UNIVERSITY OF CAPE COAST

MICRO PENSION SAVING AND RETIREMENT INCOME OF INFORMAL ECONOMY WORKERS IN THE GREATER ACCRA REGION, GHANA

BY

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DECLARATION

Candidate's Declaration

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

Candidate's Signature.. Date 19/03/2020

Name: DOMINIC B. BOYETEY

Supervisors' Declaration

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

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ABSTRACT

The study investigated micro pension saving (MPS) in shaping retirement income of informal economy workers with respect to enrolment mechanisms, motives for enrolling and the attitude towards pension saving. The study design used was cross-sectional survey. The sample was made up of 321 contributors of MPS, 334 non-contributors of MPS and ten key informants. Both quantitative and qualitative data were collected using interview schedule and interview guide. Using principal component analysis, multiple regression analysis and thematic analysis, the study concluded that more access provision, incentives and security result in increased informal economy workers' participation in MPS. The dominant saving motive was found to be the bequest motive which inspires less pension savings. The study further found that computational capability and personal competence attitudes were significant in predicting the likelihood of informal economy workers contributing to pension saving. In addition, the study established that non-contributors of MPS have higher income compared to contributors of MPS. However, contributors of MPS were found to have higher perceived retirement income adequacy compared to non-contributors, even though no correlation existed between pension savings and income earned by contributors. Consequently, it is recommended for corporate pension trustees to take interest in the financial education of informal economy workers in order to shape their attitude and to create institutional structures to promote the culture of pension saving. Specific pension education on the need to save for old age income security through the media would reach out to thousands of informal economy workers who may be at risk of old age poverty if they have not saved yet for retirement.

KEY WORDS

Income

Informal

Micropension

Retirement

Savings

Workers

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DEDICATION

To my wife, Mrs. Ama O. Boyetey and my son, Kerhan B. Boyetey

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
ATA	Activity Theory of Ageing
CC	Computation Capability
CESCR	Committee on Economic Social and Cultural Right
DB	Defined Benefit
DC	Defined Contribution
ELB	Emotional Load Balance
FPR	Financial Planning for Retirement
FRT	Financial Risk Tolerance
FTP	Future Time Perspective
GoG	Government of Ghana
GPS	Grameen Pension Scheme
GSS	Ghana Statistical Service
ICLS	International Conference of Labour Statisticians
IDA	Individual Development Account
IDB	Inter-American Development Bank
ILO	International Labour Organization
ISF	Informal Sector Fund
ISS	Informal Sector Scheme
ISSA	International Social Security Association
ITS	Institutional Theory of Savings
IWC	Informal Worker Contributor

IWN	Informal Worker Non-contributors
LCH	Life Cycle Hypothesis
MELR	Ministry of Employment and Labour Relations
MFI	Micro Finance Institution
MPS	Micro Pension Savings
NPRA	National Pension Regulatory Authority
OECD	Organization for Economic Co-operation and Development
PAM	Partner Agent Model
PC	Personal Competence
PCA	Principal Component Analysis
PE	Personal Engagement
RGC	Retirement Goal Clarity
RPA	Retirement Planning Activity
SDGs	Sustainable Development Goals
SHARE	Survey of Health, Ageing and Retirement in Europe
SKFPR	Self-related Knowledge about Financial Planning for Retirement
SSNIT	Social Security and National Insurance Trust
SWB	Subjective Well-Being
TPB	Theory of Planned Behavior
TPS	Trust in Pension Scheme
TUC	Trades Union Congress
UK	United Kingdom

UN	United Nations
UNIWA	Union of Informal Workers Association
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

Ghana has a large informal economy workforce and a fast-growing aging population (Ghana Statistical Service [GSS], 2015; World Health Organization [WHO], 2014). Providing old age income security to the expanding group of elderly people in the informal economy is, therefore, crucial (Agravat & Kaplelach, 2017). Micro Pension Saving (MPS) schemes represent a viable pension intervention for informal workers who ordinarily are left out of formal pension schemes (Hu & Stewert, 2009) and exposed to the risk of income insecurity during their old age (Lugilde, Bande & Riveiro, 2017). Through micro pension savings, informal workers are guaranteed economic security as stipulated by law (Government of Ghana [GoG], 1998; International Labour Organisation [ILO], 2011).

Njuguna (2012) notes that MPS schemes are underpinned by the life cycle hypothesis and this, creates an opportunity for pensioners to accumulate wealth. After a decade of the introduction of tier-three MPS schemes for informal workers in Ghana, enrolment to the scheme is low (Kumah, Botsie, Boachie & Adu-Brobbey, 2017), mainly because there is limited evidence as to how wealth will be generated. Informal workers are, therefore, not very convinced and informed about the benefits that are associated with MPS and how they could take advantage of the scheme to accumulate enough wealth for retirement income security, hence, my motivation to carry out this study.

Background to the Study

The World Bank approximates the scope of the informal labour economy to be 4-6 percent in the high-income nations and over 50 percent in the low-income nations (Onyango, 2014). It has been estimated that between half and three-fourths of non-agricultural employment in developing countries is informal, although the degree of informality varies across countries and regions (World Bank, 2010). In Africa, informal work has been estimated to account for around 80 percent of non-agriculture employment and 90 percent of the new jobs in the past decade (Vanek, Chen, Hussmanns, Heintz & Carre, 2012). In Latin America, 55 percent of the labour force is in the informal economy and this share has been increasing in most countries (Hu & Stewart, 2009). In Asia, between 45 percent and 85 percent of non-agricultural employment, depending on the country, is estimated to be informal (Guillermo, Maloney, Arias, Fajnzylber, Mason & Saavedra-Chanduvi, 2007).

These large segments of the labour force make the delivery of MPS inevitable to forestall any risk of the falling living standard at old age, consistent with the global goal of providing adequate social security protection to all (Sustainable Development Goals [SDGs], One) (United Nations [UN], 2017). Rogan and Skinner (2017) stated that MPS constitutes one of the new social security protection programmes implemented in developing countries. Shankar and Asher (2009) defined MPS as a voluntary contribution scheme where savings are invested through financial and capital markets by a professional fund manager over an extended period and paid, either in a lump sum, a phased withdrawal, annuity or some combination of these options. Mukherjee (2014) and Sahu (2014) also defined MPS as any financial plan to keep up old age income.

According to Agravat and Kaplelach (2017), micro pension saving has gained prominence as a strategy to avoid poverty after retiring and in old age. Consequently, as Mackellar, (2009) and Wang, Zhag, Shand and Howell (2014) clearly observed, the pension delivery in both developed and developing countries has been reformed to include MPS in order to accumulate pension savings for informal economy workers. Choi, Luauer and Mark, (2016) and Lugilde *et al.* (2017) further assert that the accumulated saving obtained through MPS is used to smoothen consumption during retirement and serve as a source of income during future income uncertainties. On this, Njuguna (2012) considered MPS for informal economy workers as a smart procedure for saving and insurance because it hedges their savings from investment and inflationary risks.

According to Amaike (2016), as people age and retire from work, their welfare is threatened if they have not saved towards their retirement. The reason is that, during later years in life, people get reduced opportunity for income-generating activities and experience difficulty in meeting their basic needs after retiring from work. Particularly, for informal economy workers, Hu and Stewart (2009) and Onyango (2014) assert that the uncertainties surrounding their work limit their avenue to create retirement income. Thus, it is important that in the prime stage of their life cycle, workers save adequately to make up for the dwindling resources and opportunities that may occur later in life. This circumstance is explained by four complementing theories, namely: The Life Cycle Hypothesis (LCH), Activity Theory of Aging (ATA), Theory of Planned Behaviour (TPB) and the Institutional Theory of Savings.

Central to the LCH, as Chipote and Tsegaye (2014) clearly observed, is the fact that rational individuals maximise satisfaction of their future consumption by saving to finance their retirement consumption and dis-saving during retirement. Njunge (2013) posits that the relevance of the LCH to MPS then is that through micro pension savings, individuals could transfer purchasing power from one phase of their life to another. This can affect how they live after retirement. According to Moody (2012), Activity Theory of Aging asserts that life after retirement is enhanced when one engages in income-earning activities in the course of active life. Consequently, Novak (2012) is of the view that informal economy workers are in the position to have sustainable livelihoods and better qualities of life and be more satisfied in retirement if they have made conscious efforts to save while they remain active in their income earning activities as much as possible.

In addition to averting any hardship that may affect welfare of workers when retired and to accumulate enough savings, Ajzen, Nicholas and Cote (2011) and Lee and Kim (2016) professed on the Theory of Planned Behaviour (TPB). The theory emphasizes the need for individuals to pay attention to specific and independent attitudes such as financial risk tolerance, financial planning and financial knowledge which act on saving behaviour. Chou *et al.*

(2014) opine that such attitudes inspire individuals to make conscious efforts to save and thus, influence what happens to them after retirement. Similarly, on the Institutional Theory of Savings, Beverly and Sherraden (1999), Schreiner and Sherraden (2007) and Sherraden (1991) argue that an individual's financial or real asset accumulation which leads to income security in retirement is dependent upon the accesses, incentives, information, facilitations, expectations, restrictions and securities afforded by institutions.

MPS as a form of a social security protection is, thus, established on the foundation of rights-based approach (Committee on Economic, Social and Cultural Right [CESCR], 2007; ILO, 2011). On this, Standing (2004) notes that the rights-based approach views social security protection as a right to be enjoyed by every human being and that its enforcement eliminates inequality and discrimination in social service delivery. Given that the informality of workforce limits their inclusion to contributory pension systems, MPS makes the task of recognizing informal workers' human rights more crucial, resulting in expansion of universal pension coverage (Cecchini, Filgueira, Martinez & Rossel, 2015; Davalos *et al.*, 2017; Inter-American Development Bank [IDB], 2013).

The right-based approach practiced in MPS delivery leads to better and more sustainable human development outcomes (UN, 2011). According to Alfers, Lund and Moussie (2017), the enforcement of people's human rights has led to many human right outcomes such as improved girls' education, enhanced social security and improved access to healthcare in many jurisdictions. From this philosophical perspective, Mukherjee (2014) found MPS to encourage informal workers' migration towards a greater formality in labour practices, and thus, supportive of greater inclusion in formal social security programmes. Therefore, for workers in the informal economy, MPS is a means of achieving their right to income security and mitigating the risk of old age poverty (Floro & Meurs, 2013).

Barr and Diamond (2009) argue that Micro pension saving schemes offer safety nets to informal workers to save and avoid risk of old age poverty. The institutional arrangements offered in Micro Pension Schemes remove all forms of barriers that constrain income-risk informal workers from participating in the social security schemes of formal economy workers (Bucheli, Forteza & Rossi, 2010; Bosch & Manacorda, 2012; Forteza, Apella, Fajnzylber, Grushka, Rossi & Sanroman, 2009). Floro and Meurs (2013) are of the opinion that the institutional processes in micro pension schemes improve access, which in many cases, have been used by eligibility and contributory capacities to exclude informal workers. Micro Pension Savings scheme, therefore, compensates for the gaps in contributory social security coverage and reduces the vulnerability of low-income persons and informal-economy workers to help them better manage risk and combat economic insecurity, argues Mukherjee (2014).

Beverly and Sherraden (1999) posit that informal workers find institutionalised voluntary pension saving schemes not only convenient but also decrease transaction costs and are, therefore, more likely to save. Hu and Stewart (2009) and Kwena and Turner (2013) emphasized the convenience of

MPS with respect to contribution, accessibility, withdrawal terms and zero administrative cost, resulting in increased saving culture for the informal workers. Clancy, Han, Mason and Sherraden (2006) also note that Micro Pension Schemes provide incentives and facilitations aimed at encouraging savings. Schreiner and Sherraden (2007), for instance, revealed that automatic enrolment, automatic deposit, tax-free and rebates have more significant positive effects on saving outcomes in pension. Schmidt-Hebbel (2014) also reported that informal economy workers find MPS appealing and transparent which boost their confidence and encourages saving in order to increase their pension funds.

According to Idowu and Olanaike (2009), MPS increases individuals' pension benefits, causing a corresponding enhancement in individuals' welfare. Ralston, Schatz, Menken, Gomez-Olive and Tollman (2016) found that income earned from MPS has protective effects for all other members of the households. In other words, as Lloyd-Sherlock, Barrientos, Moller and Saboia (2012) observe, MPS becomes the source of income not only for retired workers but also their dependents. Nino-Zarazua *et al*. (2012) further observed that women who earned income through MPS were more likely to pool their pension income with household members and their pensions also have a greater effect on other household members' health and well-being. Furthermore, pension receipt from MPS generally reduces stress for all adults within the household and improves outcomes for children (Ardington, Barnighausen, Case & Menendex, 2013).

Different countries have varying forms of micro-pension systems for the benefit of informal economy workers. According to Chen and Turner (2012), in many advanced countries, MPS is the foundation on which at least a basic income security is earned by the greater number of informal workers. China and India, for instance, Dullemen (2015) observes, have pension schemes tailored to provide adequate income security to informal workers in old age. In China, Hu and Stewart (2009) further assert that, the scheme is characterised by minimal compulsion as well as voluntary private pension that attracts a lot of small-scale workers due to simplification and flexibility features of the scheme.

In India, Goyal (2010) reports the Partner Agent Model (PAM) and the Grameen model as the most common voluntary pensions in operation. According to Shanker & Asher (2009), the PAM entails an insurance company managing the savings by pooling them in a fund, while a Micro Finance Institution (MFI) offers the micro pension products. For instance, under the Grameen Pension Scheme (GPS), all borrowers from Grameen Bank with a loan over a specified amount contribute a small sum each month for a period of ten years. According to Heenkenda (2017), the amount is compounded and returned as a lump sum after ten years. Mackellar (2009) observes that Bangladesh has an MPS scheme that operates on the Grameen principle and it is considered as one of the most useful components in multi-tiered pension system.

In the case of Chile, the Organization for Economic Co-operation and Development (OECD) (2013) reports a blend of voluntary schemes with government subsidised and co-sponsored schemes allowing for flexible contributions and withdrawal terms due to the seasonal nature of informal works. The scheme is uniquely noted for its tax-free incentive on contributions and investment income (Hu & Stewart, 2009). According to Dullemen (2015), New Zealand has Kiwi Saver, a micro pension scheme that offers incentives such as tax relief and mortgages to attract informal economy workers to contribute to pension savings. Also, South Africa has a government sponsored pension scheme that guarantees minimum income for all informal workers (Ralston *et al.*, 2016).

Van-Derhei (2011) cites America's 401 (k) retirement savings plan achieving retirement income adequacy for low income workers. These schemes are largely successful in providing income security to the greater number of informal workers through the institutional mechanisms put forward by the Institutional Theory of Savings (Schreiner & Sherraden, 2007). In observing the popularity of MPS in a lot of East African countries, Kwena and Turner (2013) argues that Kenya and Tanzania have the technologically-driven Mbao Pension Plan for informal workers which are facilitated by the M-Pesa mobile money system.

According to Njuguna (2012), the Mbao Pension Plan is a type of MPS scheme that tailors a savings product, particularly, to marginal population and contributes to their improved social and economic security while also supporting the further development of the financial services and communication sectors. Kwena and Turner (2013) found that the scheme was important in providing income security in old age and the scheme's design having large effect on people's consumption and saving behaviour.

In Ghana, the informal economy accounted for about 80 percent of total employment in 2014 (GSS, 2014). Informal economy activities are more dominant in urban areas than in rural areas, with 61.5 percent and 23.3 percent of the population respectively engaged in the sector (GSS, 2014). According to Osei (2007), the size of operations in informal economic activities in Ghana are usually small and owners rely mainly on personal savings and credit from Micro Finance Institutions (MFIs) to produce mainly goods and services for the local market. Evidence from the World Bank (2009) indicates that the labour force is moving outside agriculture into self-employment as well as formal and informal wage employment in Ghana and this is leading to the growth of informal urban employment. The urban informal labour force is diverse and engages in several economic activities ranging from agricultural, agro-processing enterprises, services, construction and manufacturing (GSS, 2014; Ofori, 2009).

For many of the workers, Osei-Boateng and Ampratwum (2011) observed that informal job is a survival strategy and traditional forms of social assistance are the main hope for general welfare. Kpessa (2011) concurs that informal pension saving is seen as necessary to secure the financial stability of informal workers when old and no longer able to participate in the labour market. It was in consideration of the above that the Parliament of Ghana reformed existing laws on pensions by introducing the National Pensions Act (2008), Act 766 (NPRA, 2015) in accordance with section 36(3) and 37 (6) (a) of the 1992 constitution. The Act provides that workers in the informal economy, just like their counterparts in the formal economy, will also receive monthly pensions or a lump sum after retirement.

This was done in fulfilment of chapter six (6) of the 1992 Constitution, based on the directive principles of state policy at section 36 (3) and 37(6) (a) which ensures the State promote just and reasonable access for all citizens to public facilities and services and ensure that contributory schemes are instituted and maintained to guarantee economic security for self-employed and other citizens of Ghana respectively.

The new Pension Act is also known as the Three-tier Pension Scheme. According to Adzawla, Baani and Wontumi (2015), the scheme consists of two mandatory schemes (first and second tier) and a voluntary scheme (tier-three). The Act specifically created the tier-three pension scheme to promote pension income security among informal economy workers. The core objective of the new pension scheme is to offer retirement benefit that will ensure a pension income security for workers and an improved standard of living. Under the Act, a constitutional organisation - the National Pension Regulatory Authority (NPRA), was established to supervise all the operators of the new pension schemes, as Ping (2013) observes. These policy reforms occasioned the restructuring of SSNIT and extension of pension coverage to the informal economy.

Prior to the enactment of Act 766, Asante (2016) posits that SSNIT engineered a pilot project called Informal Sector Scheme (ISS) which was later changed to Informal Sector Fund (ISF) to provide pension benefits to informal economy workers. Both the tier-three and the ISF are voluntary Defined Contributory (DC) pension schemes operated in the form of group pension scheme or personal pension schemes (Kumah *et al.,* 2017). Under this scheme, Ashaley (2012) emphasize that savings collectors are sent to collect money from the workers and the moneys are then invested in the financial market for which withdrawals can be made in lump sum or annuity after some years of retirement.

The Pensions Act (Act 766) specified a joint working relationship between licensed corporate trustees, fund managers and custodians. The trustees manage the pension scheme while custodians keep the scheme's cash and investments (NPRA, 2015). This prevents monopoly, hence boosting contributor's confidence. Also, by law, the informal economy pension scheme (tier-three) offers additional advantages such as tax savings, lump sum and accessibility, monitoring investment performance, opportunity for higher returns and choice of a competitive service provider, Petra Trust (2012) emphasizes. In addition, the law mandates Micro Finance Institutions (MFIs) and private insurance companies to develop micro pension products, as their operations are expected to widen the scope of social security for informal economy workers.

According to Kumah *et al.* (2017), the introduction of the tier-three pension scheme (a form of MPS) in Ghana has provided pension coverage to the informal population who were previously difficult to be reached through the formal economy pension approaches and at risk of old age poverty. Collins-Sowah, Kuwornu and Tsegai (2013) are of the view that people in the informal economy cherish long-term savings product like micro pensions due to the economic security it promises. In this regard, the introduction of the Informal Sector Fund (ISF) pension scheme affords workers in the informal economy an opportunity to save towards retirement (Afenyadu, 2014). There are indications that basic pension benefits positively impact households with elderly members (Asante, 2016), and by extension, a reduction in aggregate poverty (Ping, 2013).

Evidence from Northern Ghana, as reported by Adzawla *et al.* (2015), indicates that informal pension scheme provides economic security to people who wish to satisfy their basic needs both present and future. Their study concluded that the tier-three MPS is an essential mechanism for a sustained poverty eradication and development. Darko (2016) observed that the third tier MPS concept is better in addressing inadequacies and discriminations found in the state-based pension schemes in providing old-age income security to low income earners. Considering the important role MPS is playing in reducing vulnerability and inclusion of informal workers to pension saving schemes, numerous policy makers, academicians and service providers have begun to buy into its prospects.

Greater Accra Region is the hub of commercial activities in the country (Government of Ghana [GoG], 2013). The Ghana Statistical Service (2014) surveys have revealed that the region is significantly developed, and due to the region's vibrant economy, the region attracts several public and private sector jobs including major players in the provision of pension services. Migrant workers within Ghana and from other African countries found within the region engage in diverse informal works, making the region the most populated part of the country (Cooke, Hague & Mckay, 2016; GSS, 2015, 2016).

Barwa (1995) and Ofori (2009) are of the view that access to improved markets and small short-term credits for informal workers makes Greater Accra Region the preferred destination for informal work. According to Osei-Boateng and Ampratwum (2011), the informal workers and their families, therefore, benefit from these facilities which allows for wider income diversification. Osarekhoe (2009) and Osei-Boateng (2011) note that the informal economy workers are mostly small-scale and self-employed who are in control of their income. Colin (2013) further observed that the activities of the informal workers stimulate productivity and increase income which, in turn, generate demand and labor supply for more goods and services.

Given the vast income-generating opportunities in the informal economy in the Greater Accra Region, informal workers are in position to create pension wealth as postulated by the LCH. The tier-three MPS scheme, supported by the institutional theory of saving, therefore, serves as an instrument to encourage informal workers in the region to effectively contribute part of their income to pension saving in order to maintain adequate income security during retirement.

Statement of the Problem

Pension schemes in Ghana have been reformed to capture the informal economy workers with the objective to offer workers retirement benefits that will ensure a pension income security and an improved standard of living (NPRA, 2015; Ping, 2013). However, previous studies (Adzawla *et al.*, 2015;

Kumah *et al.*, 2017) on the coverage level of the pension system among informal workers in Ghana, especially with the coming into being of the new pension law, Act 766 (2008), suggest that the level of pension coverage among the informal economy workforce is minimal.

According to the GSS (2012), estimates from Ghana's 2010 population census approximate the total workforce to 10 million with about 88.9 percent of the labour force in the informal sector (Wireko-Brobby, 2018). The Ministry of Employment and Labour Relations (MELR) reports the number of contributors to the tier-three as 152,257 and this includes provident fund schemes which target the formal sector (MELR, 2017). Thus, close to 10 years after the establishment of the tier-three MPS scheme, the adoption rate has only been about two percent which implies that informal workers are completely at a higher risk of adverse conditions and unavoidable income insecurity when they grow old.

