>.36</td>
<td>n.s</td>
</tr>
</tbody>
</table>

>Note: KTTPS = Knowledge of the three-tier pension scheme

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Table 4.4 shows that, there is no significant effect of gender of respondents on retirement planning, \([t(194) = 1.23, \rho> .05 ]\). Gender did not also significantly affect knowledge of the three-tier pension scheme, \([t(194) = .36, \rho> .05 ]\). The hypothesis which stated that males would be more likely to have better knowledge of their pension scheme and also more likely to plan better for their retirement compared to females was therefore not confirmed.

**Hypothesis three:** *Individuals aged 40-59 years will be more likely to have better knowledge of their pension scheme and also be more likely to plan better for their retirement compared to those aged 30-39 and 18-29 years.*

Hypothesis three was analysed using the One-Way ANOVA and the result is summarised in table 4.5 below.

**Table 4.5**

<table>
<thead>
<tr>
<th>Variables</th>
<th>18-29 years</th>
<th>30-39 years</th>
<th>40-59 years</th>
<th>df</th>
<th>F</th>
<th>(\rho)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KTTPS</td>
<td>2.32(2.23)</td>
<td>5.11(2.40)</td>
<td>7.20(2.12)</td>
<td>2,193</td>
<td>70.51</td>
<td>.000</td>
</tr>
<tr>
<td>Retirement Planning</td>
<td>7.99(2.67)</td>
<td>11.55(3.60)</td>
<td>15.91(4.42)</td>
<td>2,193</td>
<td>75.06</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Note:** KTTPS = Knowledge of the three-tier pension scheme

Table 4.5 indicates that age had significant effect on knowledge of the three-tier pension scheme, \([F(2,193) = 70.51, \rho< .05 ]\) and also retirement planning \([F(2,193) = 75.06, \rho< .05 ]\).

As a result of this significant effect of age, the Bonferoni method of multiple comparisons was used to compare the different categories of age in relation to knowledge of the three-tier pension scheme and retirement planning to find out whether significant differences exist among the groups. The results are summarised in Table 4.6 and Table 4.7 below;
Table 4.6

Multiple comparisons of the age differences in knowledge of the three-tier pension scheme

<table>
<thead>
<tr>
<th>Age Categories</th>
<th>18-29 years</th>
<th>30-39 years</th>
<th>40-59 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29 years</td>
<td>_</td>
<td>2.78*</td>
<td>4.87*</td>
</tr>
<tr>
<td>30-39 years</td>
<td>2.09*</td>
<td>_</td>
<td>2.09*</td>
</tr>
<tr>
<td>40-59 years</td>
<td></td>
<td></td>
<td>_</td>
</tr>
</tbody>
</table>

Note: * = The mean difference is significant at the 0.05 level.

Referring to Table 4.6 the multiple comparison shows that a significant difference exists between respondents aged 18-29 years and those aged 30-39 years \( (t = 2.78, \rho < .05) \) as well as those between the age of 18-29 years and 40-59 years \( (t = 4.87, \rho < .05) \) in their knowledge of the three-tier pension scheme respectively. There is also a significant difference in knowledge of the three-tier pension scheme between those aged 30-36 years and those aged 40-59 years \( (t = 2.09, \rho < .05) \).

Table 4.7

Multiple comparison of age difference in retirement planning

<table>
<thead>
<tr>
<th>Age Categories</th>
<th>18-29 years</th>
<th>30-39 years</th>
<th>40-59 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29 years</td>
<td>_</td>
<td>3.56*</td>
<td>7.93*</td>
</tr>
<tr>
<td>30-39 years</td>
<td>4.37*</td>
<td>_</td>
<td></td>
</tr>
<tr>
<td>40-59 years</td>
<td></td>
<td></td>
<td>_</td>
</tr>
</tbody>
</table>

Note: * = The mean difference is significant at the 0.05 level.

The result in Table 4.7 reveals that significant difference exist between respondents aged 18-39 years and those aged 30-39 years \( (t = 3.56, \rho < .05) \) as well as those aged 18-29 and 40-59 years \( (t = 7.93, \rho < .05) \) respectively in relation to their planning towards retirement.
Significant differences can also be seen in those between the ages 30-39 years and 40-59 years \((t = 4.37, \rho < .05)\).

Referring to table 4.6 and 4.7, the hypothesis that individuals aged 40-59 years are more likely to have better knowledge of their pension scheme and also more likely to plan better for their retirement compared to those aged 30-39 and 18-29 years was confirmed.

**Hypothesis four:** *Age would moderate the relationship between knowledge of the three-tier pension scheme and retirement planning.*

The hierarchical multiple regression was used in analysing hypothesis four and Table 4.8 summarise the result.

**Table 4.8**

Hierarchical Multiple Regression Analysis Testing the Moderating Effect of Age on the Relationship between Knowledge of the Three-tier Pension Scheme and Retirement Planning

<table>
<thead>
<tr>
<th>Model</th>
<th>(B)</th>
<th>(SE\ B)</th>
<th>(\beta)</th>
<th>(t)</th>
<th>(\rho)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 Constant</td>
<td>7.55</td>
<td>.52</td>
<td>14.62</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.81</td>
<td>.10</td>
<td>.52</td>
<td>8.41</td>
<td>.000*</td>
</tr>
<tr>
<td>Step 2 Constant</td>
<td>3.69</td>
<td>.63</td>
<td>6.24</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.24</td>
<td>.11</td>
<td>.15</td>
<td>2.20</td>
<td>.029*</td>
</tr>
<tr>
<td>Age</td>
<td>3.33</td>
<td>.42</td>
<td>.56</td>
<td>8.00</td>
<td>.000*</td>
</tr>
<tr>
<td>Step 3 Constant</td>
<td>3.78</td>
<td>.64</td>
<td>5.94</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.25</td>
<td>.11</td>
<td>.16</td>
<td>2.34</td>
<td>.020*</td>
</tr>
<tr>
<td>Age</td>
<td>3.20</td>
<td>.42</td>
<td>.54</td>
<td>7.64</td>
<td>.000*</td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme (\times) Age</td>
<td>.57</td>
<td>.28</td>
<td>.11</td>
<td>2.05</td>
<td>.042*</td>
</tr>
</tbody>
</table>

**Note:** \(R^2 = .27\) for step 1, \(\Delta R^2 = .18\), and \(.01\) for steps 2 and 3 respectively, \(* p < .05\)

From Table 4.8 above, step 2 of the model was significant in explaining \((18\%)\) of the variance in retirement planning \([F(1,193)= 64.001, \rho=.000, \Delta R^2=.18]\). Age accounts for 56%
variance in retirement planning ($\beta = .56, t = 8.00, p < .05$). The interaction between knowledge of the three-tier pension scheme and age accounts is significant accounting for 11% variance in retirement planning ($\beta = .11, t = 2.05, p < .05$). The model is as a result consistent with hypothesis five’s prediction that age would moderate the relationship between knowledge of the three-tier pension scheme and retirement planning.

**Hypothesis five:** *Educational level would moderate the relationship between knowledge of the three-tier pension scheme and retirement planning.*

To determine whether educational level significantly moderate the relationship between knowledge of the three-tier pension scheme and retirement planning, a hierarchical regression was done using the ENTER method and the results are summarized in the Table 4.9 below:

**Table 4.9**

Hierarchical Multiple Regression Analysis Testing the Moderating Effect of Educational level on the Relationship between knowledge of the three-tier pension scheme and Retirement planning

<table>
<thead>
<tr>
<th>Model</th>
<th>$B$</th>
<th>$SE$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 Constant</td>
<td>7.55</td>
<td>0.52</td>
<td>14.62</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.81</td>
<td>0.10</td>
<td>.52</td>
<td>8.41</td>
<td>.000*</td>
</tr>
<tr>
<td>Step 2 Constant</td>
<td>6.72</td>
<td>0.98</td>
<td>6.89</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.81</td>
<td>0.10</td>
<td>.52</td>
<td>8.44</td>
<td>.000*</td>
</tr>
<tr>
<td>Educational Level</td>
<td>.64</td>
<td>0.64</td>
<td>.06</td>
<td>1.00</td>
<td>.319</td>
</tr>
<tr>
<td>Step 3 Constant</td>
<td>6.79</td>
<td>0.97</td>
<td>7.04</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.78</td>
<td>0.10</td>
<td>.50</td>
<td>8.22</td>
<td>.000*</td>
</tr>
<tr>
<td>Educational Level</td>
<td>.69</td>
<td>0.63</td>
<td>.07</td>
<td>1.09</td>
<td>.278</td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme × Educational level</td>
<td>.63</td>
<td>0.27</td>
<td>.14</td>
<td>2.34</td>
<td>.020*</td>
</tr>
</tbody>
</table>

*Note:* $R^2 = .27$ for step 1, $\Delta R^2 = .00$, and $.020$ for steps 2 and 3 respectively, *$p < .05$*
At step 2 in Table 4.9 the model did not account for any significant contribution in explaining the variance in retirement planning \[F(1,193)= 1.00, p > .05, \Delta R^2 = .00\]. Educational level was also not significantly correlated with retirement planning (\(\beta = .06, p > .05\)). The Step 3 of the model was however, consistent with expectation by predicting a significant interaction between knowledge of the three-tier pension scheme and educational level accounting for (14\%) variance in retirement planning \[F(1,192)= 5.49, p < .05\]. Field study interaction is reported to typically account for 1\% - 3\% variance according to social science literature reviewed by Champoux and Peters (1987) and Chaplin (1991). The hypothesis three was therefore supported by the data. The educational level only acted as a moderator to determine the strength of the relationship between knowledge of the three-tier pension scheme and retirement planning without necessarily having any relationship with the dependent variable (retirement planning).