Many empirical studies (Dullemen, 2015; Ivanova, 2010; Onyango, 2014) attribute the low coverage of MPS schemes to unclear motives for saving. Although the LCH emphasize on retirement saving for rational individuals during their productive age (Modigliani 2005), it does not spell out what the life-cycle pattern depicts when informal workers do not possess the rationality it assumes. Mackellar (2009) and Mpofu (2014) find that the disinterest of informal workers in MPS schemes is largely because of their volatility of income and precautionary saving motive against bad times. Mpofu (2014) and

Onyango (2014) expressed this difficulty in their Kenyan and Zimbabwean studies respectively.

Similarly, Adzawla *et al.*'s (2015) study in the Tamale Metropolis in the Northern Region of Ghana attributes the low enrolment to low and irregular income among most informal workers. They explain that the current income levels of informal workers are too low for them to deduct any contribution from it. This is inconsistent with the LCH which assumes that income is continuous over time and drops to zero when an individual reaches retirement (Njunge, 2013). The theory fails to specify what happens to pension savings when informal workers experience fluctuations in income (zero income) and cannot predict future income. This notwithstanding, there is evidence (Choi *et al.*, 2016; Lugilde *et al.*, 2017) to show that low-income earners are able to contribute and fully benefit from pension schemes.

More prominently, Aboalik (2017) raised the issue of low pension benefits accounting for the low enrolment in pension schemes in the Upper East Region of Ghana. This defies the bases of the LCH, ATA and the ITS that wealth is accumulated for retirement income security (Chipote & Tsegaye, 2014; Moody, 2012; Schreiner & Sherraden, 2007). Darko (2016) and Kumah *et al.* (2017) seem to claim that benefits under the scheme have no actuarial basis therefore informal workers perceive the scheme as not viable in providing income adequacy at old age. This is inconsistent with the Act that establishes the third-tier pension scheme (NPRA, 2015).

The LCH provided for pension wealth accumulation for old age income adequacy (Modigliani 2005). However, it fails to take into consideration instructional arrangements professed by the ITS, accounting for the low enrolments in MPS schemes. Studies (Afenyadu, 2014; Adzawla *et al.*, 2015; Asante, 2016; Darko, 2016) found inaccessibility of schemes, inadequate pension information and lack of incentives as main barriers limiting informal economy workers enrolments in MPS schemes in Kumasi, Accra, Koforidua and Tamale Metropolis. These studies are limited in their geographical scope, and thus cannot be generalised to the entire landscape of pension delivery system for informal workers in Ghana. In addition, Darko's (2016) study population was formal workers while Afenyadu's (2014) study involved only petty traders who cannot be deemed representative of the diverse spectrum of informal workers.

Also, the LCH failed to factor in the financial attitude of informal workers in pension wealth accumulation unlike the TPB. Studies (Ares, Lopez & Bua, 2015; Mackellar, 2009; Uthira & Manohur, 2009) identified psychological and behavioural factors such as financial literacy, financial planning and financial risk as a set of individual characteristics that might influence low enrolment on pension schemes in Spain, Portugal and Asia. Asante (2016) buttressed the findings of the above authors with a similar finding of high level of illiteracy among informal economy workers in the Kumasi Metropolis. However, literature on the general financial attitude of informal workers towards pension savings in Greater Accra Region is conspicuously unavailable as most of the Ghanaian studies are narrowed in geographical scope. The present study, therefore, constitutes an attempt at filling these gaps.

Objectives of the Study

The main objective of this research was to explain micro pension saving and retirement income of Informal Economy Workers in the Greater Accra Region of Ghana. The specific objectives are to:

1. Investigate institutional mechanisms of MPS schemes in extending coverage to informal economy workers.
2. Analyse informal economy workers' motives for enrolling on MPS schemes.
3. Examine the effect of financial attitudes of informal economy workers on pension savings.
4. Examine differences in perceived retirement income adequacy of micro pension savers and non-pension savers.
5. Examine the relationship between income levels and pension savings of informal economy workers.
6. Assess perceived satisfaction about quality of life after retirement of informal economy workers.

Research Questions

In order to achieve objectives one and two respectively, I asked the following questions to guide the study:

1. What institutional mechanisms are used by MPS Schemes to extend coverage to informal economy workers?
2. What are the motives for informal workers' enrollment in pension savings schemes?

Hypotheses

With respect to objectives 3, 4, 5 and 6, the following hypotheses were set to be tested.

1. H_0: People with financial attitude are just as likely to contribute to MPS as those who have no financial attitude.
2. H_0: There is no significant difference between MPS savers and non-savers in terms of their perceived retirement income adequacy.
3. H_0: There is no significant relationship between pension savings and respondents' level of income.
4. H_0: There is no significant difference between contributors and non-contributors with respect to their perceived satisfaction with quality of life in retirement.

Sub-hypotheses

The following sub-hypotheses are part of the broader hypothesis with respect to objective five. These hypotheses aimed at bringing further clarity to the pension-savings-income relationship of informal economy workers.

1. H_0: There is no significant difference between income levels of MPS contributors and non-contributors.

2. H_0: Shocks experienced by informal workers are independent of their MPS saving.

Significance of the Study

This study attempts to investigate micro pension saving in shaping retirement income in the Greater Accra Region of Ghana as the outcome would be valuable for designing policy interventions for improved social security systems. The findings will also serve as a basis for offering policy alternatives to ensure informal sector workers are aware of, willing and can have access to pension schemes that meet their needs and can accelerate poverty reduction. The research output could provide the basis for institutional reforms in the MPS sector. The findings will inspire the review of the strategies of service providers under pension schemes and restructuring of their service delivery models with the view to make it more efficient and effective in serving the informal economy.

This study does not only contribute to literature by raising awareness on the issues of micro pension in Ghana, but also achieves this by serving as a central source of information on efforts in integrating the informal economy workers under the pension schemes in Ghana. Furthermore, the study is beneficial in that it adds to the argument on the extent to which micro pension can serve as a basis for social protection for the informal sector workers in Ghana. Particularly, contributors to the scheme would have the opportunity to enjoy retirement income security during late life as the scheme assures. The research also serves as a reference point for future researchers to consult as well as expand the theoretical and empirical framework that it has set.

Scope

Thematically, the research concentrates on motives for saving in MPS; retirement income adequacy in MPS schemes; perceived satisfaction about the quality of life after retirement, relationship between income levels and MPS, institutional mechanism in shaping MPS and financial attitudes towards MPS. The geographical scope of the research extends to rural, peri-urban and urban communities in the Greater Accra Region of Ghana. The region is suitable for the study because its vibrant economy constitutes a hot spot for commerce which attracts labour from all parts of the country. In addition, major players in the provision of actuarial services ply their trade within the region. The study is limited to micro-pension schemes registered with the National Pension Regulatory Authority (NPRA). The study focuses on diverse segments of informal sector workers but can be distinguished into two groups of MPS - contributors and non-contributors.

Limitations of the Study

A study of informal sector workers pension savings required sampling people from diverse informal worker groups with several characteristics. Consequently, the study anticipated limitation in the sampling methods as a complete sampling frame for informal workers was unavailable. Therefore, findings from this research were based on limited sample size from only the

Greater Accra Region of Ghana. The study further acknowledged biases that were beyond the control of the researcher in the data collection process as one of the limitations in the study.

Organisation of the Study

The thesis is divided into nine chapters. Chapter One gives a general introduction of the research topic. It covers background of the study, statement of the problem, objectives of the study, research questions, hypotheses, significance of the study, scope of the study, limitations of the study and organisation of the thesis. Chapter Two comprises the theoretical and conceptual review, Chapter Three centres on the empirical review, lessons learnt and conceptual framework.

The fourth chapter covers the methodology and specifically discusses the research paradigm adopted, study area, target population, sampling procedure, source of data, data collection instruments, fieldwork, ethical consideration, data processing and analysis. Subsequently, Chapters Five, Six, Seven and Eight present the discussion on the research results based on the stated research objectives. That is, Chapter Five presents the results of institutional mechanisms used to enroll informal economy workers onto pension schemes. Chapter Six presents results of the motives for saving in MPS schemes and Chapter Seven presents findings of the effect of financial attitude on pension saving.

The final part of the results and discussions is presented in chapter eight. This chapter presents the results for perceived retirement income adequacy, income level-pension saving relationship and perceived satisfaction about quality of life. Finally, Chapter Nine presents the summary of findings, conclusions, recommendations, contribution to knowledge, as well as the areas for further research.

CHAPTER TWO

THEORETICAL AND CONCEPTUAL REVIEW

Introduction

This chapter is presented in two parts, the first part reviews various related theories of micro pension saving whilst the second defines and discusses concepts of micro pension saving and variables that shape informal sector workers' pension savings. According to Hart (2018), the essence of undertaking a theoretical review is to establish the foundation of existing knowledge in the research area. Particularly, the theoretical review provides the structure that supports the research rationale, the problem statement, the significance, the research questions, empirical review, method of data collection and analysis (Kumar, 2011; Lysaght, 2011). The conceptual review aspect helps in identifying key variables, increases knowledge on the study area and sharpens the statement of the problem (Griffee, 2012).

Theoretical Review

Micro pension saving is explained from four main theoretical perspectives since no single theory seems adequate in explaining retirement wealth accumulation for informal sector workers. These are namely: the Life Cycle Hypothesis (LCH), Theory of Planned Behaviour (TPB), the Institutional Theory of Savings (ITS) and Activity Theory of Aging (ATA). Satisfaction in quality of life in retirement is expatiated by the Activity Theory of Aging (ATA). Thus, the combination of these theories was necessary since they complement each other in motivating informal workers to contribute to pension savings to build enough wealth for old-age income security.

The Life Cycle Hypothesis (LCH)

According to Friedman (1957), traditional neoclassical economic theories set the basis for explaining saving behaviour of people in relation to income relative to consumption. From these theoretical perspectives, individuals are assumed to be rational. That is, they have access to perfect market and knowledge and respond to predictable changes in incentives, Pollak (1998) observes. Therefore, it is expected that a rational individual will save when his/her income exceeds consumption. In explaining the economic logic of savings, Baker (2009) and Alimi (2013) concur that the Life Cycle Hypothesis (LCH) propounded by Modigliani and Brumberg (1954) is the most preferred.

According to Yousolf and Sabri (2017), the LCH provides a compass to better understand the economics of savings, consumption and wealth accumulation at both the micro and macro level. It sets the stage for research on pension investments and savings including private and public provision of social security. Central to the LCH, as Chipote and Tsegaye (2014) emphasise, is that rational individuals attempt to maximise satisfaction of their future consumption given budget constraints. To Modigliani and Brumberg (1954) and Jappelli (2005), the core motivation is to save enough to accumulate wealth for later expenditure and, more specifically, to support consumption at the habitual standard during retirement. The individual's decision to attain that maximum satisfaction asserted by the LCH depends on his/her labour income, age and the amount set aside for pension, Castel (2006) observes.

The concept of LCH thrives on five key assumptions. The first, according to Kankaanranta (2006), states that consumption is spread evenly throughout a person's lifetime leading to accumulated savings during earning periods to maintain consumption during retirement. The next postulates that income is constant until retirement and diminishes to zero thereafter, as Modigliani (2001) observes. Baranzini (2005) claims the third assumes that when the length of life and the productivity of the individual are perfectly known, the individual consumes the whole income of his life leaving no property or bequest. The fourth supposition is that the propensity to consume and the propensity to save are different at various stages of an individual's life (Jappelli, 2005). Finally, as Chawla (2008) concurs, it is assumed that the individual consumes a constant percentage of the present value of his/her life income and does not earn any profits from savings. This presupposes a zero-interest rate on deposits.

In demonstrating LCH, Figure 1 shows that income (Y) continues over time and drops to zero when an individual reaches retirement (N) (Njunge, 2013). Consumption (C) remains constant throughout the life-span of the individual. The difference between income and consumption generates savings which accumulates to total aggregated savings (A), often referred to as wealth (Chikoko *et al.*, 2013; Mpofu, 2014).

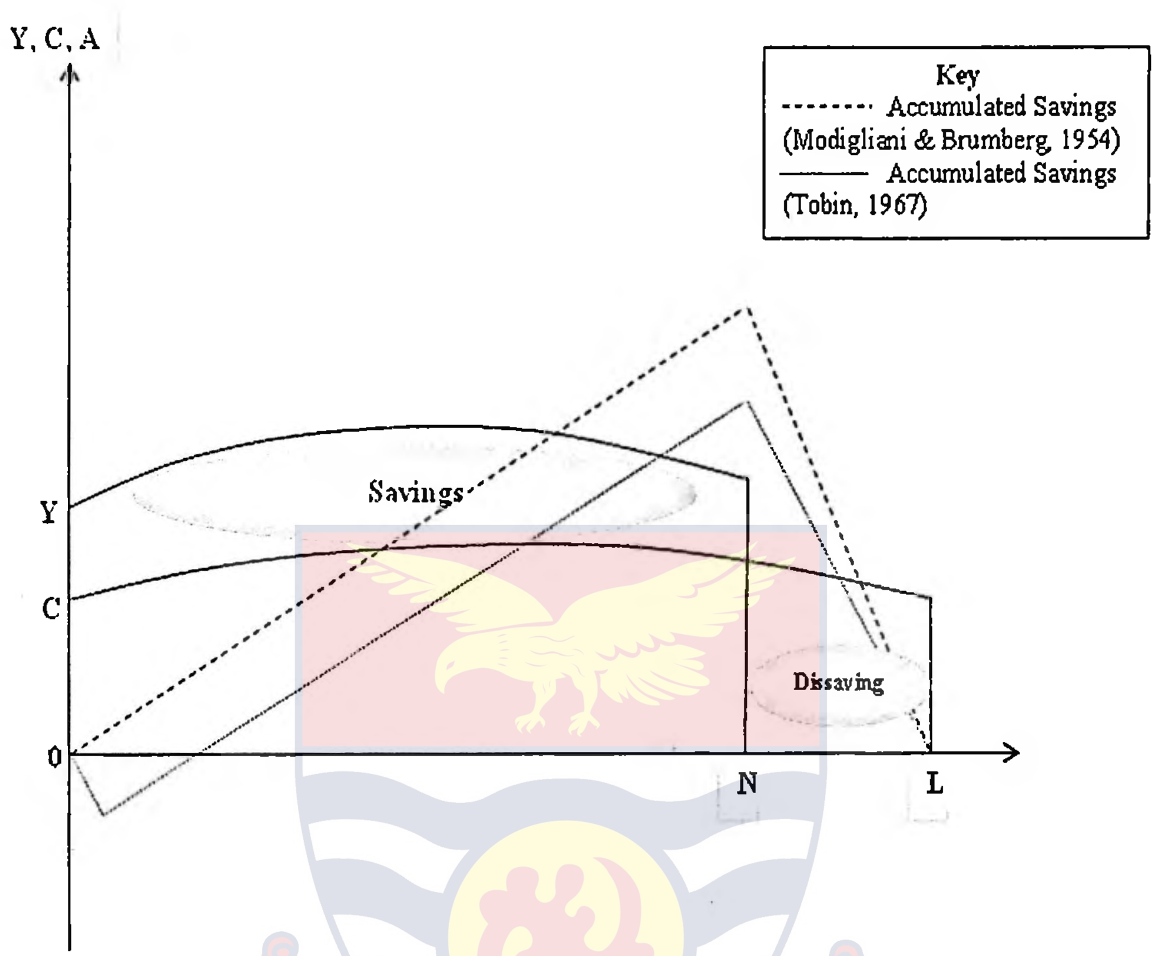

Figure 1: Line Graph of the Life Cycle Savings Hypothesis

Source: Adopted from Shafii (2007), Gythfeldt (2008) and Mpofu (2014)

According to Modigliani (2005), during retirement years when one dis-saves, accumulated savings would be used to maintain average consumption. Baranzini (2005) observes that since all is known and no risk exists, by the time of death, accumulated savings would be depleted. Tobin (1967) contrasted Modibliani and Brumberg's (1954) model by arguing that an individual's accumulated savings begins at zero, then decreases to negative due to many commitments during early working life. Afterwards, accumulated savings increases along with age and reduces at a certain point of time, usually, during retirement age. His argument was more realistic since it considers the possibility of debt occurrence among households in their early employment period (Shafii, 2007).

There are two inferences that are made from the LCH concerning income and age with respect to pension savings. Based on the hypothesis, Njunge (2013) argues that by the time an individual reaches retirement, he/she would have accumulated savings which then becomes the main source of income during retirement. Modigliani (1986) has earlier argued that pension savings drawn down from the accumulated savings become the new source of income during retirement. This means that if an individual failed to save or invest during his/her working years, for the period after productive years, he/she will have no income to live on during retirement. Hence, to guard against the situation where one has no income to smoothen consumption, Reilly and Brown (2006) opine that individuals make provision through pension savings during their working years for the period after retirement.

According to Horioka (1984), pension saving is the primary prescription of the LCH. It is an extension of Keynes' (1936) model which expresses savings as a function of income and consumption. Consequently, as emphasized by Chikoko *et al.* (2013) and Hussein and Thirwall (1999), it is expected that an individual's pension savings increases or is accumulated when he/she maintains average consumption with increasing income during working years. It can also be deduced from the LCH that individuals go through three stages in their entire life with respect to variations in their pension savings accumulation. Reilly and Brown (2006) affirmed that individuals go through a life cycle moving from the accumulation phase to the consolidation phase and finally the retirement phase. The accumulation phase is when individuals are young and dis-save because at this stage their consumption is greater than income (Chikoko *et al.*, 2013; Tobin, 1967).

According to Shafii (2007), a similar pattern is observed at the retirement stage where accumulated savings are used for consumption smoothening. Mpofu (2014) argues that the consolidated phase is when the individual is in active service and possibly saving part of the income earned for various short- and long-term objectives such as retirement. At this stage, individuals' income will be greater than consumption causing pension savings to reach its maximum just before retirement (Yousolf & Sabri, 2017). By going through the described life stages predicted by the LCH, Brookins *et al.* (2015) posit that pension savings will depict a hump-shaped pattern. The implication is that, at younger years and older years, the dependency ratio is high, resulting in lower savings whilst during working years, the dependency ratio is low, resulting in higher savings rates.

According to the logic of the LCH, Hu and Stewert (2009) and Onyango (2014) express the view that the informal economy workers having gone through the prescribed stages in life should be in position to have accumulated enough savings for their retirement consumption since informal economy workers are said to be productive and drive many economies, as well as able to earn income. Despite the LCH remaining an essential aspect of modern-day economic theory for the study of pension savings accumulation at the micro-level, it has seen many divergent views as well. Some literatures tend to disagree with the motive behind the LCH and offer explanations for why people do not dis-save during retirement (Carroll, 1994; Deaton, 1991; Hahm & Steigerwald, 1999). Three basic reasons offered in these literatures are that individuals rather save for precautionary motives, the uncertainty concerning time of death and an inheritance motive for saving than for retirement (Lugilde *et al.*, 2017).

Deaton (1991), cited in Mpofu (2014), suggests that individuals in developing counties are often faced with borrowing constraints, uncertainties and unstable incomes. Therefore, for these individuals, the basic premise for saving becomes precautionary. For this reason, in societies where borrowing constraints and higher levels of income variance are common, Choi *et al.* (2016) observed that saving rates are likely to be higher. Conversely, as Hu and Stewert (2009) and Onyango (2014) claim, in societies where there is high income uncertainty due to reliance on informal employments coupled with political and economic uncertainties, higher savings rates are unlikely.

Another argument set forth by Cagetti (2003) is that, individuals are confronted with several risks such as fluctuations in income, ill-health and other life-threatening circumstances, often with limited or no market to insure themselves against these risks. Individuals, therefore, need to have contingency plans to self-insure against these risks. Mody, Ohnsorge and Sandri (2012) explain that one of the ways individuals could self-insure was through accumulation of a buffer stock of wealth. In line with the precautionary motive for saving, early studies by Davies (1981), Bernheim (1984), Hubbard (1984) and Weil (1994) suggested that people may save for precautionary reasons due to uncertainty and perpetuation of the span of life.

Niculescu-Aron (2012) notes that individuals in the LCH model base their decision on future events such as their future income, time of death and interest rates. In reality, these future events are uncertain and individuals would want to save for these uncertainties. Finally, Hayashi (1986) and Fan (2006) postulate that bequest, not the life-cycle, is the paramount motive for saving. The reason is that individuals experience increased utility when they leave their heirs a bequest (Havinga, 2016). The bequest model suggests that every individual has a multi-generational time limit, that is, as a child (dependent), an adult (independent) and a retired person (dependent). In the stages of dependency, a pserson may depend on bequest savings from beneficiaries (Kohl & O'Brien, 1998). However, Modigliani (1988) and Jappelli (2005) disagree, arguing that bequest represents unintended legacies from the holding of wealth for precautionary reasons by the risk-averse elderly.

Various researchers like Tobin (1967), Bernheim (1994), Beverly and Sherraden (1999) have critiqued the LCH. For example, Bernheim (1994) reports that informal workers in real life situations may lack rationality to make optimal decisions on financial goals because of fluctuations in income. Beverly and Sherraden (1999) raise doubts as many low-income households may never have earned incomes that substantially exceed their consumption needs. This is because, as Tobin (1967) noted in an earlier argument, an individual's accumulated savings begins at zero, then decreases to negative due to many commitments during early working life. This may result in debts among households in their early employment period. In this case, they may not be able to save substantially as the theory suggest.

Dupas and Robinson (2013) also offered the reason that most people in developing countries practice the traditional old age support system which obliges them to support the elderly; hence they are limited by the amount to save during their productive years. Johnson and Falkingham (1992) and Poterba and Samwick (1997) condemned the LCH as they found no evidence to suggest that assets (savings) are accumulated during mid-life and decumulated during retirement. Furthermore, Deaton (1989) and Dupas and Robinson (2013) have criticised the LCH for neglecting institutional and structural factors and concentrating primarily on economic determinants of savings. The discourse shows that there is no consensus on the significance of the LCH as the sole reason for pension savings. It is amidst these contentions in economic theories that psychological and behavioral factors have gained renewed interest in their effects on pension savings.

Theory of Planned Behaviour (TPB)

According to Armitage and Conner (2001) and Ajzen (2002), the Theory of Planned Behaviour postulates that the behaviour which people have imperfect volition control over are predictable with measures like intentions, attitude, subjective norms and perceived behavioural control (PBC). The theory has two main assumptions. The first assumes that behavioural intentions have a functional relation with attitude, subjective norm and PBC whereas the second assumes that the behavioural intention is seen as a key predictor of actual behaviour, as Ajzen (1991) and Conner & Armitage (1998) observed.