**Hypothesis six:** *Income level would moderate the relationship between knowledge of the three-tier pension scheme and retirement planning.*

Table 4.10 below summarises the result of the hierarchical multiple regression analysis used for this hypothesis.
Table 4.10

Hierarchical Multiple Regression Analysis Testing the Moderating Effect of Income Level on the Relationship between Knowledge of the Three-tier Pension Scheme and Retirement Planning

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 Constant</td>
<td>7.55</td>
<td>.52</td>
<td>14.62</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.81</td>
<td>.10</td>
<td>.52</td>
<td>8.41</td>
<td>.000*</td>
</tr>
<tr>
<td>Step 2 Constant</td>
<td>5.61</td>
<td>.96</td>
<td>5.85</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.72</td>
<td>.10</td>
<td>.46</td>
<td>7.16</td>
<td>.000*</td>
</tr>
<tr>
<td>Income Level</td>
<td>1.04</td>
<td>.44</td>
<td>.15</td>
<td>2.39</td>
<td>.018*</td>
</tr>
<tr>
<td>Step 3 Constant</td>
<td>4.82</td>
<td>1.00</td>
<td>4.82</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.72</td>
<td>.10</td>
<td>.46</td>
<td>7.21</td>
<td>.000*</td>
</tr>
<tr>
<td>Income Level</td>
<td>1.30</td>
<td>.44</td>
<td>.19</td>
<td>2.93</td>
<td>.004*</td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme × Income level</td>
<td>.69</td>
<td>.28</td>
<td>.15</td>
<td>2.46</td>
<td>.015*</td>
</tr>
</tbody>
</table>

Note: $R^2 = .27$ for step 1, $\Delta R^2 = .02$, and .02 for steps 2 and 3 respectively. * $p < .05$

Referring to Table 4.10 above, the step 2 of the model was significant and accounted for (15%) variance in the dependent variable. In line with the prediction made, the interaction between knowledge of the three-tier pension scheme and income level in step 3 was statistically significant ($\beta = .15$, $t = 2.46$, $p < .05$) accounting for a 15% variance in retirement planning.

**Hypothesis seven:** Financial literacy would moderate the relationship between knowledge of the three-tier pension scheme and retirement planning.

To determine whether financial literacy significantly moderate the relationship between knowledge of the three-tier pension scheme and retirement planning, a hierarchical regression was done using the ENTER method and the results are summarized in Table 4.11 below:
Table 4.11
Hierarchical Multiple Regression Analysis Testing the Moderating Effect of Financial Literacy on the Relationship between KTTPS and Retirement planning

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 Constant</td>
<td>7.55</td>
<td>.52</td>
<td>14.62</td>
<td>.000***</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.81</td>
<td>.10</td>
<td>.52</td>
<td>8.41</td>
<td>.000***</td>
</tr>
<tr>
<td>Step 2 Constant</td>
<td>5.10</td>
<td>.38</td>
<td>13.57</td>
<td>.000***</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.05</td>
<td>.08</td>
<td>.03</td>
<td>.60</td>
<td>.547</td>
</tr>
<tr>
<td>Financial Literacy</td>
<td>2.54</td>
<td>.16</td>
<td>.81</td>
<td>15.73</td>
<td>.000***</td>
</tr>
<tr>
<td>Step 3 Constant</td>
<td>4.80</td>
<td>.39</td>
<td>12.17</td>
<td>.000***</td>
<td></td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme</td>
<td>.06</td>
<td>.08</td>
<td>.04</td>
<td>.70</td>
<td>.485</td>
</tr>
<tr>
<td>Financial Literacy</td>
<td>2.54</td>
<td>.16</td>
<td>.81</td>
<td>15.93</td>
<td>.000***</td>
</tr>
<tr>
<td>Knowledge on three-tier pension scheme × Financial Literacy</td>
<td>.44</td>
<td>.19</td>
<td>.09</td>
<td>2.32</td>
<td>.021*</td>
</tr>
</tbody>
</table>

Note: R² = .27 for step 1, ΔR² = .41 and .01 for steps 2 and 3 respectively, *** p < .001, ** p < .01, * p < .05

From Table 4.11, the results in step 1 reveal that the model significantly accounted for (27%) variance in retirement planning [F(1,194)= 70.67, ρ< .001, R²=.27]. The model accounted for (41%) variance in retirement planning in step 2 [F(1,193)= 247.32, ρ< .001, ΔR²=.41]. The entire model was significant [F(1,192)= 5.38, ρ< .05, ΔR²=.01] and accounted for (9%) variance in retirement planning (see Appendix E for all the F values).

Also, from the Table 4.11 above financial literacy accounted for 81% variance in retirement planning, (β=.81, t= 15.73, ρ< .001). The interaction between knowledge of the three-tier pension scheme and financial literacy is significant and accounts for a 9% variance in retirement planning, (β=.09, t= 2.32, ρ< .05). Therefore, the hypothesis which states that

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financial literacy would moderate the relationship between knowledge of the three-tier pension scheme and retirement planning was supported by the data.

4.4 Additional Analysis

The researcher in the quest to find out whether the knowledge of the three-tier pension scheme significantly correlates with any of the components of retirement planning (that is, financial preparation, accommodation, health and leisure) performed a Pearson Product Moment Correlation Coefficient and the results have been summarised in Table 4.12 below;

Table 4.12
Pearson correlation for the four components of Retirement Planning

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. KTPS</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>2. Financial Prep</td>
<td></td>
<td>.56***</td>
<td>_</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>3. Accommodation</td>
<td></td>
<td></td>
<td>.48***</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>4. Health</td>
<td></td>
<td></td>
<td></td>
<td>.37***</td>
<td>_</td>
</tr>
<tr>
<td>5. Leisure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.30***</td>
</tr>
</tbody>
</table>

Note: N=196, ** = p < .01 (one tailed), KTPS = Knowledge of the three-tier pension scheme (Independent variable)

In Table 4.12 above it is shown that there is a significant positive relationship between knowledge of the three-tier pension scheme and all the four components of retirement planning, that is, financial preparation \( r_{(196)} = .56, \rho < .01 \), accommodation \( r_{(196)} = .37, \rho < .01 \), health \( r_{(196)} = .36, \rho < .01 \) and leisure \( r_{(196)} = .30, \rho < .01 \). It can also be observed from Table 4.12 that all the four components have significant positive correlation with each other [e.g. accommodation and financial preparation \( r_{(196)} = .48, \rho < .01 \), financial and health \( r_{(196)} = .43, \rho < .01 \)].
4.5 Summary of main findings

In summary only hypothesis two was not consistent with the predictions made, the result of the study are outlined below;

1. There was a significant positive relationship between knowledge of the three-tier pension scheme and retirement planning.
2. There was no significant difference between males and females in their knowledge of the three-tier pension scheme and retirement planning.
3. Individuals aged 40-59 years had better knowledge of their pension scheme and also plan better for their retirement compared to those aged 30-39 and 18-29 years.
4. Age moderated the relationship between knowledge of the three-tier pension scheme and retirement planning.
5. Educational level moderated the relationship between knowledge of the three-tier pension scheme and retirement planning.
6. Income level moderated the relationship between knowledge of the three-tier pension scheme and retirement planning.
7. Financial literacy moderated the relationship between knowledge of the three-tier pension scheme and retirement planning.

Figure 3 below summarises the observed relationships among the variables.
Figure 3: A summary of the observed relationships between independent, dependent and moderating variables.

Summary of additional findings;

- There was a significant positive relationship between knowledge of the three-tier pension scheme and financial preparation towards retirement.
- There was a significant positive relationship between knowledge of the three-tier pension scheme and accommodation preparation towards retirement.
- There was a significant positive relationship between knowledge of the three-tier pension scheme and health preparation towards retirement.
- There was a significant positive relationship between knowledge of the three-tier pension scheme and leisure preparation towards retirement.

Figure 4 below shows the observed relationship among the variables.
Figure 4: A summary of the observed relationships between knowledge of the three-tier pension scheme and the four components of retirement planning.
CHAPTER FIVE

DISCUSSION

5.1 Introduction

The findings with regard to whether the stated hypotheses were confirmed or not are presented in this chapter. In reference to related studies and theories on which the hypotheses were based, the findings are discussed. Further, implications for practice, recommendations for future research, limitations and conclusion of the study are also presented.

5.1.1 Knowledge of three-tier pension scheme and retirement planning among workers.

The first hypothesis predicted a positive relationship between knowledge of the three-tier pension scheme and retirement planning such that workers who have more knowledge of the three-tier pension scheme will plan better for their retirement. This hypothesis was confirmed after a correlation analysis was done. The current findings may be due to the fact that, workers who have more knowledge on the three-tier pension scheme may have realised the risk associated with some parts of the scheme especially the second-tier. The second tier which is privately managed is faced with administrative cost which will in turn reduce the overall rates of returns to pensioners (Kpessa, 2011). This is because the operations cost and profits of fund managers are charged on the retirement contributions. As a result workers who are aware of this may take steps to increase their pension wealth by finding other means of sustaining themselves during retirement. It can also be that, workers who were planning for their retirement realised the need to learn more about the current scheme as a result exposing
them to the details of the scheme and what they are to expect in the future regarding their pensions.

According to the current data, 83% of the respondents think their pensions will not be enough to cater for them during retirement. As a result, they are taking steps in complementing the contributions they make in the pension scheme through other means such as, in the purchase of treasury bills, investing into personal businesses and savings accounts. A lack of knowledge of the current system will not have informed this decision. As noted by Kpessa (2011) workers face the risk of insufficient retirement income if the investment portfolios in which the second tier contributions were invested decline in value. As such the standard of living desired by these workers cannot be achieved.

Another possible explanation for the current finding may be that, previously the scheme was solely a defined benefit scheme and workers were not actively involved in determining the amount of money they will receive as pensions. However, now with the introduction of the defined contribution (second tier) where workers of a particular organization will have to come together to choose where their monies would be invested, they are taking more responsibility of determining how much they will be receiving in retirement. Also, the third tier of the pension scheme provides workers the opportunity to make additional savings, therefore putting them in a position to still decide whether to retire rich or poor. As reflected in the retirement characteristics of the individuals in this study, 91% either have or plan to own any other business that will provide them with some income during retirement. This shows the importance of the need for additional savings by the respondents. Consequently, all these preparations will not have come about if the features of the scheme were not known to these workers.
As revealed by rational choice theory people make choices in ways that are advantageous to them while at the same time reducing cost (Simon, 1978). Workers assessment of the three-tier pension scheme is likely to improve their decisions about how much to save to meet the demands of retirement thus, influencing their planning. This may have resulted because the three-tier pension scheme states the age at which an individual is expected to retire, percentages of benefits to receive in case of disability before pension and other conditions that affect workers. Such awareness put workers in a better position in deciding how much they will like to invest into their pension schemes and other investment portfolios towards their retirement that will be advantageous to them. Scott (2000) confirms that individuals are motivated by the goals that work to their advantage.

The finding of the current study is consistent with studies such as Mitchell (1988) that workers make myopic and perhaps suboptimal decisions about how much to save for retirement or when to retire if they find it difficult obtaining information about their pension schemes. This, she explained will be translated into poverty during retirement. Mercer Human Resource Consulting (2004) also show that lack of additional saving for retirement was attributed to lack of information on pension schemes. Similarly, Kelly (2006) found that those who perceive pension schemes as inadequate were likely to save in other ventures for their retirement. Fajnzylber and Reyes (2012) report that making voluntary contribution towards retirement increases when information on replacement rates and tax benefits with pensions is provided.

The result from this study implies that being abreast with the state of one’s pension scheme is likely to influence an individual’s plans toward retirement. This however, contradicts Mastrobuoni (2011) who showed that retirement planning was not affected when workers were provided with statements on their pensions indicating for instance what they will be benefiting when they retire normally, voluntary or late (Guiso et al., 2009). Cagan (1965) also
acknowledges that to prepare wisely for retirement, workers do not need to know the facts about their pension schemes.

The kind of influence that knowledge of the three-tier pension scheme has on retirement planning goes a long way in affecting the kind of accommodation retirees will like to have, the kind of leisure activities they will like to undertake, and how they are going to manage their health during retirement. Concerning accommodation, 11% of the respondents have their own houses, 97% are looking forward to live in their own houses and only 2% want to live in rented apartment. The percentage increase in the number of respondents who hope to live in their own houses could have resulted from the fact that 40% of the respondents are aware that benefits on their lump sum can be used as collateral to secure a mortgage or primary residence (see Appendix I). Therefore, knowing what lies ahead in terms of what the pension scheme is going to provide makes it easy for all these activities to be planned out well.

It could also be that in the quest to plan for retirement, respondents tried to learn about their pension scheme to have a fair idea about what to expect in the future. This is because the idea behind pension schemes is to reduce poverty during retirement and therefore one cannot avoid knowing what a pension scheme entails if he wants a better retirement plan for his future.

As the continuity theory indicates, internal and external structures help the individual to accommodate varying degrees of change without experiencing any form of crisis (Ryff & Marshall, 1999). That is, to better plan for retirement, all information concerning retirement planning must be considered by the individual during decision making. Mullainathan and Thaler (2000) argues the notion that more accurate descriptions of actual behaviour can yield better predictions of behaviour, in that, accurate information about pension schemes can increase an individual’s chances of making better decisions concerning retirement. Sixty five
percent of the respondents know the various tiers of the three-tier pension scheme with respect to which ones are mandatory or involuntary. Seventy five percent are aware that benefits are paid to beneficiaries in case a member dies before attaining the age of 60 (see Appendix I). Surprisingly, only 26% are knowledgeable about the fact that survivor’s benefit period is 15 years and 17% knowledgeable of the percentage contributions of both the employer and the employee respectively (see Appendix I).

In the use of these internal and external structures, some form of motivation is needed in order to take action. As a result, the information received on their pension schemes may ginger them in taking such actions because they are then exposed to what to expect ahead of them. Strong and positive motivation is therefore needed to overcome challenges associated with retirement planning decisions (Neukam & Hershey, 2003).

5.1.2 Gender differences in knowledge of three-tier pension scheme and retirement planning among workers.

The hypothesis two predicted that males are more likely to have better knowledge of their pension scheme and also more likely to plan better for their retirement compared to females. This hypothesis was not confirmed after an independent t-test was done.

The lack of gender differences in knowledge of the three-tier pension scheme and retirement planning could be that, formerly women did not have opinions regarding retirement planning (Francis & Busch, 1975). However, now information can be easily accessed through the internet, radio, television, mobile phone, and the media. Also, more men were educated compared to women formerly as a result of the notion that “the woman’s place is the kitchen”. However, currently, with the presence of civilisation that notion is gradually eroding and more females are being educated who are now working in male dominated fields bridging the gap between males and females in relation to acquiring knowledge and
retirement planning. This confirms Cook, Jacobs and Kim (2010) finding that individuals with better education had more knowledge about social security and plan more for their retirement. Van Raaij et al. (2011) in addition indicate that higher educational level corresponds to higher pension knowledge and retirement planning.

The current result is not consistent with studies which indicate that males have better knowledge of their pension scheme and also plan for their retirement (for instance, Chan & Stevens, 2003; van Raaij et al., 2011; Watanbe, 2009). The differences indicated in these studies could have resulted from income, age or educational level and not gender. The differences in the studies may also have occurred because of cultural factors which cause males to bear more risks than females (Gordon, Mitchell & Twinney, 1997). However, the increase in number of females in the male dominated fields may have resulted in the finding of the present study. That is, exposing females to bear risks which formerly was not so.

5.1.3 Age differences in knowledge of three-tier pension scheme and retirement planning among workers.

The hypothesis which predicted that individuals aged 40-59 years are more likely to have better knowledge of their pension scheme and also more likely to plan better for their retirement compared to those aged 30-39 and 18-29 years was supported by the findings of the study. This finding is consistent with previous studies which indicate that age differences exist in individual’s knowledge of pension schemes and retirement planning (for instance, Anderson et. al, 2000; Benitez-Silva, et. al, 2010; Kelly, 2006; Mayhew, 2003). Chan and Stevens (2003) indicate that between the ages of 55 and 65 the probability of being well informed about pension gain rises by approximately 4.5 percentage points.

The current finding could be due to cohort effect. These cohorts (that is, those age 18-29, 30-39 and 40-59) may have been exposed to different conditions of the stock market and
different rates of productivity growth as a result affecting the way each save for retirement (Börsch-Supan & Lusardi, 2002).

Another factor that may have led to the current result is income uncertainty. Income uncertainty has been shown to increase savings during the early and medium age ranges however, decreasing savings at old age (Rodepeter & Winter, 1998). Inferring from this, saving is reduced for those who have retired because their sources of income have become uncertain. Finances become more relevant to individuals closer to retirement at the same time decreased childrearing expenses and higher income makes this group have more resources financially to devote to retirement savings (Adams & Rau, 2011). This might make those closer to retirement more likely to have better plans compared to the young.

The difference may have resulted from the experiences learnt from other people especially from relatives (Waldkirch, Ng, & Cox, 2004). It can be that respondents have witnessed negative shocks from others which therefore have affected their attitude towards retirement particularly those closer to retirement. Those not very close to retirement might think they have more time to plan while those closer to retirement might feel pressured to start preparing because there is not enough time for them. Lusardi (2003b) for instance, reports that, individuals are more likely to think about retirement if they have siblings who are older. Meaning they learn from the experiences of their older siblings.