By the TPB, Ajzen *et al.* (2011) note that the attitude towards behaviour influences the intention to perform it and reflects an individual's global evaluation of the behaviour. The logic in Ajzen *et al*'s proposition is explained in two ways. It can be deduced that personal intention is shaped by specific attitudes and that broad attitude only gives a general knowledge and not the intended behaviour. Similarly, every event comes with its unique risk, implying that attitudes towards any risk affect different events with specific intentions. Macleod *et al.* (2012) found that attitudes and beliefs affected actual and intended behaviours relating to pension savings for retirement. Therefore, in relation to pension savings, Lee and Kim (2016) offered the explanation that behaviour is better measured with specific and independent attitudes such as financial risk tolerance, financial planning and financial knowledge instead of a general attitude.

Grable and Lytton (2003), Grable, Lytton, and O'Neill (2004) and Grable *et al.* (2009) define financial risk tolerance as the willingness to engage in financial behaviours with uncertain outcomes that have an identifiable negative outcome, and thereby indicates the amount of financial uncertainty someone is willing to accept. In line with the TPB, financial risk tolerance is shown to be a considerably better predictor of saving intention than general measures of attitude towards pension savings, as observed by DeVaney and Chiremba (2005) and Magendans, Gutteling & Zebel (2016). According to Devlin (2012), attitude towards pension savings is based on the level of commitment one places on financial planning. Devlin offered an explanation that people are far less enthused by the prospect of making financial plans for retirement and do not appear willing to put in a particularly large amount to that effort which affects their level of retirement savings for a comfortable retirement.

In contrast, DeVaney and Chiremba (2005) and Yang and DeVaney (2012) are of the view that those who have a positive planning horizon and future time perspective will usually react positively towards retirement savings and planning, ending up having adequate financial support during retirement. Several other studies like Ameriks, Caplin, Leahy and Tyler (2004) and Lee and Kim (2016) have confirmed that people who have higher propensity to plan financially have positive attitude towards pension savings. The argument set forth is that financial planning is an attitude and a skill that an individual possesses to make financial decisions such as borrowing and savings. These attributes inform a person's decisions to invest more assets in pension savings accounts, thus accumulating more wealth.

Finally, according to the logic of TPB, Babiarz and Robb (2013) and Mahdzan and Tabiani (2013), a person's subjective financial knowledge predicts financial attitude which, in turn, relates to more savings. Studies have attempted to show the impact of financial knowledge attitude on pension saving behaviours. Chou *et al.* (2014) report that the engagement in retirement saving and the amount saved are positively related to perceived financial knowledge. Van Rooij et al. (2011) and Yang and DeVaney (2012) found that financial knowledge as well as risk tolerance is positively associated with private retirement savings. Similarly, Van Dalen *et al.* (2010) showed that people's perceived ability in financial management is associated with the perceived adequacy of retirement savings. Ares *et al.* (2015) are also of the view that financial risk aversion is negatively associated with private retirement savings.

The implication from the TPB empirical evidence such as Kidwell and Turrisi (2004), Xiao *et al.* (2011) and Croy, Gerrans and Speelman (2012), suggest that people with subjective knowledge about a behaviour have a greater probability of performing that behaviour. While the TPB appears to establish a link between individual's intention and attitude quite accurately, various scholars like Loibl *et al.* (2011) and Heenkenda (2017) have critiqued the theory for over-focusing on individual efforts in financial buffer saving. For instance, Magendans *et al.* (2016) attacked the TPB for its enormous applications in relations to the behaviour of middle- and upper-income individuals who are eligible for retirement plans. However, according to Gordon (1980), institutions affect behavior of all age groups in relation to pension savings through programmatic and innovative arrangements provided by the Institutional Theory of Saving.

Institutional Theory of Savings

Earlier studies by Neale (1987) and Green (1991) linked the Institutional Theory of Saving as part of a larger body of institutional theory emphasising that institutions shape and give meaning to individual behaviour. However, Sherraden (1991) and Beverly and Sherraden (1999) formulated the Institutional Theory of Savings by arguing that an individual's financial or real asset accumulation is dependent upon the access, incentives, information, facilitation, expectation, restrictions and security afforded by institutions. Further, Beverly *et al.* (2008) explained the institutional theory in stimulating savings accumulation by emphasising the role of institutions in establishing formal and informal relationships with low-income workers. According to Sherraden (1990; 1991), these relationships are guided and influenced by formal laws and regulations, financial enterprises and financial products which motivate workers to save and create pension wealth.

Schreiner and Sherraden (2007), from a neoclassical economic perspective, observed that institutions reduce the cost of saving. Similarly, Thaler (2000) noted from a behavioural economic perspective that institutions reduce the need for cognitive processing and self-control on the part of individuals. These emphasize the roles of institutions in simplifying processes to motivate people to save. For example, Han and Sherraden (2007) observed that when firms automatically deposit a portion of income into a retirement account, unless the employee opts out, institutions may reduce transaction costs to close to zero and eliminate the need for cognitive processing. In this case, the institution is doing all the choosing and acting, and the individual is essentially passive.

According to Hu and Stewart (2009), the institutional theory also states that the expectations communicated by savings programmes, such as goals and targets, have impact on savings. Sherraden (2010) argued that making it easier to open an account or reducing the fees associated with maintaining an account is important for low-income account holders who may be unable to meet minimum balance requirements. Similarly, Beverly, Moore and Schreiner (2003) observe that savings programmes that provide facilitation or simplify the savings process, such as automatic enrolment and direct deposit, increase savings rates. The theory also maintains that the more information individuals have on savings options, the more likely they are to save, Njuguna and Otsola (2011) argues. Turner and Manturuk (2012) further posit that Institutional arrangements that offer incentives for savings, such as micro savings schemes, also increase individuals' motivation for savings.

Beverly *et al.* (2008) acknowledge that institutional efforts in the provision of saving schemes increase savings account openings among low-income households. Sherraden *et al.* (2005) further point out that participants in saving schemes often see the scheme goal for saving as a motivation to save more. Also, Bernheim and Garret (1996) claim that employees who are provided with financial education have been seen to have higher participation levels in pension plans. These evidences demonstrate the key roles that financial institutions play in structuring access to savings programmes for low-income households, as Sherraden (1991) clearly observes.

Institutional Theory of Saving, thus, provides an explanation of how individuals and institutions interact for pension savings accumulation. However, Han and Sherraden (2007) have criticized the theory for neglecting the influence of the wider environment in which retirement savings takes place. Accoring to Turner and Manturuk (2012), this wider environment is shaped by social policy and an individual's position in the labour market. By ignoring these external influences, it becomes easier to blame the individual for failing to save for a better life after retiring from work. This situation is explained by the Activity Theory of Aging which lays emphasis on the individual's responsibility to save for a satisfied standard of living after retirement (Amaike, 2016).

Activity Theory of Aging

According to Havighurst, Neugarten and Tobin (1963) and Lange and Grossman (2006), the Activity Theory of Aging contends that having a satisfying late-life is dependent on the activities a person engaged in and roles he played. Lemon, Bengtson and Peterson (1972) aregue that the essence of the theory is that there is a positive relationship between activity and life satisfaction and that the greater the role loss, the lower the life satisfaction. This suggests that participation in discretionary/informal activities is crucial for psychosocial health and well-being (aspects of quality of life) (Winstead *et al.*, 2017). As such, Moody (2012) and Novak (2012) concur that informal economy workers' involvement in income-earning activities and MPS is necessary to having a better quality of life and a satisfying late-life.

Despite the ATA application in gerontology literature such as Moody (2012), Novak (2012) and Amaike (2016), to encourage pension saving, its main criticism is that it does not explain what sort of activities are linked to life satisfaction. Rather, as Tallmer and Kutner (1970) and Neugarten, Havighurst and Tobin (1961) observed, the theory lays emphasis on the importance of social role participation leading to positive adjustment to old age. This enabled Birren and Schroots (2001) to assume that activities that lead to life satisfuction were associated with psychological health, physical capability, finance and access to resources.

Critique of the Theories in the Ghanaian Context

One of the fundamental assumptions of the LCH, according to Njunge (2013), is that income is continuous over time and drops to zero when an individual reaches retirement. This suggests that retirement age is crucial for one to start enjoying benefits accruing from pension savings. The applicability of this assumption seems to work only in the formal economy as many studies on retirement income focus on formal workers (Ares *et al.*, 2015; Agunga *et al.*, 2017; Magendans *et al.*, 2016). In the United Kingdom, Baker (2009) reported that people are expected to retire before the state pension age of 65. This occurrence is not different from what pertains in Ghana. The Act 766 which founded pension delivery in Ghana also appears to be driven by the assumptions

LCH. The Act 766 stipulates a compulsory retirement age of sixty years or a voluntary retirement age of fifty-five years.

These retirement age limits anticipated by the LCH is inconsistent with working arrangements that prevails in the informal economy of Ghana. Osei-Boateng and Ampratwum (2011) noted that informal job is a survival strategy. Also, Kpessa (2011) observed that low and fluctuating income associated with informal jobs does not allow workers to enter and exit the labour force at any predetermined age as there are no legal and administrative arrangements to that effect. This notwithstanding, the Act 766 emphasizes that informal economy workers on voluntary pension schemes could retire at any age and enjoy their pension so long as they have contributed for a minimum of five years from the date of first contribution, or following a certification by a medical board that the contributor is incapable of any normal gainful employment by virtue of a permanent physical or mental disability (NPRA, 2015).

Previous studies (Afenyadu, 2014; Adzawla et al., 2015; Kumah et al., 2017) in Ghana have blamed the low pension saving up-take among informal economy workers to the failure of institutions. These studies were mostly founded on economic theories with no specific regard to the ITS. The ITS has not been cited in the Ghanaian context in literature, as the theory tend to favour pension wealth accumulation for informal economy workers through the provision of access, incentives, information, facilitation, expectation, restriction and security afforded by institutions (Beverly & Sherraden, 1999; Sherraden, 1991). Similarly, no study has applied the TPB and the ATA in the Ghanaian context with respect to pension saving and retirement income adequacy for informal economy workers. These theories would be of relevance for informal economy workers in Ghana as they profess positive financial attitude towards pension saving in active life for a satisfied quality of life in retirement (Chou *et al*., 2014; Moody, 2012).

Conceptual Issues

The main concepts reviewed include pension schemes, micro pension saving schemes, livelihoods, income adequacy and satisfaction in quality of life after retirement. The rest of the conepts examined are informal sector and factors afftecting informal sector pension saving. Among the factors examined are economic factors, socio-demographic factors, psychological and behavioral factors and institutional factors.

Pension Schemes

Fabbro (2010) indicated with certainty that every worker wants to have an amount of money for consumption after retirement. This could be achieved by saving or investing during working life through a financial vehicle called pension scheme. The terms pension scheme, retirement income maintenance and social insurance are all related words that refer to income earned by a person during the time he or she is not working, according to Wang *et al*. (2014). Mitchell and Fields (1996) and Rofman *et al*. (2012) described pension scheme as a contract for annuity payment to an employee who retires from work after reaching a prescribed age.

According to Agbobli (2010), Pension schemes are not only meant for formal employees, but also that informal workers use pension schemes as a long-term investment vehicle which converts their accumulated savings kept in pension funds to pension income for retirement purposes. The Organization for Economic Co-operation and Development [OECD] (2005) postulate that these pension funds are recognised by law and entail a pool of financial assets contributed by persons exclusively to finance pension plan benefit. In addition, the ultimate objectives of pension schemes are basically to smoothen consumption of the elderly, especially to protect them against the risk that consumption will drop when their income ceases and also to protect them against the risk of old age poverty, as Mackellar (2009) and Blake, Cannon and Tonks (2010) argue to that effect.

Accoding to Perotti and Schwienbacher (2006), the delivery of pension schemes is led by the state but permits private provision in a context where formal arrangements are considered insufficient. On this, Lee and Pocock (2007) and Aidt *et al*. (2008) clearly agree on the view that State-led pension schemes include public pension, social security schemes, social insurance, contractual savings schemes, inter-generational support and welfare schemes meant to improve the lives of the aged and invalid by smoothening their consumption when they have retired from other economic and social distress.

Rofman *et al*. (2012) posit that the private pension provision is a type of occupational scheme which is personal in nature where government does not play any role in paying pension benefits. According to Adenutsi (2009) and

Agbobli (2010), the employer creates a pension scheme for its workers and they both enjoy some advantage with respect to taxation. Over the last decade, however, Mackellar (2009) and Wang *et al.* (2014) have argued that pension schemes throughout the world have seen some major reforms. The changing trend in pension schemes, according to the World Bank (2008), has been driven by pressures of global population aging, the erosion of informal and traditional family support systems and weaknesses in the governance and administration of existing pension systems.

Other sources of retirement income have been stressed by changes in work and family patterns, including the increasing participation of women in formal employment, rising divorce rates, diminishing job stability and increases in local and international labour migration, as Mitchell and Fields (1996) observed. As a result of these, World Bank (2008) expresses that policy-makers have repositioned and reclassified pension schemes to ensure adequacy and sustainability of retirement income.

Before the adoption of the World Bank's new pension systems design, Baldwin (1910) categorised the then existing scheme of old age pensions, insurance, or annuities under six main types: universal non-contributory pension schemes, partial non-contributory schemes, compulsory contributory insurance with state subsidy, voluntary contributory insurance with state subsidy, annuity schemes under public administration and voluntary insurance under private management. These classifications, however, looked inadequate in addressing the steady increase in human longevity and subsequent increase in the ageing population leading to several of them collapsing (Baranoff, 2004; Davis, 2002).

Subsequently, the World Bank (1994) further designed and reclassified pension schemes into three main dimensions. The first is either voluntary or mandatory. Secondly, a scheme may be funded or pay-as-you-go (PAYG or PAYGO). For the third dimension, according to Gillingham and Kanda (2001), a pension plan can be either Defined Contributory (DC) or Defined Benefit (DB). Rejda (2011) is of the view that the funded scheme invests the contributions of current workers to cover the benefit that they will receive upon retirement. The PAYG schemes rely on inter-generational transfers. That is, current workers' contributions directly pay the benefits of today's pensioners, as Giannadda (2007) observed.

In the case of a DC scheme, Trieschmann et al. (2005) argue that a worker's contribution and retirement benefit are specified using a formula which takes into consideration the worker's age, earnings, contribution rate, investment returns and normal retirement age. On the other hand, in a DB scheme, as Dave (2006) clearly observes, a worker's retirement benefit is guaranteed by the employer and determined by the worker's pre-retirement salary, years of service, level of wages and others. The hybrid of the Defined Benefit and the Defined Contribution schemes form another classification of pension scheme, according to World Bank (2001). On this, Mackellar (2009) posits that over half of OECD pension systems are of the defined-benefit variety as are most systems in North Africa, the Middle East, half of Eastern Europe and Central Asia. The Defined Contribution system is popular in about half of Eastern European and Central Asian countries.

According to Rejda (2011), many of the pension reforms are engineered by international organisations and labour unions. Wang *et al.* (2014) argue that the reforms generally aim at addressing the inadequacies in retirement benefits and to provide a framework within which emerging issues in retirement systems can be assessed. Some of the known organisations that have led the front for a multi-pillar approach to pension provision include the World Bank, the International Labour Organization (ILO), the Geneva Association and the International Monetary Fund (IMF) (The Geneva Association, 2012; Gillion *et al.*, 2000; World Bank, 2008). The multi-pillar approach pension system design, according to World Bank (2008), is the modern approach to funding state pension and other occupational as well as private pension schemes. This pension system is pioneered by the World Bank and the International Labour Organization (ILO). The multi-pillar approach has gained wide usage because of its fairness and inclusiveness.

According to Ostaszewski (2012), there are five pillars in this pension system, starting from the "zero pillar" to the "fourth pillar". The "zero pillar" scheme, Holzmann, Hinz and Dorfman (2008) observes, is a non-contributory, mean-tested programme financed by the state whereas the "first and second pillars" are DB and DC schemes respectively. The "third pillar" scheme is distinguished by its voluntary nature and is purposely designed to encourage both formal and informal workers to save for retirement. According to World

Bank (2008), variant to the first three pension pillars is the "fourth pillar." It is non-financial support provided by family and other social programmes in the form of healthcare, housing, clothing and food.

Out of the five multi-pillar pension schemes, Gillion *et al.* (2000) postulate that the International Labor Organization (ILO), World Bank, International Monetary Fund (IMF), International Social Security Association (ISSA) and the European Commission proposed a three-tier pension scheme which is partially privatised. World Bank (1994) and Hinz *et al.* (2005) concur that the proposal was to avert an impending crunch of old-age security systems. The three-tier pension scheme, according to World Bank (1994) and Holzmann (1999), offer a unique opportunity for developed countries to mitigate the budgetary implications of ageing on the population as well as for developing countries and transition countries to generate new resources to promote the social sphere.

Muller (2001) described this new pension approach as the accepted view of pension. It consists essentially of three different tiers. The first tier provides a minimum pension to all pensioners and can be PAYG financed. According to Holzmann *et al.* (2008), the second tier is a privately managed mandatory funded scheme with individualised savings accounts. World Bank (2008) explains that a third tier with a voluntary private pension can be added to allow individuals to choose how to share their income over their lifetime to provide for additional savings and insurance and generate economic growth.

Augusztinovics (2002) stipulated that the three-tier approach is more focused on promoting economic growth and better provision of old age security. The three-tier approach is, thus, seen by Wang *et al.* (2012) as one that can provide the basic coverage for all pensioners, particularly the third-tier which caters for the numerous informal workers left outside the pension provision systems. To Deacon, Hulse and Stubbs (1997), the three-tier pension model is now being practiced in several countries including African, Latin American, Central and Eastern European countries. Hinz *et al.* (2005) claim that the privately-run second and third tiers have additional benefits which make them the most preferred. Some of the potential benefits include higher pension payments compared to the PAYG system, low tax and better interest rates on savings, as Mackellar (2009) observed. A typical model of a third-tier pension scheme is the new micro pension saving scheme.

Micro Pension Saving Scheme

According to Mukherjee (2014) and Sahu (2014), Micro Pension Saving (MPS) scheme refers to any financial plan to keep up with old age income or consumption. Asher and Shankar (2007) and Shankar and Asher (2009) concur that it is a voluntary defined contribution for low-income earners whereby their savings are invested through financial and capital markets by a professional fund manager over an extended period of time and, at some pre-arranged age, the funds are paid, either in a lump sum, a phased withdrawal, annuity or some combination of these options.

Njuguna (2012) reiterates that micro pension schemes support minor, consistent and sustainable investments of low-income recipients and make available to them a consistent stream of income at old age and can, therefore, be seen as a smart procedure of savings and insurance. According to Shankar and Asher (2009), a micro pension plan insulates low-income workers from income insecurity during old age and hedges their savings from investment and inflationary risks. Mackellar (2009) observes that micro pension contributes to the investors' economic security as their productivity and income-generating capacity decreases. Sinha (2009) expresses the view that this pension scheme fosters participants' financial independence in their old age and lowers the costs of keeping joint families together for their children. Gianadda (2007) further claims it reduces the vulnerability of old people by diversifying the assets on which they rely.

According to Arunachalam (2007), and Shankar and Asher (2009), a micro pension scheme, compared to other pension schemes, has the primary objectives of reducing poverty, eliminating the risk of falling living standards at old age and protecting the elderly from economic and social crisis. Uthira and Manohar (2009) posit that it ensures large coverage of the low-income population due to its infrastructure that support mass registration, contribution collection and database management as well as flexibility of contributions and access to benefits. For instance, Kibet, Mutai, Ouma, Ouma, and Owuor (2009) observe that the flexibility of contributions encourages contribution of small but frequent amounts resulting in savings accumulation for the future. In addition, a lot of people are inspired to enrol, which further reduces the transaction and administrative costs, as Dupas and Robinson (2009) explained.

Comparatively, according to Dorkenoo (2006), the mandatory state-led pension scheme is criticized for its weak management and political abuse. Sinha (2009) argues that this has led to a high demand for micro pension schemes designed to target the unorganised sector. In addition, Mackellar (2009) argues that participation in micro pension schemes is high because the scheme addresses governance, administrative design and efficiency issues. Hu and Stewart (2009) are of the view that the informal economy workers, therefore, respond to micro pension schemes because they enjoy flexible contribution rates, voluntary contributions, monetary incentives and financial education. Furthermore, Sahu (2014) argues that the scheme is characterised by economic viability, adequate returns and customised features for participants.

According to Charmes (2011), the benefits notwithstanding, micro pension schemes are fraught with some challenges. Informal sector workers have their traditional mode of meeting their retirement needs resulting in low participation in micro pension schemes. Kibet *et al.* (2009) are of the view that saving for retirement is not their priority because their retirement savings is stored in precious metals such as gold. Odundo (2008) and Suwanrada (2009) further concur that others buy land or invest in their dependents for their long-term financial security, especially for the elderly in old age.

Additionally, Dupas and Robinson (2009) argue that micro pension schemes are prone to suffer inconsistent contribution rates which make it difficult for the schemes to be maintained effectively. Sakthivel and Joddar (2006) as well as Uthira and Manohar (2009) attribute the situation to the poor affordability and lack of institutional mechanism to subsidise pension contribution to these low-income workers. Other challenges pervasive in the delivery of micro pension to informal economy workers, according to Sarkar (2004) and Bertranou (2007), include high administrative cost, high rate of financial illiteracy, inadequate financial institutions, inadequate governmental support and a lack of contribution capacity as most workers in the informal sector are low-income earners.

Moreover, since informal economy workers are unorganised, unregulated and untaxed, according to Dupas and Robinson (2009), most formal pension schemes find them ineligible. As a result, they do not enjoy any legal or social protection that their counterparts in the formal sector have, as Chen (2008) and Van-Ginneken (2009) observed. On the scheme itself, Shanker and Asher (2009) identified that micro pension schemes are hindered by funds which determine the types of scheme to enrol, whether Defined Benefit (DB) or Defined Contribution (DC). The design and features of the scheme is another challenge that limits participation. For instance, according to McCord and Buczkowski (2004), Ross (2004) and Bhattacharya (2008), when contributions are volatile, together with sporadic deposits and flexible withdrawals, it exposes the scheme to the risk of bankruptcy.