Also, compared to children whose fathers did not experience any job loss, those whose fathers were displaced from their job accumulate more wealth as adults (Shea, 2002). That is, they may have learnt from the mistakes or financial difficulties of these individuals aside getting information about retirement from them. The younger cohort who has not been exposed to such experiences may therefore not have such form of motivation start planning.
The age differences among the three groups could have been that those aged 18-29 and 30-39 years may have low life time resources and therefore save little for their retirement compared to those aged 40-59 years. They now have started working or not even have jobs compared to those closer to retirement. Further, because they save little they may accumulate little and they do not encounter high risk.

The young may also lack retirement planning because they may be expecting to receive inheritances from their parents or other relatives. The current result could also be that the younger age group may be discounting the future by thinking they have more time ahead and therefore may hesitate to get information on their pension scheme or even think of planning for retirement.

Generally, the younger respondents still want to work after they have retired. These people are more worried about not working at all after retirement since they think they will lose their identity. As a result they have not generally planned for retirement even though those age 50 years and above were more likely to discuss retirement planning with their colleagues. It is observed that as much as these older workers do not want to retire they still think about retirement which can be a basis for planning.

5.1.4 Moderating effect of age on the relationship between knowledge of the three-tier pension scheme and retirement planning.

The study investigated whether age will significantly moderate the relationship between knowledge of the three-tier pension scheme and retirement planning. The result indicates a significant positive effect of age on the relationship. This means that the older one gets the more the relationship between knowledge of the three-tier pension scheme and retirement planning is strengthened.
The moderation hypothesis was forecasted based on the premise that age according to literature has a significant positive effect on knowledge of pension schemes as well as retirement planning. Congruent with this rationale, interaction between knowledge of the three-tier pension scheme and age accounted for a (11%) variance in explaining retirement planning. This could be the reason why compared to the young, the older generation have positive attitudes towards retirement (Lim, 2003). Also, this could have resulted from the size of the sample as increases in sample size balance the residual variance of the product leading to an increase in the statistical power of the interaction (McClelland & Judd, 1993). Age alone accounted for 56% confirming the fact that large effects are normally observed at the level of main effects.

The result from this study could imply that many people delay in getting information about their pension options while there is a considerable confusion about how pensions are calculated among workers (Vickerstaff et al., 2004). An important piece of information that aids in deciding when to retire and how much to save in terms of the level of benefits of a particular pension scheme and how this varies with the choice of retirement age is also lacking among the young (Sundén, 2006). This is confirmed by Kenny (2004) that knowledge about pension schemes is found to help individuals especially the young to decide whether it is adequate for them to take the necessary action to supplement what they have.

Similar to the findings of this current study, van Raaij et al. (2011) indicates that 76% of those aged 21-35 had no knowledge of pensions schemes compared to 54% of those aged 50-65. Percentages of those who had complete pension knowledge are 6 and 18 for those aged 21-35 and 50-65 respectively. It might be inferred from the difference in the two groups that the older an individual the better his pension knowledge and vice versa. Consistent with information processing theory, incentives in pension schemes are responded to by
individuals, nevertheless, the response may be wrong if individuals possess an erroneous knowledge of the actual retirement ages in these schemes (Clark, Morrill & Allen, 2010).

Other studies also confirm that knowledge of pension schemes increases with age (e.g. Benitez-Silva et al., 2010; Raaij et al., 2011). Planning for retirement would then be a little bit easier because the individual knows what to expect from their pension contributions. Retirement planning was however been found to be delayed by people in their middle age (Cobb-Clark & Stillman, 2006). In contrast to these findings, the MetLife Mature Institute (2005) reported that as much as those aged 50 years and above look forward to social security as their primary source of income, the younger cohort between the ages of 41 to 49 are planning more for their retirement.

According to the principle of discounting, there is some kind of trade off in many of the choices we make between the present and future. For instance we can choose to start planning our retirement now or wait till the last year to retirement. Conversely, those who start planning early can sustain themselves during retirement. However, studies show that people tend to prefer rewards now and losses later (Klaproth, 2008; Lynch & Zauberman, 2006). This means to delay immediate gratification, something extra must be provided in return even though older individuals and those close to retirement have a lot or some thought about retirement (Mayhew, 2003).

Some individuals may not be saving because they are unemployed and do not have the means to save. As a result, those close to retirement may be seem to be planning better for their retirement, because they are working and have the means to save. Compared to the youth who are struggling to get jobs to do, retirement planning may be less of their concerns since their focus may be on getting a job before all other things. Aside this, as soon as they get jobs, their next plan may be to marry and start a family while those closer to retirement may
have no children to take care of making them less stressful in thinking about their retirement. Such people can then get the luxury of time in reading about their pension scheme therefore having more knowledge about their pension scheme compared to the young. This is evident in Anderson, Li, Bechhofer, Mccrone and Stewart (2000), finding that, those more likely to give less thought to retirement or feel less prepared financially for retirement are those with the least material and resources.

**5.1.5 Moderating effect of educational level on the relationship between knowledge of the three-tier pension scheme and retirement planning.**

The third hypothesis investigated whether educational level will significantly moderate the relationship between knowledge of the three-tier pension scheme and retirement planning. The result indicates that the effect of educational level on the relationship between knowledge of the three-tier pension scheme and retirement planning was significant. This means educational level strengthens the relationship between knowledge of the three-tier pension scheme and retirement planning accounting for (14%) variance in retirement planning. However, educational level is not significantly correlated to any of the two variables (that is, knowledge of the three-tier pension scheme and retirement planning).

The significant moderating effect is not consistent with previous works that demonstrated significant main effects of educational level on retirement planning and knowledge of pension schemes. For instance, Lusardi and Beeler (2006) reported that those who do not plan are those with less than a high school education. Ameriks et al. (2003) found a strong correlation between retirement planning and education. Similarly, Morthy et al. (2012) showed that education and income level were significant predictors of retirement planning. Also, Annexes (2006) indicated that those who are likely to under-save are those without degrees. Further, other studies have found that individuals with better education had more pension scheme knowledge and also plan better for their retirement (Skog, 2006; Cook et al.,
Felix (2012) also shows that individuals with higher levels of education and pension scheme knowledge are more likely to make active investment choices. However, in the present study only about 30% of the respondents were aware that survivors’ benefit period have been increased from 12 to 15 years (see Appendix I).

The relationship between educational level and retirement planning which was not significant could be as a result of the connection individuals future lifestyle have with their past experience as indicated by the continuity theory (Atchley, 1989). That is, despite the level of education, present lifestyle is maintained during retirement (Atchley, 1989). Individuals therefore plan their retirement in spite of their level of education envisaging the kind of retirement lifestyle they would like to enjoy.

The relationship which was not significant could also have come about because individuals are rational beings and therefore take decisions that will work to their benefit. When faced with an obstacle or problem, the individual evaluates the nature of the obstacle or problem to be able to take the best decision. Similarly, learning from the challenges people face during retirement in relation to the monthly pensions they receive could have influenced individual’s retirement planning but not necessarily their educational level. Self control and temptation could be reasons educational level was not significant in predicting retirement planning. This is because tension exists between the most desirable consumption plan and the feasible consumption plan to follow (Laibson, 1997). Consequently, the most rational person battles with the temptation of making a decision for the future which may not be as a result of level of education (Gul & Pesendorfer, 2001).

Educational level relates to neither the independent variable (knowledge of the three-tier pension scheme) nor the dependent variables (retirement planning) but only interacts with the
independent variable, it can therefore be referred to as a ‘pure moderator’ (Sharma, Durand & Gur-Arie, 1981:292). Meaning it modifies the form of the relationship.

5.1.6 Moderating effect of income level on the relationship between knowledge of the three-tier pension scheme and retirement planning.

Additionally, the study sought to examine if income would moderate the relationship between knowledge of the three-tier pension scheme and retirement planning. Consistent with the prediction, the results from the study indicate that income level moderates the relationship between knowledge of the three-tier pension scheme and retirement planning. This implies that the relationship between knowledge of the three-tier pension scheme and retirement planning is influenced by the income level of the worker. That is, income level was found to strengthen positively the relationship between knowledge of the three-tier pension scheme and retirement planning accounting for 15% of the variance in retirement planning.

The moderation effect can be attributed to the inadequate saving among low and middle income earners as a result of their lack of sufficient income to afford saving (Bell et al., 2005; Larsson & Paulsson, 2010). The reason can also be attributed to the fact that low and middle income earners who make up the majority of workers lack basic knowledge to save and invest wisely (Bell & Lerman, 2005). As much as knowledge of pension schemes has been found to also influence pension savings, the lack of it can affect a worker’s ability to make sufficient retirement planning (Clark & Strauss, 2008; Mayhew, 2003). In the same way retirement planning improves with increasing levels of income (Deaton, 2005).

This current result is similar to studies that have reported significant relationships between income level, knowledge of pension schemes and retirement planning. For instance, compared to lower income earners, higher income earners are better informed about their
pension schemes (Cook et al., 2010). Mayhew (2003) also indicates that higher income and knowledge of pension schemes make it possible for individuals to know their retirement income. This confirms the argument by Rohwedder and van Soest (2006) that saving for retirement to a large extent depends on the amount of retirement income one is likely to receive from social security. Income level further explains about half of the variance in terms of saving therefore underlying the motivation to save (Stawski et al., 2007). Another study by Lusardi and Mitchell (2008) also confirms that lower-income earners are less likely to engage in retirement savings compared to higher income earners. Hesketh and Griffin (2010) also found that compared to those who engage in little planning, those with higher income actively engage in retirement planning. VanDerhei and Copeland (2010) have also shown that individuals at the highest risk of running short of money in retirement are those with the lowest income. This is because they do not usually plan their retirement resulting from the lack of resources to do so.

Evidence exists that consumption is not smoothed out (stable) over the life course but rather consumption follows the resources at one’s disposal (Carroll & Summers, 1991). Spending pattern therefore increases with an increase in income and decrease with less income. This confirms Homans (1961) statement that human behaviour is not free but determined. Aaron (1999) also confirms that people make optimal spending and saving decisions for both their present and future needs based on all resources available to them at a given time. In contrast, Schor (1998) states that not everybody values saving for retirement. For instance, some people may not be saving for retirement but to leave an inheritance for their loved ones (Goetting, Martin, & Johnson, 2000; Smith, 1997). Deaton (2005) also indicates that individuals make provision for their retirement and needs at different ages, independently of their incomes at each age.
Other studies have also shown that it is planning that rather determines the wealth of an individual, in that, those who plan retire with much wealth compared to those who do not plan (e.g. Lusardi, 1999, 2002, 2003). This is because those who plan may be informed better about asset returns and income prospects in the future. As a result, low knowledge of future stock returns is linked to low stock holding and low returns on investments (Lillard & Willis, 2001). In the case of the three-tier pension scheme those who are ignorant about the voluntary third-tier provision may refrain from investing into it. All the above explanations form the basis for the significant moderation effect of income on the relationship between knowledge of the three-tier pension scheme and retirement planning.

5.1.7 Moderating effect of financial literacy on the relationship between knowledge of the three-tier pension scheme and retirement planning.

Using the multiple regression analysis, financial literacy significantly moderated the relationship between knowledge of the three-tier pension scheme and retirement planning. This result indicates that with the presence of financial literacy the relationship between knowledge of the three-tier pension scheme and retirement planning is strengthened accounting for (9%) variance in retirement planning.

This significant moderation effect can be attributed to the direct relationship between financial literacy and retirement planning as revealed in studies by van Rooij, Lusardi and Alessie (2011), Bucher-Koenen and Lusardi (2010), Klapper and Panos (2011). This is because those who are financially literate are capable of calculating simple mathematics like simple interest which is normally used by pension operators in calculating pensions. They are therefore knowledgeable about the estimated monthly pensions they are likely to receive based on their current salary which are most often very scanty. They are also likely to put measures in place to avert any unexpected financial crises as indicated in the rational choice theory. Consequently, financial literacy promotes financial behaviour which improves
savings (Capuano & Ramsay, 2011). As confirmed by Felix (2012) there is a positive and significant effect on the probability of making investment decisions as a result of financial literacy and knowledge of pensions.

The result can also be attributed to the strong positive influence of knowledge of pension scheme on retirement planning. The knowledge of the pension system may have helped to avert any in-efficiencies that contributors to the scheme are likely to face while plans are made with that in mind. The current study shows that 37% of the respondents are aware that benefits of the 2\textsuperscript{nd} tier of the three-tier pension scheme can be transferred to another account during change of employment (see Appendix I).

Additionally, financial literacy is related to variables in the study such as age and income level which are also related to retirement planning. This means that financial literacy may increase with age and vice versa. Similarly, increases in income level could make an individual plan for retirement if he is financially literate. That is, he would be able to manage his finances well by making investments in high interest earning ventures as a result of his understanding of the stock market. Financial literacy is therefore a variable that cannot be overlooked in the retirement planning process because wrongly perceived pension information may possibly lead to incorrect decision making as people are likely to act on them (Chan & Stevens, 2008). This explains why those who are financially literate and at the same time knowledgeable about their pension scheme are likely to have better plans for their retirement. As posited by the rational choice theory, individuals who are financially literate will have the advantage of being able to assess the returns they are likely to receive from their pension scheme. For this reason, they are able to identify the inefficiencies as well as opportunities in the system which may have formed the basis for their planning.
5.2 Limitations of the study

Some few challenges were encountered during the research period. The major challenge was with data collection. Data collection was delayed as most organizations contacted failed at the long run to give consent due to protocol. Also, respondents delayed in filling out the questionnaire. Another limitation is that, the study was limited to only the formal sector thus, the views of workers in the informal sector were not accessed although presently a provision has been made for them to also make contributions into the pension scheme. As a result, the generalization of the study outcomes is somewhat limited. Furthermore, the cross-section design employed in the study makes it difficult to draw strong cause-effect conclusions because the data was collected at one point in time and therefore gives no indication of the sequence of events (Levin, 2006).

5.3 Recommendations

Based on the findings from this study the following recommendations categorised into Government, Retirement Consultants, Employers, Employees and Future Research are made.

Government

The present study found that knowledge of the three-tier pension scheme has significant influence on retirement planning. The results from this study have practical implications for the government. That is, the government must come out with policies to make education of employees on the pension scheme mandatory for all employers because the education done by the National Pension Regulatory Authority is insufficient to reach all employees of the country. As such, employees would be more motivated to plan for their retirement if employers are charged to educate their employees on the pension scheme. There should also be a time frame within which the education should be started. This should be as early as possible in the employees’ life because age was found to strengthen the relationship between knowledge of the three-tier pension scheme and retirement planning. Finally, the government
who is a major stakeholder in the welfare of workers should make sure that companies registered by the National Pensions Regulatory Authority meet the necessary statutory requirement to guarantee the safety of the second tier contribution.

Employers

Realizing that knowledge of pension schemes influences how a person plans for retirement, at the organizational level, employers should organize workshops and seminars to educate their employees on their pension schemes early enough. Accordingly, the prospects and challenges associated with the system will be revealed to help employees make informed decisions. This can serve as a form of motivation to the workers realizing employers have their welfare at heart. Employers can also indicate the retirement date of their workers in their appointment letters to inform them that they will not be working for life and must therefore plan towards that retirement.

Employees

Employees should make it a point to seek for information on their pension scheme to avert any future surprises when they finally retire. They should also endeavour to increase their financial literacy. This knowledge can be acquired if employees make conscious effort to read materials, attend seminars or surf the internet for information on the subject. With these resources, they can take advantage of the provisions in the scheme like making additional contributions, using pension benefit for mortgage, enjoying tax exemptions and making sure their contributions (e.g. the 5% lump sum of the three-tier pension scheme in Ghana) are invested in high yielding investment portfolios. Considering the effect of age, they should start planning as early as possible to increase their retirement savings and options.
This study shows that financial literacy and income strengthens the relationship between knowledge of the three-tier pension scheme and retirement planning. Consequently, employees should seek some form of financial education to enable them to manage their income effectively. Being financially literate may lead to better planning despite the amount of income received by individuals. Financial literacy may inform an employee on how money they can possibly receive as monthly pensions based on their monthly contributions. For that reason, they can start making plans for retirement because they would like to maintain the kind of lifestyle they enjoy now as stated by the continuity theory or even wish for a better one.

**Retirement Consultants**

The current study reveals that knowledge of the three-tier pension scheme is significantly related to the four components of retirement planning (that is, financial preparation, accommodation, health and leisure). This means that one’s knowledge of pension schemes will determine whether they will plan better in terms of these four components. Hence, Retirement Consultants should highlight the importance of acquiring knowledge of pensions to their clients by helping them to understand what their scheme entails and how it is going to affect them in the future. They should therefore not only be interested in making their clients feel safe by only informing them on the positives but also the risks involved in the features of a particular pension scheme. This will go a long way in improving upon the retirement plans of their clients as indicated in the current study. As a result, children and relative of retirees would be less burdened or completely relieved of the responsibility of taking care of them.

**Future Research**

Finally, future studies should explore other equally important variables that could influence the relationship between knowledge of pension scheme and retirement planning such as
personality type. This could be done using larger samples to see whether the variance that would be attributed by the variable would be large enough. As concluded by McClelland and Judd (1993) unless researchers oversample, the detections of moderation effect would even be difficult.

Since the informal sector make up the majority of the Ghanaian working force, future researchers should investigate their knowledge of the three-tier pension scheme so that efficient polices can be made to their benefit.

5.4 Summary and Conclusion

Policy makers around the world have advocated for increased expenditure on education of workers on their pension schemes with hopes of increasing savings and improve retirement planning. Their aim to reduce poverty, increase financial stability and finally to improve the welfare of individuals is shared by the researcher. This study as a result, investigated the influence of knowledge of the three-tier pension scheme on retirement planning as well as the moderating effects of financial literacy, educational level, income level and age on the relationship. Gender and age differences in relation to knowledge of the three-tier pension scheme and retirement planning were also investigated. The result shows that, knowledge of the three-tier pension scheme relate to retirement planning. Also, significant age differences were found among respondents in relation to their knowledge of pension scheme and retirement planning. Variables such as financial literacy, educational level, income level and age were found to have significant moderation effects on this relationship. There was however no gender differences among the respondents.