Few strategies have been proposed in the literature toward addressing challenges of enrolling informal sector workers to pension schemes. According to Sinha (2009) and Uthira and Manohar (2009), some of these strategies include awareness creation, marketing of the micro pension products, portability of the scheme design, education of the informal sector workers on pension funds and state guarantee that ensures protection of participants' funds. Hu and Stewart (2009) also assert that providing monetary incentives to participants encourages contribution of small frequent amounts and compulsion. In addition, Dulleman and Bruijn (2011) emphasised the role of providers to focus on the supply of long-term products in order to earn higher interest, cover inflation and minimise risks. Uthira and Manohar (2009) argue for the supply of micro pension products through multiple agencies in order to ensure inexpensive portability and professional management of funds.

According to Shanker and Asher (2009), micro pension schemes that offer low or no minimum contribution rates, convenient door-to-door collection of contributions and insulation of the participants against volatility in investment growth encourage other low-income persons to join. Bhattacharya (2008) suggests a system with individual accounts where individual's contributions are pooled together in addition to allowing opt-outs during periods when participants are not able to contribute. However, Kwena and Turner (2013) advocate for the sustainability of the schemes' contribution through continuous engagement in livelihood activities to earn income for consumption and saving.

Livelihoods

According to Carney (1998), livelihood comprises the capabilities, assets and activities required as a means of living. Livelihoods, as Rennie and Singh (1996) observe, involve people's means of gaining access to adequate stocks and flows of resources to meet their basic needs. Chambers and Conway (1991) are of the view that livelihood depicts a means of gaining a living. These clarifications suggest that when one makes conscious effort to engage in livelihood activities, it is possible to earn enough income from which pension saving can be made for better quality of life after retirement.

The benefit of having a livelihood activity that can generate enough income for pension saving during active life is crucial in guaranteeing quality of life in retirement. Studies like Moen (2001), Moody (2012) and Amaike (2016) have found that the livelihoods one engages in the course of active life are predictors of income security and well-being in later life. In advanced countries, Novak (2012) notes that livelihoods do not only influence access to material resources but also affect every aspect of life after retirement. Therefore, inadequate livelihoods have the potential of increasing vulnerability and undermining the quality of life after active years, Togonu- Bickersteth (2014) clearly observes.

Ajala (2006) notes that the case for informal economy workers is worrying as their livelihoods are threatened in several ways. Togonu-Bickersteth (2014) explains that their plight is exacerbated by the absence of formal social security which increases their vulnerability to poverty after retiring. However, the introduction of MPS schemes, as Obashoro (2010) clearly opines, bridges the inequality gap in pension saving delivery by creating unique platforms for informal workers to save part of their income earned from their livelihood activities during active life. This makes livelihoods in the life cycle important in MPS delivery and quality of life in retirement.

Amaike (2016) acknowledges that preserving livelihoods throughout retirement entails how assets and capabilities are utilized, enhanced and maintained over time. According to Asong *et al.* (2002), failure to sustain retirement livelihoods would expose retirees to stresses and shocks, leading to poverty. Hence, Help Age International (2006) argued for safety nets in MPS schemes to reduce livelihood vulnerability after retirement. In essence, MPS provides agency for informal workers to gain livelihoods after active work through access to pension savings to offset stresses, ease shocks, and meet contingencies in retirement.

According to Carney (1998), Ellis (1998) and Francis (2000), livelihoods have been a source of extensive debate among scholars and development experts because of their effect on the living conditions of individuals and groups. Scholars such as Ogunbameru (2000), Novak (2012), Amaike and Olurode (2014) and Togonu-Bickersteth (2014) found that the magnitude of livelihood earned in retirement was dependent on socioeconomic status, sex, age, previous work, employment sector, access to alternative resources, property ownership or assets and retirement age. Novak (2012) and Amaike (2013) also found that livelihoods play a significant role in determining the quality of life of retired workers. This means that inadequate retirement livelihoods may not sustain living conditions and thus undermine the quality of life of retired workers.

Income Adequacy and Satisfaction in Quality of Life after Retirement

Moore and Mitchell (1997), Engen *et al.* (1999) and Poterba (2014) concur that income adequacy and income security have been used interchangeably in old-age literature to represent an adequate level of retirement resources. Income security/adequacy does not only represent having an adequate level of income but also relate to assurances and expectations about receiving an income now and in the future. For many workers, Disney (1996) and Barrientos (2007) are explicitly of the view that contributory pension schemes provide income security in old age and help prevent workers from falling or remaining in poverty.

According to Lloyd (2015), there are two classes of argument about the association of adequate income levels and satisfaction about quality of life. The relativists, as Scholz *et al.* (2006) explain, argued that people are happy if they are relatively richer than their neighbours. Easterlin (1974) believes that the foundation of this argument is that income affects subjective well-being (SWB), but only relative to other changeable factors such as expectations, adaptation levels and social comparisons. The implication is that an increase in national income will have no significant effect on subjective well-being because the population position relative to each other will remain the same.

Veenhoven (1988), from the absolutist point of view, on the contrary, argued that income affects SWB by allowing individuals to meet certain universal needs, though once these needs are met, income becomes less important for SWB due to declining marginal utility of money. An empirical study by Lewis (2014) supported Veenhoven's argument. Lewis established that individuals in households with higher incomes report higher life satisfaction and happiness as well as lower anxiety, hence holding other factors fixed. However, higher household income is not significantly related to people's sense that the things they do in life are worthwhile.

Other empirical studies like Panis (2004) and Nyce and Quade (2012) have established positive association between retirement income levels and satisfaction about quality of life in retirement. Boodoo *et al.* (2014) found that absolute personal income has a small positive relationship with life satisfaction but only for retirees and not for the non-retired, and the relationship between relative income and happiness is much stronger for the non-retired than retired persons. Bender's (2012) study found that having no pension decreased the probability of being in the highest satisfaction category compared to those with only DB pensions. Just having a DC pension, according to Lloyd (2015), reduced the probability of being in the highest satisfaction category but there was no statistically significant difference to those with just DB plans.

Several authors have come up with standards to evaluate adequacy of retirement income. First, the use of the LCH theoretical framework set the basis to judge retirement income adequacy, as Banks, Blundell and Tanner (1998) and

Bernheim, Garrett and Maki (2001) argue. The second and most common measure of relative well-being after retirement, according to OECD (2013), is the income replacement rate. Binswanger and Schunk (2012) explain that this is defined as ratio of some post-retirement income to some pre-retirement income. The third approach is a social standard for adequacy.

In the third approach, Haveman, Holden, Wolfe and Romanov (2007) and Caminada, Goudswaard and Koster (2012), postulate that retirement income is considered adequate when it is equal to or greater than poverty levels of income. There are three ways of setting the poverty line. Caminada *et al.* (2012) clearly posit that these include an absolute standard, a relative standard and a subjective standard. Consistent with Netuveli, Wiggins, Montgomer and Blane (2006), the latter is applied in the present study for its relative simplicity in measuring and explaining standard of living. The subjective poverty line is, thus, based on respondents' answers to questions regarding what they consider to be an adequate standard of living.

From the foregoing assertions, it can be accurately argued that quality of life is a multidisciplinary concept that is used interchangeably with living conditions, standard of living, and well-being, as Lewis (2014) and Lloyd (2015) concur. The concept includes economic, social, and physical measures (Ferriss, 2004; Mitchell & Kemp, 2000). According to Mitchell and Kemp (2000) and Caminada *et al.* (2012), the phrase "quality of life" has been widely adapted in both subjective and objective measures, although subjective measures are considered to be better indicators of quality of life. While there is no standard accepted measure for quality of life, as Arnold (1991) clearly believes, Ferriss (2004) notes that, in the social sciences, subjective quality of life has been measured in terms of happiness, life satisfaction, and well-being.

Empirical examinations found a positive association between level of perceived retirement income and satisfaction about quality of life after retirement (Banks *et al.*, 1998; Bloom *et al.*, 2003; MacDonald *et al.*, 2016; Mason & Lee, 2013). Butrica and Schaner (2005), Blanchflower and Oswald (2007), Bender (2012) and Asebedo and Seay (2014), concur that beside income, other factors including age, sex, marital status, employment status and psychological attributes showed significant association with variations in well-being in retirement. Therefore, WHO (2014), Agravat and Kaplelach (2017) and Lugide *et al.* (2017) are of the view that providing retirement income adequacy and improved well-being to the large segment of informal sector workers is crucial for many governments.

Informal Sector

There are diverse schools of thoughts about the definition of informal sector by various researchers. According to the Dualist school, informal sector is largely self-employed persons who belong to a less advantaged dualistic or segmented labour market which is independent of government regulation (ILO, 1972; Sethuraman, 1976; Tokman, 1978). They argue that informal operators are excluded from modern economic opportunities due to imbalances between people's skills and modern industrial employment. Structuralists, on the other hand, according to Moser (1978) and Castells and Portes (1989), contend that the nature of capitalism or capitalist growth drives informality and that the informal economy is seen as subordinated micro enterprises where workers must serve to reduce input and labour costs and, thereby, increase the competitiveness of large capitalist firms.

Two other schools (the Legalist and the Voluntarist) distinguished informal sector participation based on legal avoidance and free option of choosing to operate informal. De Soto (2000), from the legalist point of view, reasoned that a hostile legal system leads the self-employed to operate informally in order to avoid the costs, time and effort of formal registration. According to Chen (2012), the Voluntarist school perceives informal operators as micro entrepreneurs who deliberately seek to avoid regulations and taxation but, unlike the legalist school, does not blame the cumbersome registration procedures.

Extant literature further discussed three forms of ideas on informal work. The first idea, according to La-Porta and Shleifer (2014), holds that informal markets are associated with low productivity and the absence of formal jobs which forces them to work informally. The second idea suggests that workers choose to be informal because of their background, wages, and benefits, as Pratap and Quintin (2006) and Bucheli and Ceni (2010) concur. The hybrid of the first and second captured by Galiani and Weinschelbaum (2007) and Ceni (2013) argue that people choose to work informally while others are propelled to work informally due to lack of formal jobs. From the forgone perspectives, three terms are used interchangeably: the informal sector, informal employment and the informal economy. The literature, however, distinguished all three terms which put together form the broad base of the workforce and the economy (Chen, 2012).

The International Conference of Labour Statisticians (ICLS) in 2003 adopted an international statistical definition of the informal sector to refer to employment and production that takes place in unincorporated small and/or unregistered enterprises (ICLS, 2003). While informal employment refers to all unregulated jobs that have little or no protection by labour standards where workers are denied labour rights, social security and lack organisation and representation, the informal economy encompasses all units, activities and workers so defined and the output from them (ILO, 2013; Razavi, Arza, Braunstein, Cook, & Goulding, 2012; Tessier, Plaza, Behrendt, Bonnet & Guibault, 2013).

Schneider (2012) defines the informal sector as market-based economic activities that are concealed from public authorities to avoid paying taxes and social security contributions and, more generally, elude regulation. The informal sector is defined as informal employment both within and outside the informal sector. This clarification is important given the heterogeneous and complex nature of the informal sector (Maloney, 2004). In addition, informal employment is categorised into self-employment and wage employment. According to Vanek, Chen, Hussmanns, Heintz and Carre (2012), informal self-employment includes employers and self-employed workers in informal enterprises, family workers and members of informal producers' cooperatives.

Informal wage employment, on the other hand, according to ILO (2013), is made up of employees of informal enterprises, casual labourers, part-time workers, paid domestic workers, contract workers and unregistered workers.

From the foregoing observation, it can be asserted that the broad categories of informal employment serve as the basis for defining an informal worker for the study. According to the ILO (2005), informal sector workers are generally those with low-incomes or wages working in very small unregistered companies or the household sector, often on a part-time basis in industries such as agriculture, construction and services. Other peculiarities of informal sector workers, according to ILO (1993), is their frequent change in jobs, absence of official protection and recognition, non-coverage by minimum wage legislation and social security system, absence of trade union organisation, little job security and no fringe benefits from institutional sources. In addition, Tessier *et al.* (2013) claim they are often illiterate and unfamiliar with the concept of pensions as they frequently opt for self-employment with their employment contracts often of a temporary nature.

For the general economy, Ceni (2017) posits that the informal sector plays a key role in providing jobs, boosting entrepreneurial activities, alleviating poverty and adding to economic development. According to Onyango (2014), the World Bank approximates the scope of the informal labour sector to be 4-6 percent in high-income nations and over 50 percent in low-income nations. Also, the World Bank (2010) observes that between half and three-fourths of non-agricultural employment in developing countries is informal, although the degree of informality varies across countries and regions. In Africa and South Asia, Vanek *et al.* (2012) notes that informal work was estimated to account for around 82 percent of non-agriculture employment. The World Bank (2010) believes that the inclusion of data on informal employment in agriculture would increase the proportion of informal employment in agricultural regions, especially in sub-Saharan Africa and South Asia.

Holmes and Scott (2016) acknowledged that informal sector workers are faced with high levels of risks due to the nature of their employment. According to Chen (2012), they have little or no protection against risks or uncertainties associated with income earned from work. However, by the logic of the LCH, Modigliani (2001) and Chipote and Tsegaye (2014) concur that income earners save a fraction of their income for later consumption and for contingency moments. Informal sector workers are, therefore, according to Mody *et al.* (2012) and Zandberg (2015), likely to save more in the present than to borrow at a high interest rate in the future to smoothen consumption when income ceases during difficult times or retirement. In furtherance of this argument, Ceni (2017) implied that higher levels of informality have impacts on benefits that workers receive, especially their pension benefits.

From the foregoing arguments, it can be seen that micro pension schemes offer a safety net for informal workers to save as they go through life-cycle risks. This is made possible as explained in the institutional theory of savings as professed by Schreiner and Sherraden (2007). According to Forteza *et al.* (2009), Bucheli *et al.* (2010) and Bosch and Manacorda (2012), the institutional arrangements offered in micro pension schemes remove all forms of barriers that constraint income-risk informal workers from participating in social security schemes as those applied to formal sector workers. Floro and Meurs (2013) argue that institutional processes improve access to micro pension schemes, which in many cases, eligibility and contributory capacity have been used to exclude informal workers.

Furthermore, low-incomes and wages are known to be associated with informal work, according to Shankar & Asher (2009) and Uthira & Manohar (2009). Beverly and Sherraden (1999) explained that informal workers find institutionalised pension-savings schemes convenient and with decreased transaction costs making it more likely for them to save. As part of the scheme arrangement, informal participants are given financial education on how to save which Schreiner *et al.* (2002) and Lusardi (2003) found to have a positive effect on savings and saving behaviours. Also, institutions that provide pension saving to informal workers are known for their facilitation and incentives aimed at encouraging savings. For instance, Clancy *et al.* (2006) and Schreiner and Sherraden (2007) believed that automatic enrolment and automatic tax-free deposits, as well as rebates are found to have significant positive effects on saving outcomes in pension.

Due to the low-income of informal sector workers, Han and Sherraden (2007) posit that informal workers often lack self-control and the ability to save for pension. These behavioural deficiencies, according to Beverly *et al.* (2008), are psychological concepts which are corrected by the institutional theory of savings that drives micro pension schemes. To Ssewamala and Sherraden (2004), micro pension schemes establish restrictions that limit these behavioural deficiencies so that saving goals can be achieved. Above all, Mason *et al.* (2006) claim that the security provided by micro pension schemes is found to influence participation and saving outcomes.

However, inasmuch as the evidence shows the link between informal workers and their participation in micro pension schemes, Onyango (2014) believes that the level of participation in social security scheme is said to be unsatisfactory. Globally, the working population that is covered by social security old age benefit schemes is only about 26 percent (ILO, 2010). About 30 percent of this population is legally covered by old age pension scheme in Africa as at 2010, indicating extremely low effective coverage. According to ILO (2010), the coverage in sub-Sahara Africa is just about five percent, while in North Africa, it is about 20 percent.

In many countries where the level of informal employment is high, social security coverage is often limited to the minority formal workers. Hu and Stewart (2009) observed that most pension systems focused more on the protection of formal sector employees against the risks associated with old age, whereas most workers engaged in the informal sector, particularly in developing countries, are left out of the structured pension arrangements. According to ILO (2014), approximately, 73 percent of the global population remains uncovered by adequate social protection schemes and contributory social insurance schemes continue to cover only a fraction of the working population. Typically, this fraction is made up of only formal sector workers in most low-income countries.

Even though the informal sector employs the largest segment of the population, ILO (2013) claims the majority of them are not covered by any social security scheme. Hence, this low coverage of the informal workers, according to ILO (2005) and Tessier *et al.* (2013), is blamed on their characteristics as well as the lack of registration or appropriate documents of most of their establishments. Mukherjee (2014) notes that this makes it difficult for governments to target them for pension schemes, and as a consequence, the circumstances surrounding their organisations threaten the social security of informal workers at old age.

Furthermore, Asher (2009) and Kpessa (2011) observe that legal and administrative issues make it difficult to extend pension schemes originally designed for formal sector employees to the informal sector due to their lower and variable cash income. According to Mackellar (2009), informal sector workers cannot make regular contributions compared to the formal workers whose contribution rates are often higher and consistent. On this, Verdera (2004) posits that due to the low-income state of informal sector workers, they may not see the relevance of pension schemes in addressing their multiple risks across the life cycle.

Also, most pension schemes, according to Hu and Stewart (2009), are tailored for formal sector workers to the neglect of informal workers even though both working groups have similar needs for loans, saving instruments and pensions. Holzmann and Jørgensen (2000) notes that the financial institutions offering pension schemes exclude those working in the informal economy on the basis of formal social risk management. Van Dalen *et al.* (2010) and Yousolf and Sabri (2017) are of the view that changes in demographic patterns, cultural behaviour and the socio-economic context of informal workers also account for their exclusion from pension schemes.

In order to mitigate these challenges and enrol informal sector workers into formal pension schemes, Goyal (2010) argues that microfinance institutions and other organisations have begun to design different micro pension schemes and micro saving plans that best fit the social and economic contexts of informal sector workers. The objective, as Mukherjee (2014) and Sahu (2014) reveal, is to expose informal sector workers to financial markets in order to save for their retirement. Uthira and Manohar (2009) observe that through the collaborative arrangements of financial institutions, micro pension schemes offer the informal workers easy, safe, and a low-cost, small contributions to savings accounts or to individual pension accounts. According to Barr and Diamond (2009), the provision of contributory pension schemes to informal workers would provide income smoothening across the life course of informal workers and insurance against old age risks for these workers.

Furthermore, Mackellar (2009) and Sinha (2009) highlight three mechanisms that can increase the enrolment of informal sector workers to pension schemes, namely flexibility of the pension scheme, tax incentives and continuous financial education. Sinha argues for a flexible pension scheme where eligibility requirement is relaxed to a level consistent with the socio-economic context of informal workers. For example, the terms of contributions, withdrawal requirements, vesting policies and requirements on governance structure of the pension fund should not be too restrictive. On this, Mackellar (2009) declares that pension schemes for informal workers should be tax-free and in addition to this, there must be other monetary incentives as part of such arrangements so as to attract informal workers and encourage pension savings.

Finally, Arunachalam (2007) believes that the continuous provision of financial education to informal sector workers who often lack knowledge on pensions in general is augured to be effective in stimulating pension savings. The United Kingdom (UK), India, China and several OECD countries are examples of countries that have succeeded in using financial education projects or campaigns to convince informal sector workers to join micro pension schemes (Asian Development Bank [ADB], 2006). Stewart (2006) went on further to reiterate that financial education plays a vital role in raising public knowledge and awareness and is potentially likely to increase pension coverage especially for those in the informal sector.

Factors affecting Informal Sector Pension Savings

The provision of pension schemes to informal workers has attracted various research attention considering debates surrounding the coverage and capacity of informal workers to participate and save enough for retirement. Several factors in literature have attempted to offer explanation for the accumulation of pension savings of these workers. In this study, the factors that affect the accumulation of pension savings for informal workers are discussed under four broad headings: economic, socio-demographic, psychological and institutional factors.

Economic Factors

Economists at different times have emphasised the effect of different economic variables in the study of pension funds. However, this study highlights the effect of labour income in the accumulation of pension savings for informal workers.

Njunge (2013) defined a person's total income as sum of all monetary income regardless of the source inclusive of all income from employment, businesses and rent. Duesenberry (1949) and Friedman (1957) believes that income proves to be a positive determinant of consumption and saving as established by both Absolute Income Hypothesis (AIH) and Permanent Income Hypothesis (PIH). According to Ahmad and Asghar (2004), a person's total income augments his/her saving level. The LCH demonstrates that individuals show a "humped" pattern of income. That is, over the course of the life cycle, as Weil (1994) and Jeppelli (2005) observe, income rises rapidly from youth, peaking somewhere in middle age and then declining significantly after retirement.

According to Agrawal, Sahoo and Dasha (2009), the implication is that as average income earned increases over the course of the life cycle, saving rates increase as well, resulting in an accumulated pension wealth to be consumed later during retirement. This holds, so long as present consumption does not exceed income at various stages of the life cycle, as Mbuthia (2011) and Mpofu (2014) argue. However, some literatures like Lihiku (2006), Abdelkhalek *et al*. (2010) and Issahaku (2011) tend to show a negative relationship between income and saving. According to Issahaku (2011), this is evidenced in populations where there are low average income and high dependency ratios. This contradiction notwithstanding, Sameroynina (2005) and Kibet *et al*. (2009) concur that income generally has a positive influence on pension savings. k

On the above, Harris, Loundes and Webster (2002) has established the fact that retirement savings become more important as income increases. Disney *et al*. (2001) identified a strong correlation between income and pension saving. McKay and Kempson (2003) confirmed income as a significant factor in retirement savings. They found that in comparison to the middle-income quintile, the top-income quintile was more likely to be saving for retirement than the bottom two quintiles. For instance, Mayhew (2003) found that most people on low-incomes do not contribute to pensions savings.

Socio-demographic Factors

According to Cigno (1992), Mohsen and Chi-Wing (2002), Demery, Duck and Dustmann (2006) and Apergis and Christou (2012), the socio-demographic structure of the population is one of the key factors that influence savings in an economy. Keynes' (1936) concept of marginal propensity to save and Friedman's (1956) theory of financial asset demand had placed a major stress on the effect of socio-demographic factors in their framework. In Keynes' general theory on employment, interest and money, it is stated that the marginal propensity to save and consume is influenced by a set of subjective and objective factors. Keynes added that the degree to which both sets of factors affect households are different with divergent socio-demographic conditions.