These findings imply that, for workers to better plan for retirement they must possess adequate knowledge of their pension scheme. They also need not to underplay the importance of age, education, income and financial literacy when planning. The study elucidates the
importance of pension scheme knowledge on retirement planning. It is therefore vital that organisations poise themselves to organize periodic retirement planning seminars during which features of the pension scheme must be treated into detail to keep workers in tune with how retirement is going to be. Pension schemes are continually changing from defined benefits to defined contribution or a combination of the two. This makes it pertinent that workers are educated on how the current system works to prevent any unforeseen expectation that can negatively affect the worker. It has become necessary for both organisations and workers to be actively engaged in acquiring knowledge of pension schemes.

This study contributes to the knowledge of pension schemes literature, an area which is understudied by examining its association with retirement planning. The study has come handy now that the responsibility of managing retirement welfare is mostly left in the hands of the individual. The lack of knowledge about pension schemes will therefore go a long way in affecting retirement planning as revealed by the study. Individuals are therefore encouraged to be well informed on the features of their pension schemes. This will enable them to take advantage of the system to avert being burdens on their relatives during retirement.
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APPENDICES

APPENDIX A

NOGUCHI MEMORIAL INSTITUTE FOR MEDICAL RESEARCH
Established 1979

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E-mail: nirb@noguchi.mimcom.org
Telex No: 2556 UGL GH

INSTITUTIONAL REVIEW BOARD

Post Office Box LG 581
Legon, Accra
Ghana

8th May, 2013

ETHICAL CLEARANCE

FEDERALWIDE ASSURANCE FWA 00001824
NMIMR-IRB CPN 097/12-13
IRB 00001276
IORG 0000908

On 8th May, 2013, the Noguchi Memorial Institute for Medical Research (NMIMR) Institutional Review Board (IRB) at a full board meeting reviewed and approved your protocol titled:

TITLE OF PROTOCOL: Knowledge of the three-tier pension scheme and its influence on retirement planning among selected organizations in Ghana

PRINCIPAL INVESTIGATOR: Mary Ayi-Bonte, MPhil Candidate

Please note that a final review report must be submitted to the Board at the completion of the study. Your research records may be audited at any time during or after the implementation.

Any modification of this research project must be submitted to the IRB for review and approval prior to implementation.

Please report all serious adverse events related to this study to NMIMR-IRB within seven days verbally and fourteen days in writing.

This certificate is valid till 7th May, 2014. You are to submit annual reports for continuing review.

Signature of Chairman: ____________________________
Rev. Dr. Samuel Ayete-Nyampong
(NMIMR – IRB, Chairman)

cc: Professor Kwadwo Koram
Director, Noguchi Memorial Institute
for Medical Research, University of Ghana, Legon
APPENDIX B

Consent Form

CONSENT FORM

Title: “Knowledge of the three-tier pension scheme and its influence on retirement planning among selected organizations in Ghana”

Principal Investigator: Mary Ayi-Bonte

Principal Supervisor: Dr. Robert Akumoa-Boateng,
Department of Psychology, University of Ghana, Legon

General information about the research

Retirement planning is something that is unpopular in Ghana because workers believe during retirement they will be taken care of by their children or family members who they have catered for whiles working. This is often not the case as the once collective Ghanaian culture is becoming more individualistic making people concentrate more on their immediate family. For an efficient retirement planning to occur, Ghanaians need an all-round knowledge about pensions and other forms of saving which will involve that of the current three-tier pension scheme and how it functions. The aim of this research is therefore to investigate workers knowledge of the three-tier pension scheme and how it influences their retirement planning. Finding whether a relationship exists between the two will help put measures in place to reduce the fear and poverty associated with retirement. Your task will be to fill out the questionnaire given to you. This will take about 15 to 20 minutes of your time.

Possible Risks and Discomforts

Since the research is taking place during working hours it might create some inconvenience for you. You are therefore allowed to fill the questionnaire at your own convenient time. Also, the number of questions you are to answer may cause some form of fatigue. You can reduce this fatigue by taking intermittent breaks which is allowed.

Possible Benefits

The research may not benefit you directly, however, your participation will help to gather information concerning how knowledgeable workers are about the three-tier pension scheme and how this knowledge or the lack of it affects their retirement planning. It will also help inform the National Pensions Regulatory Authority on the level of knowledge about the scheme which will help them to either take measures to improve or change their awareness strategy.

Confidentiality

The information you will provide would be used for research purposes only and the results will not be connected to you in any way. You are not required to provide your name or that of your organization on any of the questionnaires.
Compensation
You are allowed to keep pens given to you to fill the questionnaire as a token for your participation.

Voluntary Participation and Right to Leave the Research
Your Participation in this research is completely voluntary. You have the right to decide not to respond. You may change your mind at any time and withdraw from the study. You may also choose not to answer specific questions or to stop participating at any time.

Contacts for Additional Information
In case of any doubt or and for additional information concerning the study you may contact the Principal Investigator; Mary Ayi-Bonte University of Ghana, Legon Telephone: 0246621609 or email address: maybonte@hotmail.com

Your rights as a Participant
This research has been reviewed and approved by the Institutional Review Board of Noguchi Memorial Institute for Medical Research (NMIMR-IRB). If you have any questions about your rights as a research participant you can contact the IRB Office between the hours of 8am-5pm through the landline 0302916438 or email addresses: nirb@noguchi.mimcom.org or hbaido@noguchi.mimcom.org.
APPENDIX B continued

VOLUNTEER AGREEMENT

The above document describing the benefits and procedures for the research title (Knowledge of the three-tier pension scheme and its influence on retirement planning among selected organizations in Ghana) has been read and explained to me. I have been given an opportunity to ask any question(s) about the research which have been answered to my satisfaction. I agree to participate as a volunteer.

____________________________  ______________________________
Date  Name and signature or mark of volunteer

If volunteers cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

____________________________  ______________________________
Date  Name and signature of witness

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

____________________________  ______________________________
Date  Name and Signature of Person Who Obtained Consent

VALID UNTIL 07-MAY-2014

APPROVED DOCUMENT

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APPENDIX C

QUESTIONNAIRE

Dear Sir/Madam,

I am an M.Phil student at the University of Ghana, Legon. I am investigating 'KNOWLEDGE OF THE THREE-TIER PENSION SCHEME AND ITS INFLUENCE ON RETIREMENT PLANNING'. I will be very glad if you could spend a few minutes of your time to answer this questionnaire. The result of this study will help to know whether it is important for employees to learn about their pension schemes and how that can make them secure their future through retirement planning. The responses you give will be treated with utmost confidentiality and the result will be used for academic purposes only. Thank you for participating and write your answers as sincerely as possible.

SECTION A

Please provide the following information about you by ticking where appropriate.

1. Sex: Male ☐ Female ☐
3. Marital Status: Single ☐ Married ☐ Divorced ☐ Widowed ☐
4. Highest level of education attained: Doctorate ☐ Masters Degree ☐ First Degree ☐
   GCE 'A' Level ☐ GCE 'O' Level ☐ Others (please specify) ........................................
5. Monthly Income: Below Gh¢100 ☐ Gh¢101-300 ☐ Gh¢301-500 ☐
   Gh¢501-700 ☐ Gh¢701-900 ☐ Gh¢901-1,100 ☐ Gh¢1,101-1,300 ☐
   Above Gh¢1,300 ☐
6. Position in Organization: .................................................................
7. How many years have you been in employment in the present organization: ...........

SECTION B

This section measures what you know about the Three-tier Pension Scheme. Please read carefully, tick where appropriate and give the necessary response where required.

8. Do you know about the Three-Tier Pension Scheme? Yes [ ] No [ ]
9. How did you know about this scheme?
   Through my organization [ ] Through Radio Advertisement [ ] Through Television
   Advertisement [ ] Through the print media [ ] Friends/colleagues [ ]
   Any other (please specify) .................................................................