The set of subjective factors identified by Keynes (1936), cited in Brookins *et al.* (2015), include motives of precaution, foresight, calculation, improvement, independence, enterprise, pride and avarice. According to Chikoko *et al.* (2013), the objective factors include sets of economic variables such as income and wealth. For these sets of subjective and objective factors, sets of socio-demographic variables may be studied to quantify their effects towards behaviours on savings. With respect to this study, the effect of socio-demographic variables such as age, sex, education, type of employment and number of dependents on pension savings of informal workers are considered.

The first demographic feature highlights the age of savers as explained by some studies. Most savings models that consider demographic factors emphasis the fact that people at different ages save at different rates, affecting aggregate savings through variations in the population age structure (Bloom et al., 2007; Deaton & Paxson, 1997; Higgins & Williamson, 1997; Higgins, 1998; Kelly & Shmidt, 1996). At the heart of this is the life-cycle hypothesis which argues that economic players face negative savings when they are still young and earn zero income but realise positive savings in their industrious years. According to Apergis and Christou (2012), dis-savings are realised once more when they are old and in retirement.

The life cycle hypothesis, therefore, makes a prediction that, overall, the lower the age dependency ratio, the higher the savings rate, as Chikoko *et al.* (2013) observed. Furthermore, as the population ages and the age dependency ratio rise, Brookins *et al.* (2015) believe there should be a decline in the savings rate. According to Mbuthia (2011), the expectation is that as a nation's young dependency ratio increases, it exerts negative pressure on its savings rate since children consume without contributing positively to income just like elderly people. In addition, Horioka (2010) suggests that given that the young dependency ratio naturally drops as the population ages, the prospect is to offset, partially, the negative pressure on savings rate resulting from the growth in the old dependency ratio.

Tin (2000) confirmed the age-saving relationship postulated by the LCH and concluded that pension savings increases with age and decreases with increasing numbers of children. Bendig *et al.* (2009) found that the age of household head is positively related with household savings. McKay and Kempson (2003) also found that the proportion of the under-30 years saving for old age is relatively small. Thus, notable increases occur at the age of 30 and from 35 onwards with pension saving peaking from 45-55 years. However, Kibet *et al.* (2009) and Hafeez-ur-Rehman *et al.* (2011) found the age-saving relationship to be negatively related. As a result of the non-linear relationship between pension saving and age, Abdelkhalek *et al.* (2010) and Issahaku (2011) argue that various models testing the LCH have included the variables age and age-squared as it allows them to capture the effects of this relationship.

This current section discusses the effects of sex towards pension saving. According to Njunge (2013), the sex of a person is an important variable that is found to have a significant effect on pension savings. Chowa (2006) posits that sex plays an important role because individuals may experience various roles or processes differently based on their biological differences as women and men. It is important, therefore, as Lee and Pocock (2007) suggest, to include women and men in social science research because results for one group may not necessarily apply to the other group. The existing research on sex and savings behaviour like Le Beau, Iipinge and Conteh (2004) and Fafchamps and Quisumbing (2005) demonstrate that sex effects shape individuals' decisions and actions. According to Whitaker, Bokemeiner and Loveridge (2013), this makes sex a foundational factor in life.

Therefore, sex infiltrates identity formation, family roles, expectations and structural opportunity. Shefrin and Thaler (1988) argue that these in turn help shape attitudes and behaviours related to saving behaviour. According to Hungerford (1999), Anderson and Baland (2002) and Lee and Pocock (2007), women are perceived to save more than men, while in a study conducted by Phipps and Woolley (2008), men are perceived to save more with an increase in their earnings compared to an equivalent increase in female earnings.

With regards to pension saving, many empirical studies like Disney *et al.* (2001) and The Pensions Commission (2004) have argued that women are less likely to save for pension than men. Mayhew (2003) found that almost two-thirds of those who had never had a private pension were women. McKay and

Kempson (2003) also found that men were more likely than women to be members of occupational pension schemes from their mid-twenties onwards. Female occupational pension members were observed to peak in their mid-twenties at one in three, whereas male occupational pension membership peaked 50 percent higher and are in their mid-thirties. McKay and Kempson also found that men were more likely to have personal pensions following a similar age pattern.

Data from the Office of National Statistics - UK (2008) show that overall old age savings for men peak at 60 percent at the age of 40-44 years. For women, maximum pension contribution is slightly later and longer at 47 percent from the age of 45 to 54. The data confirms that pension savings rise rapidly during the twenties from 2-3 percent for 16 to 19-year olds to 34-35 percent for 25 to 29-year olds. Men are less likely to have higher pension savings than women during the early twenties. On the other hand, women have higher levels of private pension savings than men with 17 percent and 15 percent respectively (Baker, 2009).

Lott and Kenny (1999) and Barber and Odean (2001) found that men and women have different attitudes towards risk which impact on their level of pension saving. According to Shefrin and Thaler (1988), the reasons for the different behaviour towards savings for both sexes are explained by the psychological and behavioural theories of saving. For example, Lee and Pocock (2007) argue that women are thought to be responsible for financial matters such as paying bills and shopping. This, in the end, as Katona (1975) explains, may induce women to be more frugal than men so that in general, they save more than men. However, gender alone may not be enough to determine the level of saving without intervention from other factors such as the education level and marital status.

On the last assertion made from the foregoing observation, Tin (2000) identified a negative relationship between marital status and pension savings. The reason is linked to the number of children people have. Married couples having children will have disposable income to spend due to significant expenses involved with their children. Anderson *et al.* (2000), on one hand, found that couples are more likely to plan for retirement whereas Bank et al. (2002) found that non-pension savers are more likely to be single. McKay and Kempson (2003) found that marital status was related to general saving but had little impact on retirement saving.

Also, Education is considered one of the determinants of earnings and savings as well, as Livanos and Nunez (2016) observed. According to Wodaj (2002), it is an investment in human capital development which accounts for much of the observed variations in the income of individuals and is found to have a positive influence on savings. Hochguertel, Alessie and Soest (1997) found that better educated households invest more in long term financial assets than less educated people. They explained that higher educated people might be able to tolerate higher levels of risk compared to less educated people owing to the higher levels of income that they earned.

Furthermore, Butrica and Schaner (2005) believes that incomes of higher educated people are usually more stable compared to incomes earned by less educated people. Specific research on retirement saving like the one conducted by Joo and Grable (2000) also identified that those with higher educational attainment levels are more likely to save for retirement than those with lower education attainment levels. In addition, King and Leape (1987) suggest that educated people have better information about various investment opportunities resulting in higher investment levels.

On the contrary to the above observation, there exists a negative relationship between pension savings and education as has been observed by various scholars. According to Ahmad and Asghar (2004), educated parents pay more attention to the quality of education of their children. As such, they tend to spend more on their education and, therefore, save less. Tin (2000) shares this opinion, indicating that some educated people may have lower interest in saving as explained by Ahmad and Asghar (2004), confirming that the relationship between levels of education and savings behaviour is not always positive.

According to Kibet *et al.* (2009), there are reasons for savings varying from one employment type to another. Particularly, their study included employment type to know whether being informally employed increases or reduces the probability of pension savings. There are other studies to show that employment type or status determines one's ability to patronise private pension schemes. For instance, McKay and Kempson (2003) have indicated that fewer than one in ten of those not in paid work, including the unemployed, students and those looking after the family home, save for old age compared with two-thirds of employees.

Amongst those working, Baker (2009) strongly argues that employees are more likely to have private pensions than the self-employed (65% and 50% respectively), and full-time workers are also more likely to have private pension than part-time workers (74% and 37% respectively). Mayhew (2003) indicated that the industry sector of an employee, whether public or private, determines pension scheme enrolment. Mayhew's (2003) observation was that all public sector workers have private pension cover in comparison to just two-thirds of workers in the private sector.

Psychological and Behavioural Factors

Under the psychological and behavioural factors, three key variables that describe people's attitude toward saving are discussed. The variables are financial knowledge, financial planning and financial risk tolerance. These variables are explained from both psychological and behavioural saving theoretical perspectives by researchers such as Macleod *et al.* (2012), Chou *et al.* (2014) and Lee and Kim (2016).

According to Worthington, (2006), Remund (2010) and Lusardi and Mitchell (2013), financial knowledge refers to the financial understanding an individual possesses to make choices and proper decisions concerning his/her finances, wealth acquisition, pensions and other finances. From the psychological concept of TPB, Babiarz and Robb (2013) and Mahdzan and

Tabiani (2013) argue that a person's financial knowledge predicts financial attitude which, in turn, relates to more savings. Chou *et al.* (2014) tend to support the positive relationship between financial knowledge attitudes an individual possesses and its impact on pension savings behaviours. Bacova and Kostovicova (2018) used five psychological measurers of financial knowledge to predict retirement saving and found that higher level of trust, personal competence and engagement, and lower levels of task complexity and emotional loads lead to higher retirement saving rates.

Previous studies like Van Rooij, Lusardi and Alessie (2011) and Balaz (2012) used computational capability as measure of financial knowledge. Van Rooij *et al.* (2011), defined computational capability as one's understanding about inflation and purchasing power; calculation of compound interest, risk diversification and investment return. According to Gathergood and Disney (2013), financial knowledge also has a positive effect on other forms of actual behaviour that can improve retirement resources, such as long-term investment, not borrowing against pension fund and avoiding consumer credit. Agunga, Jagongo and Ndede (2017) showed that there is a statistically significant effect of computation capability of retirement benefit on pension saving with 95 percent level of confidence. In general, Klontz *et al.* (2011) believe that attitudes, emotions, and beliefs (whether accurate or not) represent factors that drive much of one's financial behaviours.

Another argument set forth by Lee and Kim (2016) is that financial planning is an attitude and a skill that an individual possesses to make financial decisions such as borrowing and savings. These attributes inform a person's decisions to invest more assets in their pension savings accounts, thereby accumulating more wealth. Ortega (2008) mentions that financial planning is a technique that meets a set of procedures, instruments and objectives in order to establish the economic and financial forecasts and goals of an individual. This technique, as Masilo (2014) observes, considers the resources that the individual has and the ones that it requires to achieve its objectives particularly with respect to pension savings. Therefore, Devlin (2012) explains that the more positive attitude a person has towards financial planning, the more likely it is for the individual to be able to allocate resources effectively to finance retirement consumption.

Also, several other studies such as Ameriks *et al.* (2004) and Lee and Kim (2016) have confirmed that people who have higher propensity to plan financially have positive attitude towards pension savings. Hershey, Jacobs-lawson, McArdle and Hamagami (2008) establish that financial planning and saving behaviors are predicted on the basis of three psychological variables, namely self-rated financial knowledge, goals, and future orientation, which themselves are influenced by demographic factors. According to Beach (1995), Ekerdt *et al.* (2001) and Stawski *et al.* (2007), strong correlation is observed between financial planning activity level, retirement goal clarity and financial planning for retirement. The logic is that the breadth of knowledge regarding financial issues for one's late-life financial needs is associated with engagement in appropriate planning activities.

Hershey and Mowen (2000), Mowen *et al.* (2000) and Jacobs-Lawson and Hershey (2005), found self-rated financial planning knowledge, future time perspective and general retirement goal clarity as being associated with financial planning towards retirement. Their explanation is that individuals with a strong future orientation are more likely to acquire knowledge about finances in an effort to know how to support themselves in late life. Finally, previous studies like Goldsmith and Goldsmith (1997) and Goldsmith *et al.* (1997) have established significantly positive correlation between measurers of self-rated knowledge of financial planning and objective financial knowledge scales. In addition, the act of contemplating retirement and establishing clear goals for late life, according to Hershey *et al.* (2003), stimulate the desire to learn more about how a successful financial quality of life can be achieved. The final psychological factor is financial risk tolerance.

According to Grable *et al.* (2004) and Grable *et al.* (2009), financial risk tolerance is defined as the willingness to engage in financial behaviours with uncertain outcomes that have an identifiable negative outcome. Grable and Lytton (1999; 2003) and Grable (2000) argue that undertaking financial risk, therefore, indicates the amount of financial uncertainties someone is willing to accept. In line with the TPB, DeVaney and Chiremba (2005) and Magendans *et al.* (2016) postulate that financial risk tolerance is shown to be a considerably better predictor of saving intention than general measures of attitude towards pension savings. For instance, Markiewicz and Weber (2013) found that attitude towards risk affect different domain-specific intentions.

Institutional Factors

According to Han and Sherraden (2007), institutional factors are broad and comprise government policies, infrastructure, regulation, information and personnel. These broad factors, Beverly and Sherraden (1999) argue, are embedded in an institution whose aim is to satisfy its clients through the provision of access, incentives, information, facilitation, expectation, restriction and security.

According to Schreiner and Sherraden (2007), related to the institutional factors is access which refers to the removal of any barrier that prevents informal workers from partaking in a pension scheme. Sherraden (2010) described access as the level by which a person gets to utilise and interact with institutions. Sinha (2009) observes that financial institutions increase access by making it easier to open an account or reducing the fees associated with maintaining an account. In addition, Uthira and Manohar (2009) opine that they offer accessibility to micro pension schemes through awareness creation, proximity to service providers and flexible arrangement for contribution and payment. Thornton *et al.* (2010) believe these are particularly important in motivating low-income people to join micro pension schemes, given their limited income.

Mackellar (2009) argues that pension schemes may exclude informal workers because they are not "eligible" for the scheme or the policy does not encourage them to contribute. Also, Shanker and Asher (2009) complained that distance is a major barrier to financial services and other markets. Their explanation, as Njuguna (2012) observes, is that even though markets or financial institutions may exist at a distance, transaction costs in reaching them can make them inaccessible. Kiiza and Pederson (2002) confirmed this in a research that studied the closeness of a financial institution to the people to determine how often or not they will save. Likewise, Dupas and Robinson (2009) and Kibet *et al.* (2009) concur that higher costs of transactions and transportation to savings establishments as a result of inflexible accessibility have been observed to have substantive negative impact on savings deposits.

Most informal sector workers find the design of pension schemes too complex to understand and unaligned to their low-income level. Onyango (2014) cited a research undertaken by the United States International University (USIU) which highlights that it is impossible for millions of workers in the informal sector to save for their retirement due to unfavourable pension products that do not meet their needs as low-income workers. Consequently, Sinha (2009) advocates for tax and monetary incentive arrangements to attract and encourage informal workers to contribute to pension saving.

From the above, incentives can be seen as financial motivators that encourage enrolment onto savings schemes, as Turner and Manturuk (2012) observe. According to Sherraden *et al.* (2005) and Beverly *et al.* (2008), institutional arrangements that offer incentives for savings are found to increase individuals' motivation for savings. Sherraden (2010) argues that government policy on taxation is an important factor that motivates voluntary pension contribution. On this, Poterba and Samwick (1999) recognise the effect of marginal tax rate on financial assets. They observed that taxes inform investors' decisions, and these are subjected to the direction of economic objectives desired by the government. Thus, the private voluntary pension scheme designed in Ghana provides a tax exemption incentive to encourage informal workers enrolment onto the scheme. NPRA (2010) reveals that contributors have a maximum tax exemption limit of 35 percent.

Also, Schreiner and Sherraden (2007) argue that the rate of return on pension funds may encourage savings by low-income people for at least three reasons. First and foremost, the rate of return is the reward to saving and may help compensate for the sacrifices required to defer consumption. Secondly, the rate of return may motivate people to save by translating a given level of saving into a stock of wealth that is large enough to use for a major asset. Lastly, the rate of return may be the programme feature that catches a participant's eye and motivates him to enrol in the first place. Beside rate of return encouraging pension saving, Stewart (2006) mentioned the important role information plays in raising public knowledge and awareness to increase pension coverage.

From the foregoing argument, information is used as a term that refers to the financial information and education given to consumers and investors to enable them to increase their knowledge and understanding of financial products and concepts by means of instructions, information and advice (OECD, 2005). In order to participate in a voluntary scheme, Njuguna and Otsola (2011) posit that eligible investors must know how to choose an appropriate pension plan, make contributions, make withdrawals and how to compute the return on investment. Prahalad and Hamel (1990) concur that these skills and information, when received in a timely, accurate, adequate and reliable manner, have the tendency of encouraging pension savings.

On the above, Bernheim and Garret (1996) found evidence to the effect that employees who are provided with financial education have higher participation levels in pension plans. Financial knowledge, according to Worthington (2006), equips an individual to make accurate choices and take steps in making proper decisions concerning their finances. Remund (2010) argues that an individual's understanding of key financial concepts describes the level of his/her financial literacy. Additionally, Lusardi and Mitchell (2013) depict that the ability to make cognitive decisions concerning one's financial status, wealth acquisition, pensions, investments and debt as well as being able to understand economic issues defines an individual's financial literacy level.

The Organisation for Economic Co-operation and Development (OECD) (2005) in a report stated that through financial education, consumers and investors of financial products can develop their competency skills to make informed choices when faced with financial risks and opportunities. According to Njuguna and Otsola (2011), financially literate individuals are able to make informed choices on the right pension plans and retirement savings they need as well as being able to be active in the management of their pension plans. Also, Agnew *et al.* (2007) stated that individual savings behaviour and pension participation are greatly influenced by the level of financial literacy which inadvertently contributes to economic growth.

However, a couple of authors like Mackellar (2009) and Lusardi and Mitchell (2011) admonish that although financial education greatly influences retirement savings, one must exercise caution when making concluding statements on its importance. To Lusardi and Mitchell, only few workers get the opportunity to take part in financial seminars and workshops. Many, therefore, are unable to benefit from such education. Lusardi and Mitchell (2011) add that participating in one or two financial seminars and fairs cannot eradicate financial illiteracy completely. Financial education cannot single-handedly improve people's understanding and knowledge since individuals generally find it cumbersome to follow laid down plans. Mackellar eventually established that there is a vast diversity when it comes to individuals' financial literacy levels and their savings behaviour.

According to Beverly *et al.* (2003), facilitation refers to any form of assistance in saving, especially making saving "automatic". Shefrin and Thaler (1988) and Maital and Maital (1994) argue that behavioural propositions assert that people want pre-commitment constraints to help them resist temptations and achieve saving goals. As such, Cohen and Sebstad (2005) observe that individuals may arrange for automatic transfers or other innovative means to get their income debited and pension fund credited. Furthermore, Matul *et al.* (2011) suggest that facilitation in the form of claim procedure simplicity, faster claim settlement, product tangibility and prompt feedback mechanisms are also found to be responsive to clients' decision in joining saving schemes.

According to Collins, Morduch, Rutherford and Ruthven (2009), facilitation also fosters collaborative working relationship with fund managers, custodians and trustees to offer customers value-end products. Petra Trust (2012) reveals that though corporate trustees, usually insurance companies, have the professional and technical skills of designing micro pension products and its management, they have limited understanding of the low-income market segment. However, according to Ahimbisibwe *et al.* (2012) and Rendek (2012), their joint working with other partners such as fund managers, microfinance institutions, banks and other governing bodies help in enhancing micro pension client value which, hitherto, individual institutions could not easily achieve alone.

According to Schreiner and Sherraden (2007), expectations are implicit or explicit suggestions about desired saving, investment or asset accumulation. Lambe *et al.* (2002) argue that they are embodied in institutional features such as meeting savings targets and social pressure of peers as well as staff of saving programmes. For example, some financial institutions motivate investors to hit a certain savings target for them to enjoy a mortgage arrangement. Matul *et al.* (2011) posit that the mortgage benefit becomes an expectation for prospective clients to save more. Hu and Stewart (2009) also expounded that providing monetary incentives to participants, encourages contribution of small frequent amounts and compulsion. Also, subsidising the amount needed to open a savings account was discovered by Dupas and Robinson (2009) to have a positive impact on the savings behaviour of a random sample of women who own small businesses in rural Kenya.

The next institutional arrangement that shapes informal workers pension saving is restriction. According to Ssewamala and Sherraden (2004) and Sherraden *et al.* (2005), restrictions refers to prohibitions or rules that restrict access to or use of pension savings or any other financial asset. Moore *et al.* (2001) expound that pension policies have restrictions intended to enhance savings for retirement. For instance, as Baker (2009) concurs, in a personal voluntary pension scheme, members are entitled to their benefits only when they reach the statutory retirement age of 60 years.

In Ghana, however, NPRA (2010) reveals that a member who has not attained the retirement age may withdraw all or part of the accrued benefits from the scheme ten years after the first contribution for contributors in the formal sector and five years for those in the informal sector. Paxson (1990) is of the view that market institutions create their own sets of regulations and frameworks which can decrease or increase efficient operation of the market through restrictions on the minimum number of transactions to be executed, entry and exit cost, borrowing and liquidity constraints and incomplete information. Bhattacharya (2008) suggests a system where individual contributions are pooled together and allow opt-outs during periods when participants are not able to contribute. Such a system, he argues, is likely to increase participation rates. Another institutional arrangement that motivates informal economy worker to contribute to pansion saving is financial security.

Beverly *et al.* (2008) defined financial security as freedom from unreasonable risk in saving and asset holding. Mohd *et al.* (2010) corroborate Beverly et al.'s (2008) view that institutions that provide safe place for people to keep money increases savings and trust in such institutions. According to Durner and Shetret (2015), when financial institutions are faced with property loss and as a result investors are unable to access their investments, they may lose trust in the institution. This kind of financial security risk, they posit, is capable of explaining outcomes in micro pension saving.

From the observations being made by the various scholars above, it is clear to assert that investment risk, as Han and Sherraden (2007) expound, is another financial security risk associated with rates of return managed by financial institutions. On this, Brookins *et al.* (2015) concur that high yield investments attract high risks by way of higher rates of return. This implies that the degree of investment risk determines the amount of asset accumulated over time. Consequently, lack of security from investment risk can have negative effect on investment which includes lack of public interest in investments.

Finally, at the macro level, Beverly *et al.* (2008) argue financial security risks have to do with the competence and integrity of the political system, integrity of the financial markets and management of the macro economy. Mohd *et al.* (2010) found that whenever assets accumulated, as in a defined contribution retirement plan, these assets are seen to be subjected to depletion through mismanagement or corruption. Also, fiscal and monetary policies greatly affected investment returns. Thus, inflation risk, according to Wack (2014), is often the single greatest threat to long-term asset accumulation.

CHAPTER THREE

EMPIRICAL REVIEW AND CONCEPTUAL FRAMEWORK

Introduction

The empirical evidence is obtained across Europe, America, Africa and Ghana in particular. The empirical review is significant because it assists in identifying knowledge gaps and brings to the fore diverse research methodologies that can be used to guide the study and aid in contextualising the findings (Griffee, 2012; Neuman, 2011). According to Walliman (2011), empirical review helps one to know the present condition of knowledge within an area of interest. In addition, it prevents duplicating work and enhances knowledge on the issue under study (Sekaran, 2003).

Similarly, the conceptual framework is essential as it provides a logical structure of related concepts that aids in offering a visual display of how issues in a study connect to one another as well as how to identify and describe concepts in the problem (Kumar, 2011; Luse, Mennecke & Townsend, 2012). In this chapter, empirical evidence and conceptual framework are used to lay emphasis on pension delivery to informal economy workers and factors that shape their pension accumulation for old age income security. The lessons learnt are thereafter summarised.

Empirical Evidence

In all, 10 empirical studies were reviewed focusing on micro pension saving in shaping retirement income of informal economy workers. These include: Han and Sherraden (2007), Curley *et al.* (2009), Mpofu (2014), Afenyadu (2014), Onyango (2014), Ares *et al.* (2015), Adzawla *et al.* (2015), Magendeu *et al* (2016), Agunga *et al.* (2017) and Kumah *et al.* (2017).

Han and Sherraden (2007) aimed at examining the extent to which competing theories explain pension savings of low-income workers enrolled in an Individual Development Account (IDA) in USA. The main theories studied are the LCH, psychological and institutional theories. The study adopted a purely quantitative approach with an experimental design. The sample comprised of a treatment group of 537 low-income earners enrolled on the IDA programme and a control group of 566 low-income earners. The study used a longitudinal survey where baseline interview was conducted just before the assignment into groups followed by 18-month and 48- month follow-up surveys. There were no significant differences in most of the characteristics between the two groups at the baseline level.

From the surveys, the outcome variable was measured on the interval scale by average monthly net deposit. The independent variables were defined from their respective theoretical foundations. First, age as well as regular and irregular income were defined by the LCH. Next is the perception about current and future economic conditions as prescribed by the psychological theory of savings. Thirdly, the institutional theory of saving provided for the use of incentives, information, expectation and facilitation to test the effects of institutional features on saving. Lastly, other socio-demographic variables including sex, marital status, education attainment, number of dependents and employment types were added as intervening variables to test their possible effect on savings. The methods of analysis involved descriptive statistics of variables, regression analysis and hierarchical regression.

The study found that individual perspectives (age, income, economic condition, rule-of-thumb related to saving) have weak powers in explaining saving. Specifically, regular income is not significantly associated with saving but irregular income showed positive association with savings. Marginally but significantly, participants with optimistic view of future conditions were likely to save more frequently. Compared with the individual perspectives, institutional features explain a significant part of the variance in saving outcomes as observed by the varied studies.

First, participants with higher saving expectations measured by annual match cap saved more and more frequently since they opened IDA accounts. Second, information as measured by the hours of financial education was positively associated with saving outcomes in IDAs. Third, participants using direct deposit made more frequent deposits than those not using direct deposit. Lastly, higher matching rate led to less saving as observed by the study. Thus, Han and Sherranden concluded that institutional structures of pension saving schemes matter more for saving among low income workers than individual perspectives variables.

Similarly, Curley *et al.* (2009) examined the influence of structured saving programme arrangements on the saving performance of low-income households in individual development accounts (IDAs) in USA. The main theoretical argument of their study was based on the Institutional Theory of

Saving in addition to two other previous competing theories - LCH theory of saving and Psychological Theory of Saving. Using a quantitative research approach, the study followed and gathered data of over 2,000 low-income participants in an IDA saving programme. Savings data came from monthly passbook savings account records from depository institutions. The socio-economic and demographic information used in this study was gathered at the time of enrolment.

In addition to the data gathered at the time of enrolment, another survey was conducted using multi-method research design to gather as much information as possible concerning the effectiveness of the programmes. The survey was administered using a combination of both face-to-face and telephone interviews with personnel from IDA providers. The interview questions were based on the institutional constructs suggested in Sherraden's (1991) and Beverly and Sherraden's (1999) studies. The programme survey data were merged with the IDA participant data. The total participant sample size for this study was 2,211.

Curley *et al.* (2009) used a hierarchical multivariate regression analysis to identify which specific structural programme arrangements are important in influencing the saving performance of low-income families. They used average monthly net deposit as the dependent variable consistent with Han and Sherranden's (2007) research. Institutional characteristics served as the independent variables. They were access, information, incentives, facilitation and expectation. The individual participant's characteristics were used as control variables. They included age, gender, dependency ratio, ethnicity, educational level, employment, marital status, rural residency, car ownership, home ownership, business ownership, income and net worth.

Findings of the study showed that institutional characteristics such as information and expectation were significantly related to people's saving performance. The findings support the hypotheses relating to information that (1) the more peer modeling and information sharing, the greater the saving performance; and (2) the greater the number of financial education hours attended, the greater the saving performance. Likewise, the findings also support the hypothesis that the higher the monthly savings target (expectation), the greater the saving performance. On the other hand, access, incentives and facilitation were not significantly related to savings outcomes.

For the control variables, education, rural residency, car ownership and home ownership were found to be significant in influencing saving outcomes. The findings further implied that compared to participants who have college degree, all other categories of education are linked with a lower savings performance. Also, savings performance was less for participants residing in rural areas compared to participants in urban areas, and compared to participants who are not car owners, car owners have a higher savings performance. Similarly, the finding on homeownership implied that homeowners have higher savings performance than participants who do not own their own homes. Other control variables such as gender, age, marital status, dependency ratio and employment showed no significant relationship with savings outcomes.

Han and Sherraden's (2007) and Curley *et al.*'s (2009) studies generally concurred that the provision of institutional mechanisms has significant explanatory powers that affect the value of pension savings of low-income workers in USA. Particularly, Curley *et al.* noted the effects of information and expectation but, access, information and facilitation were seen as insignificant which was contrary to Han and Sherranden's (2007) findings that access, facilitation and incentives significantly explained variations in saving outcomes.

The distinction, however, stems from the choice of study design. Han and Sherraden used experimental design with a sample size of 1,103 while Curley *et al.* used survey design with longitudinal study and relatively large sample size of 2,211. It appears Curley *et al.*'s study was an expanded study of Han and Sherraden's (2007) since they appear similar in terms of sampling approach, method of data collection and analysis. Furthermore, studies on the IDA programme are limited, in that participants selected in most of the studies are not chosen randomly to participate. Therefore, the results do not reflect the overall low-income population since most IDA programmes targeted certain populations. Going forward, scholars have begun to include varied populations of low-income workers in the studies on pension saving.

Mpofu (2014) tested the applicability of the LCH theory of saving, particularly to explain individual saving behaviour in Zimbabwe, following the lack of confidence individuals had concerning the financial system in the country. The study used a blend of quantitative and qualitative research approaches. In addition, Mpofu applied a combination of the comparative and survey research design using cross sectional data collected from a sample of 512 Zimbabweans who are 20 years and older residing in Bulawayo and Gweru. Quantitative and qualitative data were collected using a combination of questionnaires, interviews and secondary data from the 2012 national census and Poverty Income Consumption and Expenditure Survey (PICES) of 2011/12. The study employed quota sampling to draw respondents for the survey questionnaire.

The study made use of both qualitative and quantitative data analysis techniques. For the quantitative aspect, Chi-square test was employed to determine the probability that there is a relationship between savings accumulation and age. The qualitative data from interviews were transformed into an analysable form by summarizing the recordings into a transcript. Subsequently the data were analysed using thematic and content analysis to bring out its results.

The results of the study revealed that the major motive for saving during an individual's working years was for the purchase of land and/or construction of housing. Saving for life after retirement was the fourth most common motive for saving after the saving for children's education and the precautionary motive. Furthermore, the results revealed that the primary sources of income during retirement were business, professional and farming profits. In line with the life cycle hypothesis, income followed a 'humped' pattern peaking in middle age. However, income did not exceed consumption in the middle age contrary to the life cycle hypothesis. Moreover, the study revealed that age varied with savings accumulation in a 'wave' shaped pattern.

Despite the actual results suggesting that the life cycle hypothesis is not applicable, the study found that if one goes by people's intentions and attitudes, the life cycle hypothesis was applicable in Zimbabwe. Therefore, the study recommended financial institutions to embark on educational campaign to create awareness for people to save for retirement. So far, the LCH has been applied in the studies of Han and Sherraden (2007), Curley *et al.* (2009 and Mpofu (2014) to explain savings accumulation. The theory argued for individual perspective variables such as age, income, motive of saving, among others as significant in shaping savings accumulation. Han and Sherraden's (2007) findings were unclear about the extent to which these individual perspective variables explain a significant part of the variance in pension saving outcomes.

On the contrary, Curley *et al.* (2009) found that education, rural residency, car ownership and home ownership were significant in influencing saving outcomes while sex, age, marital status, dependency ratio and employment were not significantly associated with saving for the USA data. Aspects of Mpofu's (2014) study conflicts with Curley *et al.*'s study in that, age varied with savings accumulation in a 'wave' shaped pattern, suggesting that the life cycle hypothesis was applicable in Zimbabwe if one goes by people's intentions and attitudes. This finding is inconsistent with another aspect of the study that concluded that the main motive for saving was for purchase of land and/or construction of housing which is contrary to the retirement saving motive prescribed by the LCH.

In another study, Afenyadu (2014) used the chain response model by Cross (1981) to investigate the reasons for low participation rate of informal sector workers in the Informal Sector Fund (ISF) pension schemes in Ghana. The model portrays the decision-making process as an interrelated and complex process that is influenced by both internal and external factors. The study, qualitative in nature, was approached from a constructivist epistemological perspective. The research employed purposive sampling of sixty petty traders from two different markets in the Greater Accra Region of Ghana. Four key informants from different organisations relating to the informal sector in general were also interviewed. An interview guide was employed in collecting data from the selected petty traders. Data from the key informants were collected by means of interviews.

Thematic analysis of the data showed that most petty traders who took part in the study were not aware of the Informal Sector Fund (ISF) pension scheme. The analysis further indicated that petty traders have negative perceptions about pension benefit to be received. Most of them consider the awarded benefit to be too small for them. Although most of the petty traders wish to be financially secure, they rather prefer to invest their savings in their business to acquire more profits than contributing it to the scheme. The study also blamed lack of institutional mechanisms as factors that discourage petty traders from participating in the scheme. The study concluded that as much as petty traders value financial independence at old age, they consider formal retirement/pension schemes as inapplicable to them.

The Onyango (2014) study sought to find answers to the low pension savings of informal economy workers despite micro pension having been instituted in Kenya. The study used a psychological theory to argue that each stage of an individual's life is related to an attitude towards retirement planning which, in turn, impacts on pension savings. The study adopted a qualitative research approach and an exploratory research design. The data collection methods used were focus group discussions and in-depth interviews. The sampled population consisted of artisans, shop owners, suppliers and service providers who were selected using purposive sampling technique from their registered associations and subsequently placed under different discussion groups. The choice of selecting participants into discussion groups were based on key demographic variables such as income bracket, type of work and gender.

A total of six focus group discussions were conducted for three female groups and three male groups. Each gender group was separated into three age groups, consisting of 18 - 29 years, 30 - 40 years and 41 - 55 with the average number of participants being eight. In addition, four key informants were also interviewed to make a total sample size of 148.

Issues that were raised include attitude towards saving, retirement and pension, knowledge and trust in pension schemes and whose responsibility it was to take care of old people. The study used thematic analysis for the analysis of the data. The findings of the study suggested that many participants perceived that the amount they could afford to save in a pension was too small to be worthwhile. Whatever little money they did have to spare was allocated to more immediate demand such as university education or building their own homes. Some participants also preferred investing in vehicles to pensions as they thought such ventures offered higher returns. The most commonly cited of these was buying of properties and livestocks. This perception was heightened by a mistrust in pensions schemes. Participants expressed their fear of corrupt state employees embezzling the funds or pension companies becoming insolvent resulting in scheme members losing their money.

Both Afenyadu (2014) and Onyango (2014) declared that informal workers preferred investing in other income-earning activities to saving in pension schemes. The reasons professed were rather varied. Participants in Afenyadu's study mentioned lack of awareness of pension schemes, inadequate pension benefits and lack of institutional mechanisms to encourage participation. Onyango's study indicated inadequate income, mistrust of scheme providers, corruption and embezzlement of funds and schemes providers running insolvent as the reasons for avoiding investing in pension saving schemes

Afenyadu (2014) and Onyango's (2014) studies were limited in terms of methodology, since qualitative studies only present subjective views of participants and, therefore, could not be generalised as the views of informal sector workers in Ghana and Kenya. Afenyadu's study is criticized for sampling homogeneous informal workers (60 petty traders) from two market centers in Accra even though informal workers are diverse and spread across every location in the Greater Accra Region of Ghana compared to Onyango's participants (144 artisans, shop owners and suppliers) who cut across different informal work groups.

Ares, Lopez and Bua (2015) conducted a study on the determinants of private saving for retirement with a focus on the cases of Portugal and Spain. The main objective of the study was to identify the potential driving factors of saving for retirement in Portugal and Spain where public pension systems play a crucial role. The life cycle theory was used to underpin the research. Data collection for the fourth wave, the one used in this study, was carried out mainly in 2011 using Computer-Assisted Personal Interviewing (CAPI) and a self-completion questionnaire.

During the study, the data used for the analysis was from the Survey of Health, Ageing and Retirement in Europe (SHARE), sponsored by the European Commission, the German Ministry of Education and Research, the US National Institute on Ageing and different national sources. The sample size for the study was 1808. The study measured variables such as age, education, income, job situation, gender, marital status, area of residence, home owner, financial risk aversion, health status, numeracy and political orientation. The dependent variable was a dummy variable coded a 1 if respondents have any money in a retirement account and 0 otherwise.

The results of the probit regression analysis highlighted that saving for retirement in Portugal and Spain is, in general, low. Indeed, just about 20 percent of the sample have a pension plan. This percentage exhibited a positive relationship to education, job situation, residential area, homeownership and saving habits. However, a negative relation was revealed to financial risk aversion and right-wing political orientation. Particularly, the results suggest that individuals who refuse to take any financial risks have almost 14 percent lower probability of having a retirement account.

This study contributes to the literature in three ways. To begin with, it provides a profile of the Portuguese and Spanish retirement savers. Secondly, this study considers relatively new psychological and behavioural determinants of the decision to save for retirement most of which have hardly been analysed in the previous financial literature as relating to political orientation. Next, the findings provide quantitative evidence on the determinants of the individuals' retirement attitudes. The decision to save for retirement is positively related to level of formal education, job situation, saving habits, area of residence and homeownership as well as being negatively related to financial risk aversion and right-wing political orientation.

Similarly, Adzawla, Baanni and Wontumi (2015) had the theoretical preposition of their study from the economic theory of choice and utility maximisation. The theory is in line with the LCH since they share a common assumption of rationality. Adzawla *et al.*'s study examined variables that affect the decision of informal sector workers to contribute to pension schemes. The study was purely quantitative with a cross-sectional survey design. They used the Heckman two-stage regression analysis to draw conclusion on the following independent variables, namely; age, age squared, marital status, education, number of dependents and income. The first stage involved using logistic regression with the dependent variable being workers' decision to join the scheme or not. In the second stage of the regression, Greene (2002) affirms, a new variable; monthly contribution, is used as the dependent variable. This was to avoid biased and inconsistent estimate, Heckman (1974) avers, should the usual ordinary least square (OLS) function be used.

The targeted area for the above study was Tamale Metropolis, in Northern Ghana. A simple random sampling procedure was used to select five communities within the metropolis. Stratified sampling procedure was then used to put the informal sector workers into contributors of the informal pension scheme and non-contributors. Based on the focus of the study, 80 contributors (53%) and 70 non-contributors (47%) were selected using simple random sampling method. Thus, in each community, 30 informal workers were selected yielding a total of 150 respondents. Data were collected from the selected respondents using a questionnaire.

The study found that the majority of the respondents were aware of the voluntary pension schemes. However, constraints such as low-income levels, lack of understanding of the scheme, inaccessibility of the scheme, distrust and being non-salaried worker are some of the major reasons why they do not contribute to the scheme. Consequently, the analysis showed that the elderly, the unmarried, the highly-educated, highly-depended-upon and higher-income workers have a higher probability of contributing to the informal pension scheme. Similarly, traders, artisans, highly educated and highly-depended-upon workers contribute higher amounts monthly.

Both Ares *et al.* (2015) and Adzawla *et al.* (2015) reported a generally low participation in pension saving schemes in their respective study areas. Ares et al. found that participation in pension saving schemes were positively related to job situation, residential area, homeownership and saving habits. Contrarily, Adzawla *et al.* (2015) found that age, marital status, number of dependents and income are positively related to informal sector workers' willingness to join a pension scheme. Furthermore, both studies found education to be a very important determinant of an individual's willingness to participate in pension schemes.

There exists a contrast in the reasons offered for low participation in pension schemes in the case of Ghana. Afenyadu (2014) mentioned lack of awareness of pension schemes as one of the reasons for low participation. However, Adzawla *et al.* (2015) found that majority of the respondents were aware of the voluntary pension schemes. However, constraints such as low-income levels, lack of understanding of the scheme, inaccessibility of the scheme, distrust and being non-salaried workers were some of the major reasons why they do not contribute to the scheme.

In further studies, Magendans, Gutteling and Zebel (2016) studied the psychological determinants of saving intentions of working individuals in the

Netherlands. The theoretical model for the study was based on the Theory of Planned Behaviour which has been explain in the previous chapter of the current study. The study by Magendans *et al.* (2016) was conducted from a quantitative research approach, using the survey research design.

Data were collected from 272 working individuals through online questionnaire, using convenience and snowball sampling to target them. Participants' level of agreement with statements about the study's psychological constructs were assessed with a five-point Likert scale starting from 1 (fully disagree) to 5 (fully agree). The response variable, saving intention, was measured by 13 items adapted from Xiao *et al.*'s (2011) and Davis and Hustvedt's (2012) studies. The independent variables were also measured on a five-point Likert scale. They were financial risk tolerance, subjective financial knowledge, situational economic trust, participants' regulatory focus, perceived saving norms and perceived financial self-efficacy.

The model was tested with hierarchical linear regression analysis, where all the assumptions underlying linear regression model were adhered to. Regression analysis offered support for the proposed model showing that participants' financial risk tolerance (that is, an individual's attitude towards financial risk taking) was significantly associated with their subjective financial knowledge and regulatory focus. Furthermore, perceived financial self-efficacy and financial risk tolerance both predicted participants' intention to save for a financial buffer. In turn, perceived financial self-efficacy and saving intention predicted self-reported saving behaviour. Importantly, perceived saving barriers mediated the relationship between saving intention and self-reported saving behaviour. In line with the proposed model, results also showed that a specific attitude-based construct is a considerably better predictor of saving intention than general measures of attitude towards saving.

Agunga, Jagongo and Ndede (2017) investigated the effects of financial literacy on financial preparedness for retirement amongst permanent and pensionable employees in statew-owned corporations in Kenya. This study had its theoretical foundation in the life-cycle hypothesis and employed a descriptive survey design. This design was preferred because it was able to give detailed information about a situation that is in existence and it facilitates description of trends, attitudes or opinion of large groups which helped the researcher to learn how financial literacy explains financial preparedness for retirement.

The sample size for the study was 384 using a convenient sampling technique as determined by Black, Devereux and Salvanes (2005) formula. It comprised all the employees of State-owned corporations based in the Nairobi Central Business District (NCBD). Self-administered questionnaires were used to collect primary data in the Nairobi work stations. Descriptive statistics was used to obtain an understanding of the respondent's characteristics. Inferential analysis examined the relationship between financial literacy and financial preparedness for retirement through multivariate analysis at a 95 percent confidence interval. The F-ratio generated in the analysis of variance (ANOVA) was used to test overall model statistical significance.

The study found that financial literacy positively affects financial preparedness for retirement. However, knowledge of financial instruments was found to be insignificant while computation capability for retirement was significant. Results revealed that both demographic characteristics and financial factors bore positive statistical relevance. Agunga, Jagongo and Ndede (2017) concluded that the multiple regression analysis results indicated that variations in financial literacy explain 24 percent of the variations on financial preparedness for retirement.

Various studies recognized the role of psychological and behavoural constructs in shaping the retirement saving of informal workers. For example, Ares *et al.* (2015) found that the decision to save for retirement is negatively related to financial risk aversion. Similarly, Magendans *et al*. (2016) concluded that an individual's attitude towards financial risk taking was significantly associated with their subjective financial knowledge and perceived financial self-efficacy which then predict individuals' intention to save for a financial buffer. However, Agunga *et al*., (2017) found that financial knowledge to be insignificant while computation capability retirement planning was significant in shaping individuals' attitude towards pension saving. Findings from other studies by Han and Sherraden (2007), Curley *et al.* (2009), Afenyadu (2014) and Onyango (2014) remain inconclusive on the effect of psychological and behavioral constructs in shaping informal workers attitude towards pension saving.

Kumah, Botsie, Boachie and Adu-Brobbey (2017) assessed the coverage level of the pension scheme among informal sector workers in the Kumasi metropolis of the Ashanti Region of Ghana. The study was quantitative in nature and was underpinned by the economic theory of utility maximisation and choice. The authors of the study used the cluster sampling technique coupled with simple random sampling to select 422 informal sector workers in the study area. The study adopted a survey design and data were collected by means of interviews and observation. The results from the data analysed were generally descriptive.

From the analysis of the study, it was realised that the level of pension coverage among the informal sector workforce is low. This was happening as a result of lack of awareness and unavailability of pension institutions amongst other reasons culminating in non-viability and unsuitability of the scheme. The researchers then concluded that expanding coverage to informal sector workers through mandatory and auto-enrolment systems as currently existing in the formal sector is likely to beef up coverage. Alternatively, if voluntary arrangement is still to be used because the informal sector workers tend to have lower savings capacity, irregular income streams and poor data management, high discount rates, targeted subsidies might be required to encourage enrolment.