VALID UNTIL
07 MAY 2014

116
APPENDIX C continued

Based on the knowledge acquired on this three-tier pension scheme, I would like you to tell me whether the statements about this scheme are either TRUE/FALSE. PLEASE MARK (X) UNDER THE APPROPRIATE COLUMN

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>True</th>
<th>False</th>
<th>Don't Know</th>
</tr>
</thead>
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<tr>
<td>10</td>
<td>The scheme is made up of three tiers, of which the 1st and 2nd tiers are mandatory and the 3rd tier is a voluntary provident fund/personal pension (for both the formal and informal sector).</td>
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<tr>
<td>11</td>
<td>The worker contributes 5% of basic salary while the employer contributes 13.5% on behalf of worker, totalling 18.5%.</td>
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<tr>
<td>12</td>
<td>SSNIT manages 13.5% of the total contribution</td>
<td></td>
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<tr>
<td>13</td>
<td>The age at which an individual qualifies to contribute to the scheme is between 25 and 60 years.</td>
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<tr>
<td>14</td>
<td>Minimum contribution period is 180 months or 15 years in aggregate.</td>
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<tr>
<td>15</td>
<td>A member who retires before the minimum contribution period he receives his total contribution plus interest the accrued.</td>
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<td></td>
</tr>
<tr>
<td>16</td>
<td>When a member dies before 60 years his benefits is paid to his beneficiaries.</td>
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</tr>
<tr>
<td>17</td>
<td>Survivor’s benefits period is for 15 years.</td>
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</tr>
<tr>
<td>18</td>
<td>Accrued benefits on the 2nd tier can be preserved or transferred to another account during change of employment.</td>
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<tr>
<td>19</td>
<td>Lump sum benefit can be used as collateral to secure mortgage or primary residence.</td>
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<tr>
<td>20</td>
<td>Survivors benefits period has been increased from 12 years in the old scheme to 15 years in the new scheme</td>
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</tbody>
</table>

21. How has this knowledge influenced your retirement planning?
   - A lot [ ] Somewhat [ ] Not at all [ ] Don’t know [ ]

SECTION C

Based on the knowledge you have acquired on the Three-tier Pension Scheme, please read carefully and tick where appropriate the preparation you have made or planning to make towards your retirement.

Which of these Pension Schemes do you belong to? TICK ONE ANSWER

- Social Security [ ]
- Ghana Government Civil Service Pension Plan (CAP 30) [ ]
- The Three-Tier Pension Scheme [ ]
APPENDIX C continued

22. Do you think that your pension will be enough to take care of you and your dependents during retirement? Yes [ ] No [ ]

23. What do you think your monthly pension will be?  .........................................................

24. Are you investing money towards your retirement? Yes [ ] No [ ] Not yet [ ]

25. If yes, what is the nature of your investment?
    Treasury bill [ ] Savings Account [ ] Any other (please specify).................................

26. Do you have or planning to own any other business that will provide you with some income during your retirement? Yes [ ] No [ ]

27. If yes, what is the nature of the business? A farm [ ] A store [ ] Livestock [ ]
    other (please specify).................. Not decided yet [ ]

28. On the scale below indicate how financially prepared you are now for retirement or financially preparing for retirement?
    Not preparing at all [ ] Preparing [ ] Somehow preparing [ ] Quite prepared [ ]
    Prepared [ ] Fully prepared [ ] Don’t know [ ]

ACCOMODATION

29. Do you have a house of your own? Yes [ ] No [ ]

30. Where will you live or plan to live during retirement?
    In my own house [ ] In a rented house [ ] In my family house [ ]
    Any other (please specify)................................. Don’t know [ ]

31. Where do you live now?
    In my own house [ ] In a rented house [ ] In my family house [ ]
    Any other (please specify)...........................................................

32. Are you building a house? Yes [ ] No [ ] Already have [ ]

33. If yes, can you complete it before you retire? Yes [ ] No [ ]

34. On the scale below, indicate how prepared are you for your accommodation in retirement or preparing for your accommodation in retirement?
    Not preparing at all [ ] Preparing [ ] Somehow preparing [ ] Don’t know [ ]
    Quite prepared [ ] Prepared [ ] Fully prepared [ ]

HEALTH

35. Does your company pay your hospital expenses? Yes [ ] No [ ]

36. Does it cover your family too? Yes [ ] No [ ]

37. If yes, will this continue after retiring from the company? Yes [ ] No [ ]
APPENDIX C continued

38. Do you have a health insurance? Yes [ ] No [ ]

39. If no, how do you intend to pay for your health bill during retirement?
   From my own resources [ ] My children [ ] Other relatives [ ]

40. How do you hope to live?.............................................................................................

41. On the scale below, indicate how prepared are you for your health in retirement or
   preparing for your health in retirement?
   Not preparing at all [ ] Preparing [ ] Somehow preparing [ ] Don’t know [ ]
   Quite prepared[ ] Prepared [ ] Fully prepared [ ]

LEISURE

42. Do you have any hobbies or interest? Yes [ ] No [ ]

43. If you have a hobby what is it?
   Reading [ ] Gardening [ ] Lotto [ ] TV watching [ ]
   Others (please specify)...........................................................

44. Will you continue with your hobbies during retirement? Yes [ ] No [ ]

45. How will you spend or intend to spend your free time during retirement?
   Get employment [ ] Stay at home [ ] Visit friends [ ] Do voluntary work [ ] Look
   after my grand children [ ] Do my own business [ ] Do not know yet [ ]

46. On the scale below, indicate how prepared are you for your leisure in retirement or
   preparing to use your free time in retirement.
   Not preparing at all [ ] Preparing [ ] Somehow preparing [ ] Don’t know [ ]
   Quite prepared [ ] Prepared [ ] Fully prepared [ ]

SECTION D

This section measures your knowledge on financial matters. Please read through carefully
and TICK the correct answer.

47. Imagine that the interest rate on your savings account was 1% per year and inflation
   was 2% per year. After 1 year, how much would you be able to buy with the money in
   this account?
   More than today [ ] Exactly the same [ ] Less than today [ ] Don’t know [ ]
   Prefer not to say [ ]
48. Do you think the following statement is true or false? “Buying a single company stock usually provides a safer return than a stock mutual fund.”

True [ ] False [ ] Don’t know [ ] Prefer not to say [ ]

49. Suppose you had GH¢100 in a savings account and the interest rate was 2% per year.
After 5 years, how much do you think you would have in the account if you left the money to grow?

More than GH¢102 [ ] Exactly GH¢102 [ ] Less than GH¢102 [ ]
Don’t know [ ] Prefer not to say [ ]

50. If interest rates rise, what will typically happen to bond prices?

They will rise [ ] They will fall [ ] They will stay the same [ ]
There is no relationship between bond prices and the interest rate [ ]
Don’t know [ ] Prefer not to say [ ]

51. Do you think the following statement is true or false? “A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.”

True [ ] False [ ] Don’t know [ ] Prefer not to say [ ]

52. Let’s say you have GH¢200 in a savings account. The account earns 10 percent interest per year. How much would you have in the account at the end of two years?
(TABLE 4.3) – CORRELATION OF DEMOGRAPHIC AND MAIN VARIABLES

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**Correlation is significant at the 0.01 level (1-tailed).**
APPENDIX D continued

(TABLE 4.8) HIERARCHICAL MULTIPLE REGRESSION ON THE MODERATION EFFECT OF AGE ON KTTPS AND RETIREMENT PLANNING RELATIONSHIP.

<table>
<thead>
<tr>
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<th>Sig.</th>
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<th>Collinearity Statistics</th>
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<td>Age*KTTPS</td>
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<td>.110</td>
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a. Dependent Variable: Retirement Planning

(TABLE 4.9) HIERARCHICAL MULTIPLE REGRESSION ON THE MODERATION EFFECT OF EDUCATIONAL LEVEL ON KTTPS AND RETIREMENT PLANNING RELATIONSHIP

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<th>Model</th>
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<th>Sig.</th>
<th>95.0% Confidence Interval for B</th>
<th>Collinearity Statistics</th>
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<td>.632</td>
<td>.066</td>
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<td></td>
<td>EDU*KTTPS</td>
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<td>.268</td>
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a. Dependent Variable: Retirement Planning
# APPENDIX D continued

## (TABLE 4.10) HIERARCHICAL MULTIPLE REGRESSION ON THE MODERATION EFFECT OF INCOME LEVEL ON KTTPS AND RETIREMENT PLANNING RELATIONSHIP

<table>
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<th>Sig.</th>
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<th>Collinearity Statistics</th>
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<td>(Constant)</td>
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<td>.000</td>
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<td></td>
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<td>.517</td>
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<td>.000</td>
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<td></td>
<td>(Constant)</td>
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<td>4.816</td>
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<td>.461</td>
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<td>.000</td>
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<tr>
<td></td>
<td>Income</td>
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<td>.444</td>
<td>.193</td>
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<td>.004</td>
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<td>.152</td>
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<td>.015</td>
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*a. Dependent Variable: Retirement Planning

## (TABLE 4.11) HIERARCHICAL MULTIPLE REGRESSION ON THE MODERATION EFFECT OF FINANCIAL LITERACY ON KTTPS AND RETIREMENT PLANNING RELATIONSHIP

<table>
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<th>Sig.</th>
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<td>Beta</td>
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<td>Upper Bound</td>
</tr>
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<td>(Constant)</td>
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<td>.516</td>
<td>14.618</td>
<td>.000</td>
<td>6.529</td>
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<tr>
<td></td>
<td>KTTPS</td>
<td>.805</td>
<td>.096</td>
<td>.517</td>
<td>8.407</td>
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<td></td>
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APPENDIX E

(TABLE 4.8) MODEL SUMMARY FOR HIERARCHICAL MULTIPLE REGRESSION ON THE MODERATION EFFECT OF AGE ON KTTPS AND RETIREMENT PLANNING RELATIONSHIP