Kumah *et al.*'s (2017) finding of low coverage of informal workers in pension saving schemes concord with the studies of Afenyadu (2014), Adzawla *et al.*, (2015) and Ares *et al.*, (2015). Kumah *et al.* attributed the reason for the low patronage of pension saving schemes to lack of awareness of micro pension schemes which is similar to Afenadu's (2014). In addition, they blame the unavailability of pension institutions amongst other reasons culminating in non-viability and unsuitability of the scheme. Despite the new interest in the research of micro pension saving among informal workers, existing studies in Ghana like Afenyadu (2014), Adzawla *et al.* (2015) and Kumah *et al.* (2017) have failed to investigate the institutional and psychological determinants of MPS in shaping retirement income of informal workers.

The ten empirical studies reviewed in this study are summarised in Table 1. The summary covers author, year of publication, issue of study, location of study, research approach, study population, sampling procedure, data collection instrument, findings and data gap. The review showed that some gaps exist in the literature in enrolling informal workers onto pension saving schemes.

The reviewed studies were unclear on the extent to which individual's perspective variables such as motives for saving, income and other socio-demographic variables explain the variance in pension saving outcomes. Also, it emerged that there is a perceived low return in pension saving schemes. In other words, there is a perceived lack of retirement income adequacy associated with pension schemes. In addition, fewer studies have studied the income levels of informal workers as a challenge to pension saving. Furthermore, little attention is paid to institutional mechanisms in extending pension saving coverage to informal workers. The few findings on institutional mechanisms; however, showed mixed results.

Several of the authors under study used quantitative research approach with varied study designs resulting in inconsistent findings. For instance, non-probability sampling featured more in several of these empirical studies which undermined the predictability and generalisability of the research findings. In addition, many of the variables constructed were silent on their measurement scales and in the cases of the psychological and institutional variables, their construction seems incomplete as other important variables such as restriction and security were not captured. Finally, little is known on the financial attitude of informal workers towards pension saving in the Ghanaian research literature. Some of the data gap areas in Table 1 are located in study population and findings sections and are shown in italics.

Table 1: Summary of Empirical Evidence

No	Author(s)	Year of Publication	Issue of study	Location of Study	Research Approach	Study Population	Sampling Procedure	Data Collection Instrument	Findings	Gaps
1	Han and Sherraden	2007	Examining the extent to which competing theories explain pension savings of *low income workers enrolled in an IDA.*	USA	Quantitative	Low income earners	Convenient sampling	Interview guide and interview schedule	*Incentives, accessibility, facilitation and* information *are significant in determining the value of pension savings of low income workers*	*Unclear institutional features Low income workers enrolled in an IDA.*
2	Curley et al.	2009	The influence of structured savings program arrangements on the saving performance of *low-income households in IDAs.*	USA	Quantitative	Low-income participants	Convenient sampling	Interview schedule and interview guide	Information and expectation were found to be significant in savings performance; *access, incentives & facilitation were not.* Education, rural residency, car and home ownership affects savings.	*Not all institutional features were significant in explaining savings outcome*

Source: Author's Compilation (2018)

Table 1 continued

No	Author(s)	Year of Publication	Issue of study	Location of Study	Research Approach	Study Population	Sampling Procedure	Data Collection Instrument	Findings	Gaps
3	Mpofu	2014	The applicability of *the LCH theory of saving* in explaining individual saving behaviour.	Zimbabwe	Mixed methods	*20 years and above Zimbabweans residing in Bulawayo and Gweru*	Quota sampling	Questionnaires & Interviews schedule/guide	*Absence of retirement motive for saving*; Business, professional and farming profit are *sources of income during retirement*; Age varies with saving accumulation; *People's attitude and intention predict savings.*	*Unclear motive of saving in the application of LCH Pension income inadequate to support quality of life when retired Unspecified attitudes that predict saving*
4	Afenyadu	2014	Reasons for low participation of informal sector workers in ISF pension scheme.	*Accra*, Ghana	*Qualitative*	*Petty Traders*	Purposive sampling	Interview schedule and interview guide	*Inadequate pension benefits; Low awareness level; Lack of organizational ability.*	*Inadequate pension benefits; Low awareness level; Lack of organizational ability.*
5	Onyango	2014	Attitudes of informal sector workers towards saving for retirement.	Nairobi, Kenya	*Qualitative*	*Informal sector workers* and service providers	Purposive sampling	Focus group discussion guide and interview guide	*No retirement savings motive*; Amount to save is not worthwhile; *Alternative saving vehicle yields higher return*; Mistrust of pension schemes; *Lack of awareness of pension schemes.*	*No retirement savings motive; Low pension benefit Mistrust of scheme Lack of awareness*

Source: Author's Compilation (2018)

Table 1 continued

No	Author(s)	Year of Publication	Issue of study	Location of Study	Research Approach	Study Population	Sampling Procedure	Data Collection Instrument	Findings	Gap
6	Ares, Lopez and Bua	2015	Determinants of privately saving for retirement.	Portugal and Spain	Quantitative	*Retirement savers from SHARE*	Convenient sampling	CAPI & Questionnaire	*Low retirement savings*; Pension saving positively related to education, job situation, savings habits and homeownership.	*Low retirement savings* *Formal workers* *Unspecified psychological factors*
7	Adzawla, Baanni and Wontumi	2015	Identify variables that affect the decision of informal sector workers to contribute to pension scheme.	*Tamale,* Ghana	Quantitative	*Informal sector workers*	Purposive sampling, Simple random and Stratified sampling	Interview schedule	Age, age squared, marital status, education, number of dependents and income are significant in influencing pension decision of informal workers; *Low income levels, lack of understanding of the scheme, inaccessibility of the scheme, distrust* and being non-salaried worker are constraints to pension saving.	*Low income levels, lack of understanding of the scheme, inaccessibility of the scheme, distrust* *Limited coverage area* *Unspecified psychological factors*

Source: Author's Compilation (2018)

Table 1 continued

No	Author(s)	Year of Publication	Issue of study	Location of Study	Research Approach	Study Population	Sampling Procedure	Data Collection Instrument	Findings	Gaps
8	Magendans, Guttelin g and Zebel	2016	Psychological determinants of saving intentions of working individuals.	Netherlands	Quantitative	*Working individuals*	Convenient and snowball sampling	Online questionnaire	Fin. risk tolerance is associated with fin. knowledge; Fin. risk tolerance predicts intention to save for a financial buffer.	*Working individuals*
9	Agunga, Jagongo, and Ndede	2017	Effects of financial literacy on financial preparedness for retirement.	Kenya	Quantitative	*Permanent and pensionable employees*	Convenient sampling	Questionnaire	Financial literacy positively affects financial preparedness towards retirement.	*Formal workers*
10	Kumah et al.	2017	Assessing the coverage level of the pension scheme among informal sector workers.	*Kumasi*, Ghana	Quantitative	Informal sector workers	Cluster sampling and simple random sampling.	Interview schedule	*Low coverage due to lack of awareness and unavailability of pension offices; Inadequate pension benefit to last during old age contributes to low coverage.*	*lack of awareness Inadequate pension benefit to last during old age Limited coverage area Unspecified psychological factors*

Source: Author's Compilation (2018)

Note: Knowledge gaps are in italics

Lessons Learnt

It emerged from the empirical studies that most of the authors employed quantitative research approaches, with only a few using qualitative and mixed method research approaches to explain the saving behaviour and motive of informal sector workers. The present study considers the mixed method research approach favourable since it allows the use of both quantitative and qualitative measures in data collection and analysis.

Furthermore, it became evident from the review of empirical studies that majority of the sampling methods adopted were non-probability in nature. This was primarily due to the difficulty in obtaining a sampling frame for informal sector workers since most of them are unregistered and hence difficult to locate. As such, most of the studies found the use of purposive and convenience sampling ideal. These non-probability sampling techniques cut across both the quantitative and the qualitative studies. Gun, Gupta and Dasgupta (2008) critiqued the choice of non-probability sampling for its lack of reliability to make valid conclusion about the population. However, some authors also used multi-stage sampling in their studies and these are applied only in few quantitative studies.

The reviewed empirical studies also showed that interviews and focus group discussions were the dominant data collection methods. According to Creswell (2009) and Neuman (2011), the advantage of applying these two different data collection methods, particularly in a mixed method research, is that it allows for intricate triangulation, validity checks and facilitates comparison. It further came to light that studies involving quantitative research approaches generally assessed pension savings, income, number of dependents and age on a ratio measurement scale. Other key variables such as gender, marital status, type of informal activity, financial attitude and institutional mechanisms are measured on the nominal scale.

In addition, studies that applied the quantitative research approach adopted statistical analytical methods such as logistic regression, hierarchical regression, Chi-square test of independent, Analysis of Variance (ANOVA) and descriptive statistics in analysing the ratio and nominal data. For the studies involving qualitative research approaches, thematic and content analysis were employed in analysing the nominal data.

Conceptual Framework for Micro Pension Saving and Informal Economy workers

The conceptual framework for this research presents the casual effects of institutional mechanisms, financial attitude together with other socio-demographic factors of informal economy workers in shaping accumulated pension savings for subsequent old-age income security. The conceptual framework is instrumental in deepening the understanding of the research results and in relation to the applicable theories. Figure 2 is the conceptual framework for the research. The model assumes that an individual's continuous savings in a micro pension scheme is a result of a series of interrelated variables.

The flow from the framework describes that an informal sector worker of a certain socio-demographic background may either contribute to a pension scheme or otherwise. The decision to contribute or otherwise is influenced by several interrelated factors which may either account for pension savings accumulation or accumulation of non-pension savings or both. The built-up accumulated wealth, therefore, becomes a buffer that informal workers depend on at old age for income security.

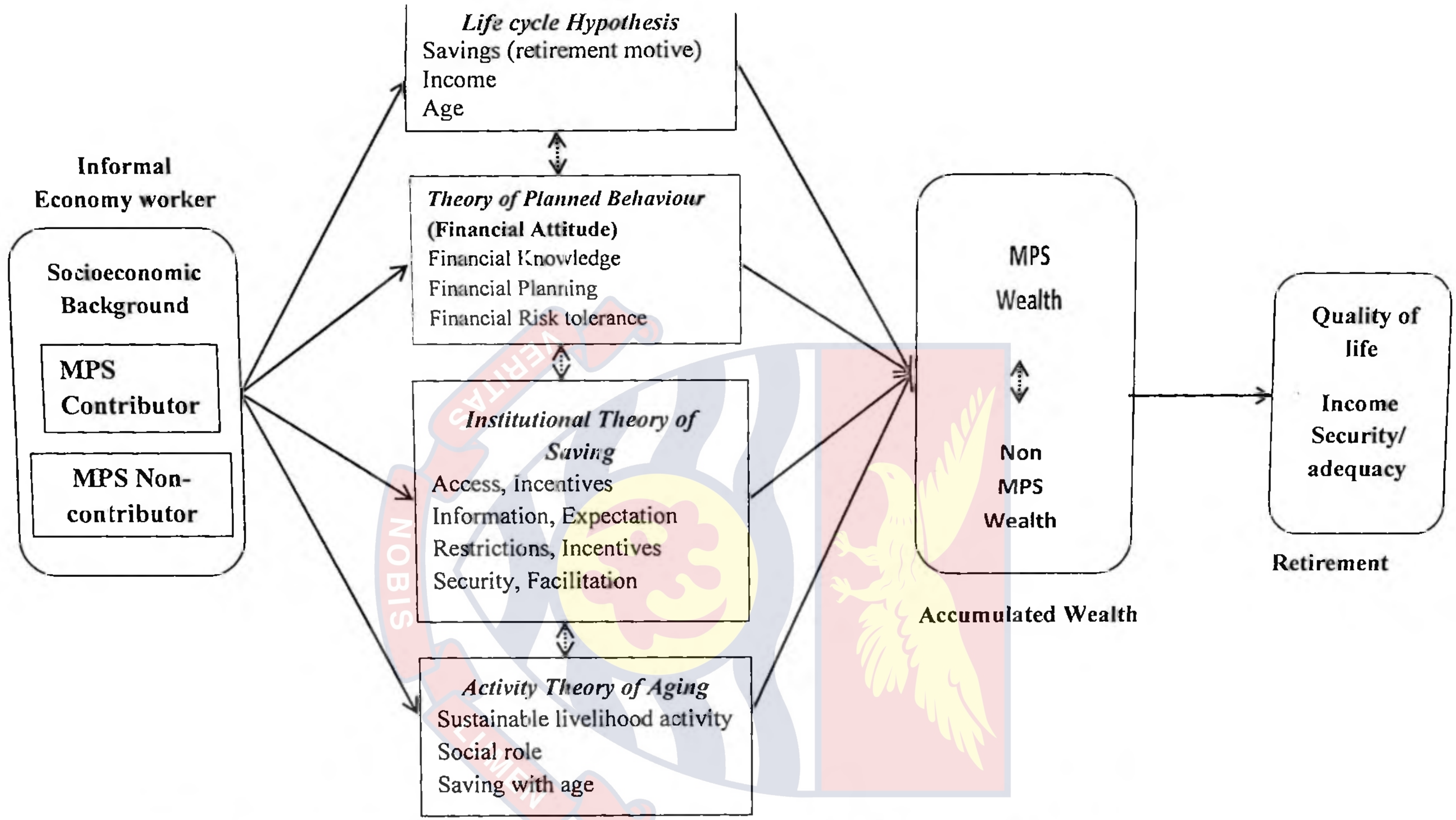

Figure 2: Conceptual Framework for Micro Pension Saving and Informal Economy Workers
Source: Adapted from Modigliani and Brumberg (1954), Ajzen (1991), Sherraden (1991) and Lange and Grossman (2006)

The dependent variable is the average amount saved at a time in MPS scheme. The dependent variable is used as indicative that a person is a member or contributes to MPS. The study considers key socio-demographic variables such as age, sex, marital status, educational level and number of dependents as predictors of the membership to MPS scheme. Financial attitude of the iformal workers towards pension savings is also recognised as a key determinant together with institutional mechanisms such as information, incentives, facilitation, expectation, security and access to pension schemes. These variables are assumed to motivate informal workers to enrol and contribute to pension savings. Therefore, enough wealth that can secure income during retirement is built. The framework also recognises that some informal workers who do not contribute to pension savings may have other alternative means of accumulating retirement wealth.

CHAPTER FOUR

METHODOLOGY

Introduction

In this chapter, the methodology used to investigate micro pension saving in shaping retirement income is elaborated. According to Sarantakos (2012), the methodology provides a general plan that connects the conceptual issues underlying the research problem to the relevant empirical methods. The plan begins with a thorough deliberation on the research design, study area, target population and the sampling procedure used. It is followed by justification of the data collection instruments and data collection procedures adopted in the study. Finally, the plan offers the methods for data processing and analysis, specifically highlighting on the method of analysis, the model for the study, the measurement of relevant variables as well as ethical considerations.

Research Design

There are three main social science research paradigms that offer different ways to observe, measure and understand social reality. According to Creswell (2009) and Scotland (2012), these are positivism, interpretitivism/ constructivism and pragmatism. These research paradigms shape the ontological and epistemological positions of the researcher which often lead to embracing a quantitative, qualitative or mixed method approach in research. Neuman (2011) argues that each paradigm is associated with different social theories and diverse research techniques making them important philosophical foundations that direct the research process.

Sarantakos (2005) and Oppong (2014) aver that the positivist tradition advanced an ontological assumption of objective reality, implying that reality is objective and external to the individual. Breen and Darlaston-Jones (2008) reported that positivism proclaims knowledge as objective and value-free, acquired using scientific methods. Within the positivist epistemology, Sarantakos (2005) and Uddin and Hamiduzzaman (2009) concur that knowledge is only obtainable via sensory experiences and that positivism holds an empiricist epistemology.

Research, in a positivist paradigm, uses a quantitative approach, as Sarantakos (2005) observes. This suggests that knowledge is only attainable through quantitative observation of phenomena. This epistemological perspective of research defines its own instruments of data collection, analysis and interpretation. According to Creswell (2003), Krauss (2005) and Breen and Darlaston-Jones (2008), positivists adopt study designs such as survey, experimental and quasi-experimental designs. Creswell (2003), Neuman (2007) and Bhattacherjee (2012), concur that positivists collect data using quantitative observation, questionnaire and interview schedule.

The positivism paradigm is useful for studying deterministic/functional relationships with the assumption that to every outcome there is a cause. Positivism is rooted in reductionism which implies that ideas can be broken down into small, discrete set of ideas (or variables) which can be tested.

According to Neuman (2007) and Bhattacherjee (2012), the positivist orientation further expresses variables in terms of numbers and frequencies using statistical methods such as parametric and non-parametric methods to reveal significance for drawing conclusions. This paradigm proves useful in examining the effect of financial attitude of informal economy workers on pension savings in the present study. It is also within this positivist paradigm that the study situates the relationship between income levels and pension savings of informal economy workers.

To the positivist, a scientific research first begins with a theory followed by supporting or refuting the theory based on the data collected and then making necessary revisions before additional tests are made. This leads to generalization of its results, as Salomon (1991), Walker (2005) and Mason and Lee (2013), postulate. In addition, Sarantakos (2005) and Neuman (2007) argue that social science research studies with a positivist orientation can be replicated and the findings are value-free. To Sarantakos (2005), its weakness is that it fails to distinguish between appearance and essence of social events.

Next, the ontological position of the interpretivist paradigm is centred on relativism where, De Villiers (2005) and Scotland (2012) purport, reality is individually constructed leading to multiple realities. Epistemology under this paradigm is one of subjectivism dependent on real world phenomena, De Villiers (2005) and Leitch, Hill and Harrison (2010) observe. The epistemic interpretivist tradition states that "no external reality exists independent of our beliefs and understanding and that reality is only knowable through the human mind and socially-constructed meanings" (Ritchie, Lewis, Nicholls, & Ormston, 2013, p. 16). To Shanks (2006), interpretation of data accrued thereof as well as the knowledge acquired is based on the participants' point of view and is grounded in the individual's world of experience. According to the interpretivists, as Klein and Myers (1999) and Rowlands (2005) affirm, knowledge emerges via social constructions such as language, consciousness and shared meanings.

According to Leitch *et al.* (2010), some study designs utilised under interpretivism paradigm include case studies, phenomenology, hermeneutics and ethnography. For data collection methods, De Villiers (2005), Leitch *et al.* (2010) and Bhattacherjee (2012), are of the view that the interpretivists normally employ interviews, focus group discussions and observations. Leitch *et al.* (2010) avers that data analysis usually encompasses the researchers making their agenda and value system explicit from the outset.

According to Leitch *et al.* (2010), the interpretivists apply the qualitative research approach when conducting research. Babbie and Mouton (2001) and Charmaz (2006) assert that this allows for a deeper interrogation of assumptions, questions, logic of theoretical perspectives, as well as for the fact that people continuously construct, develop and change the everyday interpretations of their world. Afenyadu (2014) and Onyango's (2014) empirical studies adopted the interpretivist paradigm in investigating the reasons for the low pension savings of informal economy workers.

According to Ospina (2004), the epistemology of the constructivist provides flexibility and sensitivity to contextualize factors, ability to study symbolic dimensions and social meaning, and increased opportunities to develop empirically-supported new ideas and theories. However, it is often criticized as being time-consuming in its approach to social research, according to Chadwick, Bahr and Albrecht (1984), even with a small sample size. Another concern, as Mack (2010) affirms, is its inability to generalize including its use of subjective data.

Under the pragmatism philosophy of social science research, Creswell (2003) posits that knowledge is acquired through actions, situations and consequences rather than antecedent conditions. In addition, pragmatism is not bound to any system of philosophy and reality. According to Creswell (2003), for the pragmatists, truth is what works at the time. The pragmatists, therefore, reject any form of dualisms, Johnson and Onwuegbuzie (2004) note. They believe in an external world independent of as well as embedded in the mind. Research conducted within this philosophical standpoint, Creswell (2003) expounds, uses the mixed methods design since the investigators draw freely from both quantitative and qualitative assumptions.

Within the pragmatic paradigm, researchers like Creswell (2003) and Johnson and Onwuegbuzie (2004) have the right to select the methods, techniques and procedures of investigation that appropriately address issues of concern in a study. This illustrates that pragmatism promotes methodological pluralism. Johnson and Onwuegbuzie (2004) argue that this allows for the answering of research questions. In addition, the study design from both positivism and interpretivism are applicable under pragmatism. This paradigm, Johnson and Onwuegbuzie (2004) propose, allows for the use of statistical methods that sanction generalisation of findings as well as non-statistical methods in data analysis.

Based on the discussion of the three philosophical orientations of social research, the assumptions of pragmatism seem to favour this present study. This is because the current study requires the collection of both quantitative and qualitative data concurrently on issues relating to motives for saving in MPS schemes, retirement income adequacy, MPS-income relationship, quality of life after retirement, institutional mechanisms and financial attitude of informal sector workers towards pension savings.

Considering the issues under investigation, the pragmatism philosophical school of thought provides the right window to address these key issues in the study adequately. Mpofu (2014) is among few who applied the pragmatism philosophical thought in a related study which makes its adoption appropriate in the current study. Consequently, this research was approached from a pragmatic philosophical point of view.

The mixed method research design was also adopted for the study. Zohrabi (2013) is of the view that the mixed methods allowed the study to combine both qualitative and quantitative research assumptions in its enquiry. According to Johnson and Onwuegbuzie (2004), this strategy allowed the use of many approaches in answering research questions rather than limiting researchers' choices. Consequently, its application in finding answers to institutional mechanisms for pension saving, motives for pension saving and perceived satisfaction about quality of life after retirement makes its adoption appropriate.

Though the mixed method was not the dominant approach in the studies reviewed, it is deployed because its assumptions allow for collecting diverse types of data that best provide understanding of a research problem, as Creswell (2009) posits. The present study, therefore, finds the mixed method favourable since it allows the use of both quantitative and qualitative measures in data collection and analysis. In addition, it permits the study to be conducted from a broader survey in order to generalize results to the population and at the same time uses qualitative methods to collect detailed views from participants of the survey just as Creswell (2009) proposes. Thus, this adequately caters for the lessons learnt from the studies reviewed.

Furthermore, it has been found that studies that use the mixed method research design often apply different inquiry strategies (Johnson & Onwuegbuzie, 2004). Creswell (2009) observes that these strategies are sequential mixed, concurrent mixed and transformative mixed methods. In the sequential mixed method, the research may begin with a qualitative interview for exploratory purposes and follow up with quantitative methods using a large sample so that results can be generalized to a population. In contrast, Ponce and Pagan-Maldonado (2015) argue that the concurrent mixed method collects both quantitative and qualitative data at the same time and then integrates the information in the interpretation of the overall results. The transformative mixed method uses a theoretical framework within which either sequential or concurrent approach is used to collect data.