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<th>Model</th>
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<th>Change Statistics</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
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<tbody>
<tr>
<td>1</td>
<td>.517</td>
<td>.267</td>
<td>.263</td>
<td>3.970</td>
<td>.267</td>
<td>70.671</td>
<td>1</td>
<td>194</td>
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<td>.450</td>
<td>.444</td>
<td>3.450</td>
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<td>.000</td>
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<td>3</td>
<td>.679</td>
<td>.461</td>
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<td>192</td>
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<td>.042</td>
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a. Predictors: (Constant), Knowledge Score
b. Predictors: (Constant), Knowledge Score, Age
c. Predictors: (Constant), Knowledge Score, Age, Age Interacting Knowledge Score

(TABLE 4.9) MODEL SUMMARY FOR HIERARCHICAL MULTIPLE REGRESSION ON THE MODERATION EFFECT OF EDUCATIONAL LEVEL ON KTTPS AND RETIREMENT PLANNING RELATIONSHIP

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<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
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<td>1</td>
<td>.517</td>
<td>.267</td>
<td>.263</td>
<td>3.970</td>
<td>.267</td>
<td>70.671</td>
<td>1</td>
<td>194</td>
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<td>.000</td>
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<td>2</td>
<td>.520</td>
<td>.271</td>
<td>.263</td>
<td>3.970</td>
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<td>1.000</td>
<td>1</td>
<td>193</td>
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a. Predictors: (Constant), Knowledge Score
b. Predictors: (Constant), Knowledge Score, Educational Level
c. Predictors: (Constant), Knowledge Score, Educational Level, Educational Level Interacting Knowledge Score
APPENDIX E continued

(TABLE 4.10) MODEL SUMMARY FOR HIERARCHICAL MULTIPLE REGRESSION ON THE MODERATION EFFECT OF INCOME LEVEL ON KTTPS AND RETIREMENT PLANNING RELATIONSHIP

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<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
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<td>.263</td>
<td>3.970</td>
<td>.267</td>
<td>70.671</td>
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<tr>
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<td>.281</td>
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<td>.021</td>
<td>5.691</td>
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<td>3.873</td>
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a. Predictors: (Constant), Knowledge Score
b. Predictors: (Constant), Knowledge Score, Income
c. Predictors: (Constant), Knowledge Score, Income, income interacting Knowledge Score

(TABLE 4.11) MODEL SUMMARY FOR HIERARCHICAL MULTIPLE REGRESSION ON THE MODERATION EFFECT OF FINANCIAL LITERACY ON KTTPS AND RETIREMENT PLANNING RELATIONSHIP

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<thead>
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<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
<th>Sig. F Change</th>
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<td>.267</td>
<td>.263</td>
<td>3.970</td>
<td>.267</td>
<td>70.671</td>
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<td>.683</td>
<td>2.606</td>
<td>.009</td>
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a. Predictors: (Constant), Knowledge Score
b. Predictors: (Constant), Knowledge Score, Financial Literacy
c. Predictors: (Constant), Knowledge Score, Financial Literacy, Financial Literacy Interacting Knowledge score
APPENDIX F

MEANS, STANDARD DEVIATION, SKWENESS AND KURTOSIS (TRANSFORMED DATA)

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<th>Statistics</th>
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<th>Income</th>
<th>FL</th>
<th>KTTPS</th>
<th>RP</th>
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<td>196</td>
<td>196</td>
<td>196</td>
<td>196</td>
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<td>0</td>
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<td>0</td>
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<td>1.2704</td>
<td>2.2194</td>
<td>2.31</td>
<td>4.51</td>
<td>11.17</td>
</tr>
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<td>.44531</td>
<td>.68525</td>
<td>1.467</td>
<td>2.969</td>
<td>4.626</td>
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<td>-.311</td>
<td>.264</td>
<td>-.122</td>
<td>.894</td>
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<td>-.862</td>
<td>-.576</td>
<td>-.992</td>
<td>.352</td>
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<td>.346</td>
<td>.346</td>
<td>.346</td>
<td>.346</td>
<td>.346</td>
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</table>
APPENDIX G

NORMAL CURVE DISTRIBUTION OF VARIABLES
APPENDIX G continued

In the first graph, the Income distribution is shown with a mean of 2.32, a standard deviation of 0.805, and a sample size of N = 196.

The second graph represents FL with a mean of 2.31, a standard deviation of 1.457, and a sample size of N = 196.
APPENDIX G continued

![Graph of KTTPS](image1)

- Mean = 4.51
- Std. Dev. = 2.086
- N = 196

![Graph of RP](image2)

- Mean = 11.17
- Std. Dev. = 4.026
- N = 196
Appendix H
Factor analysis for the knowledge of the three-tier pension scheme scale

Scree Plot
Appendix I

Percentage scores of the individual items of workers’ knowledge of the three-tier pension scheme

<table>
<thead>
<tr>
<th>Item</th>
<th>Scores</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>The worker contributes 5% of basic salary while the employer contributes 13.5% on behalf of the worker, totalling 18.5%.</td>
<td>0</td>
<td>163</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>33</td>
<td>17</td>
</tr>
<tr>
<td>SSNIT manages 13.5% of the total contribution.</td>
<td>0</td>
<td>102</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>95</td>
<td>48</td>
</tr>
<tr>
<td>The age at which an individual qualifies to contribute to the scheme is between 25 and 60 years.</td>
<td>0</td>
<td>127</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>69</td>
<td>35</td>
</tr>
<tr>
<td>Minimum contribution period is 180 months or 15 years in aggregate.</td>
<td>0</td>
<td>116</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>80</td>
<td>41</td>
</tr>
<tr>
<td>A member who retires before the minimum contribution period receives his total contribution plus interest accrued.</td>
<td>0</td>
<td>125</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>75</td>
<td>36</td>
</tr>
<tr>
<td>When a member dies before 60 years his benefits is paid to his beneficiaries.</td>
<td>0</td>
<td>49</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>147</td>
<td>75</td>
</tr>
<tr>
<td>Survivor's benefits period is for 15 years.</td>
<td>0</td>
<td>145</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>51</td>
<td>26</td>
</tr>
<tr>
<td>Accrued benefits on the 2nd tier can be preserved or transferred to another account during change of employment.</td>
<td>0</td>
<td>123</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>73</td>
<td>37</td>
</tr>
<tr>
<td>Lump sum benefit can be used as collateral to secure mortgage or primary residence.</td>
<td>0</td>
<td>117</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>79</td>
<td>40</td>
</tr>
<tr>
<td>Survivors benefit period have been increased from 12 years in the old scheme to 15 years in the new scheme.</td>
<td>0</td>
<td>138</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>58</td>
<td>30</td>
</tr>
<tr>
<td>The scheme is made up of three-tiers of which the 1st and 2nd tiers are mandatory and the 3rd tier is a voluntary provident fund/personal pension (for both the formal and informal sector).</td>
<td>0</td>
<td>69</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>127</td>
<td>65</td>
</tr>
</tbody>
</table>
### Appendix J

**Characteristics of respondents with regards to retirement planning**

<table>
<thead>
<tr>
<th>Question</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think that your pension will be enough to take care of you and your dependents during retirement?</td>
<td>Yes 33</td>
<td>17</td>
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<td>What do you think your monthly pension will be?</td>
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<td>Are you investing money towards your retirement?</td>
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<td>If yes, what is the nature of your investment?</td>
<td>Treasury bill 50</td>
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<td>Others 41</td>
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<tr>
<td>Do you have or planning to own any other business that will provide you with some income during your retirement?</td>
<td>Yes 179</td>
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<td>If yes, what is the nature of the business?</td>
<td>Farm 29</td>
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<td>Store 47</td>
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<td>Livestock 14</td>
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<td>Do you have a house of your own?</td>
<td>Yes 49</td>
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<td>Where will you live or plan to live during retirement?</td>
<td>Own house 191</td>
<td>97</td>
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<tr>
<td></td>
<td>Rent 3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Others 2</td>
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<td>Where do you live now?</td>
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<td>Rent 81</td>
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<td>Family house 61</td>
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<td>Others 5</td>
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<td>Are you building a house?</td>
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<td></td>
<td>No 98</td>
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<td>Already have 22</td>
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<td>If yes, can you complete it before you retire?</td>
<td>Yes 67</td>
<td>88</td>
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<td>Does your company pay your hospital expenses?</td>
<td>Yes 140</td>
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<td>Does it cover your family too?</td>
<td>Yes 117</td>
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<td>If yes, will this continue after retiring from the company?</td>
<td>Yes 21</td>
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<td>Do you have a health insurance?</td>
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### Appendix J Continued

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<tr>
<th>Question</th>
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<td><strong>If no, how do you intend to pay for your health bill during retirement?</strong></td>
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<tr>
<td>Own resources</td>
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<td>My children</td>
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<td>Other relatives</td>
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<td><strong>How do you hope to live?</strong></td>
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<td>Normal</td>
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<td><strong>Do you have any hobbies or interest?</strong></td>
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<td><strong>If you have a hobby what is it?</strong></td>
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<tr>
<td>Reading</td>
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<td><strong>Will you continue with your hobbies during retirement?</strong></td>
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<td>96</td>
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<td><strong>How will you spend or intend to spend your free time during retirement?</strong></td>
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<td>Get employment</td>
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<td>Stay at home</td>
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<td>Do voluntary work</td>
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<td>Look after grand children</td>
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<td>Do my own business</td>
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