Based on the distinction of the different strategies of mixed method research design, the concurrent mixed method design type is opted for the study. Creswell (2009) opines that the choice of the concurrent mixed methods design is primarily because it permits the combination of quantitative and qualitative data collection simultaneously in order to provide a comprehensive analysis of the research problem. Particularly, the mixing of methods, Zohrabi (2013) asserts, could improve the validity and reliability of the data and their explanation.

The issues of institutional mechanisms for pension saving, motives for saving, financial attitude towards saving, perceived retirement income adequacy, income level-pension saving relationship and perceived satisfaction about quality of life under study were skewed towards the quantitative strategy except that qualitative strategies were applied concurrently to gain more insight into the problem of low pension saving among informal economy workers. The implication is that both statistical and non-statistical methods of analysis were used in this study at the same time. According to Mpofu (2014), the significance is that the approach has seen limited usage in previous related studies, hence, the motivation for its adoption to contribute to knowledge.

Study Design

Concerning the choice of a study design, Creswell (2009) suggests that for any research approach adopted, be it a qualitative or quantitative or mixed method, there exists a number of strategies of inquiry from which the researcher will select. According to Bryman and Bell (2007), Saunders *et al.* (2011) and Sekaran and Bougie (2013), these 'strategies of inquiry' provide a blueprint constructed out of the research question and objectives focusing on transforming the research question and objectives into a researchable project. In short, Kumar (2011) notes that the design explains how the research question can be answered.

Creswell (2009) distinguished two broad study designs as applied in social science research. They are experimental and the non-experimental designs. The experimental design uses complex scientific methods to establish cause-effect relationship among a group of variables in a research study, as Neuman & McCormick (1995) observes. The non-experimental design, also known as quasi-experiment, is less vigorous in the scientific research process with examples being survey research, descriptive research and correlational studies. Saunders, Lewis and Thornhill (2011) classified study designs as experiments, surveys, case studies and action research. Similarly, Bryman and Bell (2007) refer to experimental, case study, cross-sectional, longitudinal and comparative as study designs.

Given the objectives of this study, a survey design, specifically, a cross-sectional study was adopted to find explanation for micro pension saving and retirement income of informal economy workers in the Greater Accra Region of Ghana. In the survey design, Levin (2006) asserts that systematic methods are used to gather information from a sample of the population that reflects the population's attributes, behaviours, opinions and beliefs that cannot be observed directly. It is called cross-sectional because the information gathered about the sample represents what is happening at a specific point in time (Creswell, 2012).

The cross-sectional study is helpful to describe associations and determine prevalence, as put forth by Bryman and Bell (2007) and by extension to the present study, the effect of financial attitude on pension savings as well as the relationship between income levels and pension savings of informal economy workers. The design is also popular among public policy research planning as well as in understanding health and financial issues (Bryman, 1988). According to Acharya, Nigam and Prakash (2012), the strength of cross-sectional studies is that they can be performed quickly, are relatively inexpensive, provide the prevalence of a risk factor and are useful in the formulation of hypotheses.

The choice of cross-sectional study as a preferred design of this research is anchored on a number of factors that are fundamental to the achievement of the objectives and the lessons learnt form the empirical review. The research focused on informal sector workers' contribution to MPS. The problem is that the prevalence of MPS among informal sector workers is low for which information was required concerning the motive and attitude towards pension savings. From this, the cross-sectional study strategy was deemed most appropriate, using some systematic methods such as sampling, and interviewing as a medium to rigorously investigate the situation with the intention of generalizing at a point in time by Bryman (2008) and Creswell (2012). Furthermore, the cross-sectional study design is right for this study because it creates the opportunity for factors that shape pension savings to be assessed and subsequently test hypotheses raised by the study.

Finally, the cross-sectional study enables comparison between groups of the population. In this regard, informal sector workers who contribute to pension savings and non-contributors can be compared based on their perception about retirement income adequacy as an outcome variable. Since it allows the use of both quantitative and qualitative measures in data collection and analysis. The cross-sectional study design has been used in a number of related empirical studies in relation to informal sector workers' pension savings like Shafii (2007), Turner and Manturuk (2012), Sane and Thomas (2013), Afenyadu (2014), Asante (2016) and Kumah *et al.* (2017). The usage of the cross-sectional studies in these empirical studies together with the relatively low cost in going about its mode of inquiry has provided the grounds for its adoption in the present study.

Study Area

This study is limited to the Greater Accra Region of Ghana. The region has the capital city of Ghana, Accra, and its population is projected to be about 4,613,637 people in 2016 (GSS, 2016). The region is the most populated in the country, and covers an area of 3,245km^2. It forms about 1.4 percent of Ghana's total land area of 238,533km^2 (GSS, 2012). The Greater Accra Region is divided into 16 administrative districts namely Accra Metropolitan Assembly, Ada West, Adenta Municipality, Ashaiman Municipality, Dangme East, Ga Central, Ga East, Ga South Municipal, Ga West Municipal, Kpone Katamanso, La Dade-Kotopon Municipality, La-Nkwantantanang-Madina, Ledzokuku-Krowor Municipality, Ningo-Prampam, Shai-Osudoku and Tema Metropolitan Assembly (GSS, 2015). Figure 3 is a map of Ghana showing an overview of the Greater Accra Region of Ghana.

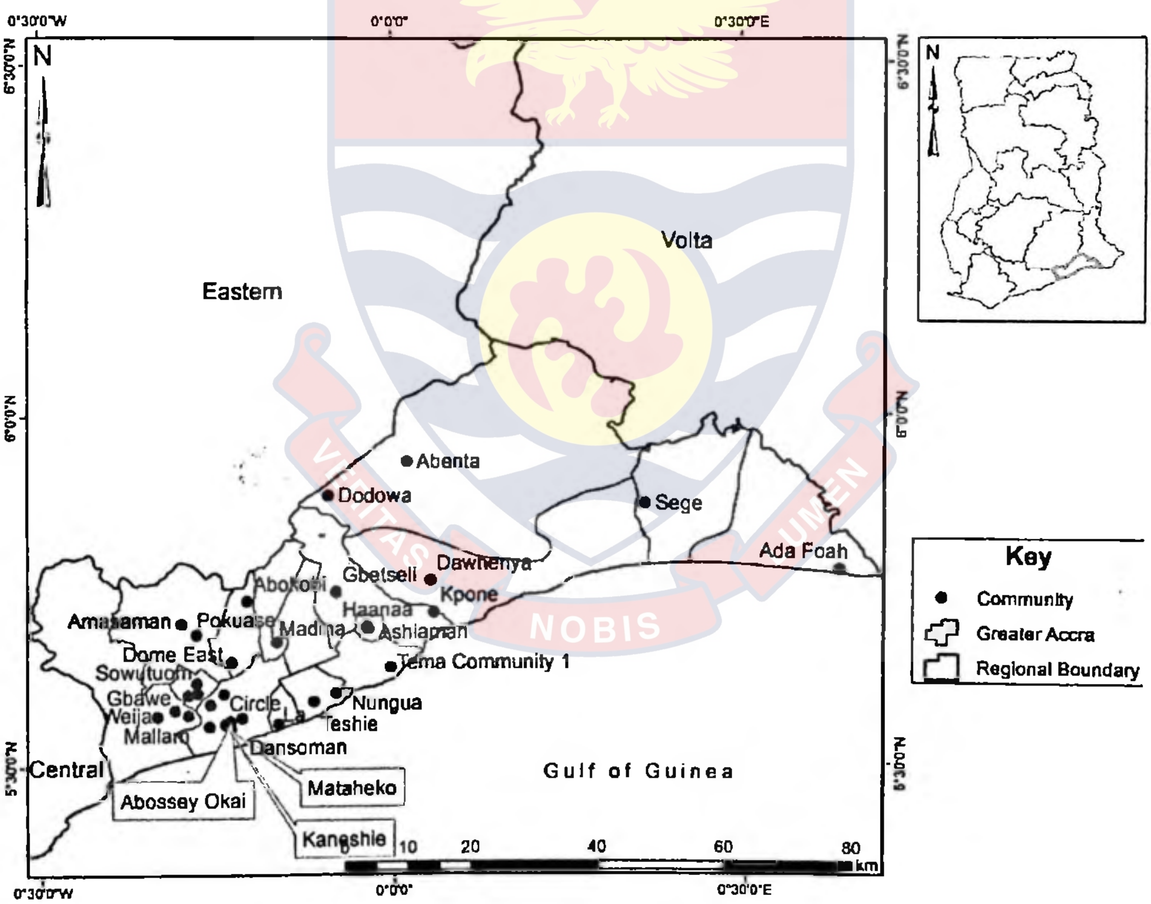

Figure 3: A Map of Ghana showing an Overview of the Greater Accra Region

Source: GIS Unit, Department of Geography and Regional Planning, (2018).

escape areas of low economic growth and move into more dynamic sectors increasing their potential income and reducing the overall poverty. According to Darko (2016), the informal sector workers view MPS scheme as an avenue for ending the risk of old-age income security and poverty since most of the informal employers fail to contribute to pension schemes on behalf of their employees.

In addition, major players in the provision of pension services are located in the region. Several of the institutions such as MFI, investment banks and insurance companies have taken the opportunity in extending their services to the large informal market which, otherwise, are left out of the formal pension systems by offering them tailored schemes. The key industry players include corporate trustees, fund managers and custodians, all of whom are licensed by the National Pension Regulatory Authority (NPRA), ply their trade in the Greater Accra Region.

Study Population

The defined population for the study includes all Informal Economy Workers who are Contributors (IWC) of tier-three pension scheme with any corporate trustee licensed by the National Pension Regulatory Authority (NPRA), Informal Economy Workers who are Non-contributors (IWN) and Pension Scheme Administrators (PSA). Records from the NPRA quoted the total contributors to informal sector pension schemes in Ghana to be 152,000 in 2018 (NPRA, 2018). This number is aggregated from 34 licensed corporate trustees who directly enrol these informal workers. Table 2 presents a list of the corporate trustees in Ghana. Both IWC and IWN are persons engaged in activities such as manufacturing, construction, wholesale and retail trade. The total population of IWN is unknown due to the unregistered nature of their business.

However, for the IWC, the corporate trustees whom they are registered with are obliged to keep certain information confidential. Such information includes names, addresses and telephone numbers of their contributors/ investors. Nevertheless, upon assurance of confidentiality and ethical processes, the corporate trustees provided contact list of informal investors in the Greater Accra Region which formed the sampling frame for the population of IWC.

Table 2: List of Corporate Trustees Licensed by NPRA

SN	Corporate Trustees	Address	Location
1	Pensions Alliance Trust	P. O. Box 1464, Osu, Accra	House No. 3, 55A Kakramadu Link, East Cantonments, Accra.
2	Enterprise Trustees	PMB, General Post Office, Accra	1st Floor, Enterprise Insurance, Airport Office. No. 47 Patrice Lumumba Road.
3	United Pension Trust	PMB 108, Airport, Accra	Vanguard Building, Independence Avenue, Accra.
4	Petra Trust Company Limited	P. O. Box CT 3194, Cantonments, Accra	113, Airport West Dzorwulu, Accra.
5	Metropolitan Trustees	P. O. Box CT 456, Cantonments, Accra	Metropolitan House, 81 Tabon Link, North Ridge Crescent, Accra.
6	Axis Pensions Trust Limited	P. O. Box AT 672, Achimota Market, Accra	# 4 Ibadan Avenue, East Legon, Accra.
7	Hedge Pensions Trust Limited	P. O. Box M 336, Ministries Accra	Ministries, Accra.
8	General Trust Company Limited	P. O. Box 1684, Cantonments, Accra	No. 141/21 Saflo Link, Abelenkpe, Accra.
9	Negotiated Benefits Trust Company Limited	P. O. Box CT 161, Cantonments, Accra	No. 8 Kakramadu Street, Cantonments, Accra.
10	Stallion Trust and Administration Limited	P. O. Box KA30681, KIA, Accra	3rd Floor Gulf House, Tetteh Quarshie Interchange, Accra.
11	Pentrust Limited	P.O. Box AN 5879, Accra-North, Accra	No. 39 Botwe Road, Dzorwulu, Accra behind Bedmate Furniture.
12	Broadview Trust Limited	P. O. Box YK 1447 Kanda, Accra	C809/3, Mango Tree Street, Asylum Down Adjacent Barclays Bank Ring Road Branch, Accra.
13	Old Mutual (Provident Life Trust)	P. O. Box AN 5754, Accra–North, Accra	2nd Floor, Provident Towers, Ring Road Central, Accra.
14	Secure Pensions Trust Limited	P. O. Box CT 3064, Cantonments, Accra	91 Osu Badu Street, West Airport, Accra.
15	Universal Master Pension Trust	PMB KA 207, Accra	TMA 127 Agbawe, Adenta.
16	Legacy Trust Limited	PMB KA 207, Accra	TMA 127 Agbawe, Adenta.

Table 2 continued

SN	Corporate Trustees	Address	Location
17	Glico Pensions Trustee Company Limited	P. O. Box 4251, Accra	47 Kwame Nkrumah Avenue, Adabraka, Accra.
18	Capel Pension Trustees Limited	Not provided	6th Floor Premier Towers, Opposite Pension House Liberia Road.
19	Haven Pension Trust	PMB CT 402, Cantonments, Accra	House No. J 85515, Tema Beach Road, Nungua.
20	Best Pensions Trust	P. O. Box 8952, Accra	#2 Osu Badu Street, Dzorwulu, Accra.
21	NTHC Trustees	P. O. Box KIA 9563, Airport, Accra	Martco House Adabraka, Accra.
22	QLAC Financial Trust Ltd.	P. O. Box AD 14, Adabraka, Accra	NCS Building Near Gulf House, Accra.
23	Daakye Pension Trust Limited	P.O. Box DM 141, Makola, Accra	3rd Floor Vodafone Building ABC Junction, Achimota, Accra.
24	Kimpton Trust	P.O. Box AN 6322, Accra-North, Accra	H/No. 455/2 Farrar Avenue, Adabraka-Accra.
25	ESA Trust	P. O. Box AN 8644, Accra-North, Accra	No.10 Adantu Avenue-Awudome, Accra.
26	Pensol Capital Trust Ltd	P. O. Box KN 5525, Kaneshie, Accra	Near Takoradi Station Kaneshie-Accra.
27	ASI-B Pension Trust Ltd.	P. O. Box AB 63 Abeka, Accra	Block 2, The Financial Hub, No. 3 & 5, CSIR, Otinshie, East Legon, Accra.
28	Discovery Pension Trust Limited	P.O Box LG 1188, Legon, Accra	House No. 6, Akatsi Abbor West Close, North Legon, near Redco Flats, Madina.
29	Bridgewater Pensions Trust Ltd	P. O. Box CT 9809, Cantonments, Accra	Plot 16 Adhro House, Second Floor Sakaman Junction Off Odorkor-Mallam Highway.
30	Ideal Pension Trust Limited	P. O. Box CT 6387 Cantonments, Accra	Hse No.8 Dr. Tagoe Street East Legon, Accra.
31	People's Pension Trust Ltd	P. O. Box CT 1124, Cantonments, Accra	111, Kofi Annan Avenue, North Legon.
32	Kornerstone Pensions Trust Limited	P. O. Box 625, Achimota, Accra	House No. 15, Kofi Annan Avenue, North Legon, Accra.
33	Orange Pension Trust	P. O. Box SK 511, Sakumono	4B, 4th Norla Street, North Labone Estates.
34	First Merit Trust Limited	P. O. Box GP19210 Accra	No .18 Dzorwulu cresent, Dzorwulu, Accra.

Source: Adopted from NPRA (2018)

Sampling Procedure

Due to the size and the heterogeneous nature of the population under study, the study adopted Yamane's (1967, p. 886) method of estimating a representative sample as presented in equation 1 to estimate a desired sample size for the study.

$$n = \frac{N}{1+N(e^2)} \qquad (1)$$

In the formular, n is the desired sample size, N is the population size and e is the level of precision or the acceptable sampling error. In equation 1, it is assumed that the variability in the attributes of the population proportion under study is unknown. Furthermore, a 95 percent confidence level is assumed. Also, given a population size of 152,000 informal workers contributing to MPS, a sample size of approximately 390 is estimated for this research. The number of corporate trustees sampled was also determined by the same sample size determination approach. Approximately thirty corporate trustees were selected as a representative first stage sample. Thirteen participants were evenly selected from each of the 30 corporate trustees to make up the sample size of 390. The reason was to obtain a representative sample across institutions and different categories of informal work.

According to Gun, Gupta and Dasgupta (2008), the sampling procedure involved a multi-stage sampling approach. In this sampling plan, the sampling was carried out in stages using smaller sampling units at each stage. In the first or primary stage, 30 corporate trustees were selected from the national total of 34 trustees by a simple random sampling method specifically, using the random number table method. From each of the selected trustees, a uniform random sample allocation of IWC residents in Greater Accra Region was made at the second stage sample. The choice of this sample allocation strategy was informed by the absence of any known variability among the sample units in each trustees and for the reason that the cost of sampling and size of trustees are similar (Cox *et al.*, 1995). The second stage sample becomes the sampling frame from which the ultimate sampling units were obtained.

The small size of the population of IWC and unavailability of disaggregated regional data for IWC makes the multi-stage sampling approach preferable for this study. Its flexible sampling procedure reduces the operational cost involved in reaching this smaller group of population. In addition, the sampling procedure involves probability which enables the sample estimates to be generalized or inferred to the whole population. The multi-stage sampling technique is widely used in market surveys where, as Gun, Gupta and Dasgupta (2008) assert, the significance of reducing sampling errors is needed. Shaffi (2007) and Kumah *et al.* (2017) applied similar sampling procedures in selecting informal economy workers and households respectively in studies of financial assets accumulation.

Furthermore, quota sampling was used in selecting 400 informal workers non-contributors to MPS in the study area. Quota sampling is a non-probability sampling procedure which, according to Brinsky (2006), involves dividing the entire population into relevant strata such as major type of informal activity (services, industry and agriculture). These strata were chosen according to their relevance to the research topic and their proportion reflects that of the national labour survey data as captured by the Ghana Statistical Service.

Interviewers selected from the population the calculated number of units in each stratum and were free to choose anyone as long as the person met the requirements of the stratum. According to Brinsky (2006), people who are not willing to participate are simply replaced by other people who are. In order to produce a representative sample which mirrors the major characteristics of the IWN in the Greater Accra Region, the quota sampling was used to draw respondents based on the proportion of informal activities under the major sectors of the economy. Tables 3 and 4 provide a summary of how the 390 and 400 sampled IWC and IWN were obtained respectively.

Table 3: Sample of Corporate Trustees and Size of the Sampled IWC

SN	Corporate Trustees	Sampled contributors
1	Enterprise Trustees	13
2	United Pension Trust	13
3	Petra Trust Company Limited	13
4	Metropolitan Trustees	13
5	Axis Pensions Trust Limited	13
6	Hedge Pensions Trust Limited	13
7	General Trust Company Limited	13
8	Negotiated Benefits Trust Company Limited	13
9	Stallion Trust and Administration Limited	13
10	Broadview Trust Limited	13
11	Old Mutual (Provident Life Trust)	13
12	Secure Pensions Trust Limited	13
13	Universal Master Pension Trust	13
14	Legacy Trust Limited	13
15	Glico Pensions Trustee Company Limited	13
16	Capel Pension Trustees Limited	13
17	Best Pensions Trust	13
18	NTHC Trustees	13
19	QLAC Financial trust Ltd.	13
20	Daakye Pension Trust Limited	13
21	Kimpton Trust	13
22	ESA Trust	13
23	Pensol Capital Trust Ltd	13
24	ASI-B Pension Trust Ltd.	13
25	Bridgewater Pensions Trust Ltd	13
26	Ideal Pension Trust Limited	13
27	People's Pension Trust Ltd	13
28	Kornerstone Pensions Trust Limited	13
29	Orange Pension Trust	13
30	First Merit Trust Limited	13
	Total	390

Source: Author's Construction (2018)

Table 4: Sample of Informal Workers Non-Contributors to MPS

Sector of Informal Activity	Weight (%)	Sample
Services	84.56	338
Industry	15.20	61
Agriculture	0.24	1
Total		400

Source: Weight Extracted from GSS 2015.

The weight reflects the number of persons engaged in the informal sector in the Greater Accra Region (GSS, 2015).

The quota sampling method was preferred for this study because of its competence in producing results equivalent to the ones produced by probability sampling, as Moser and Stuart (1953), Stephan and McCarthy (1974), Cumming (1990) and Brick (2011) put forward. In addition, as asserted by Levy and Lemeshow (1999), quota sampling makes it easier to sample from a population whose size is unknown and where a sampling frame is too costly to construct like the population of informal workers who do not contribute pension in this current study. Mpofu (2014) and Adzawla *et al.* (2015) applied the quota sampling method in their studies. Given the focus of the study, the choice of the two sampling procedures, therefore, enabled the researcher to collect data which can be used to draw comparison as well as generalize to the population.

For the qualitative aspect of the study, purposive sampling was used to select ten key informants comprising a director at the NPRA, three representatives from the Union of Informal Workers Association (UNIWA) of the Trades Union Congress (TUC) of Ghana and six managers of any of the sampled corporate trustees. The study adopted the purposive sampling method in selecting the key informants because of the in-depth knowledge they have about the operation of the third-tier pension scheme and its extension to informal economy workers in the region. This sampling choice enabled the study to complete the qualitative aspect of the data collection procedure similar to related studies by Onyango (2014) and Afenyadu (2014).

Data Collection

Data on institutional mechanisms for pension saving, motives for saving, financial attitude towards saving, perceived retirement income adequacy, income level-pension saving relationship and perceived satisfaction about quality of life of informal workers were collected through primary sources. The data collected comprised qualitative as well as quantitative data. The quantitative aspect of the data involed amount saved, financial attitude indexes, income adequacy index, income and quality of life index. The qualitative data were institutional arrangements offered, reasons for saving, uses of saving, attitude towards saving, perception about retirement income, regularity of income and savings and perception about life satisfaction.

Interviews were the main method used in the data collection. This approach to data collection was preferred for its flexibility in terms of information gathering and ability to produce accurate and high proportion of responses. Interviews were employed because of the study's focus on personal characteristics, perception and sensitive issues such as pension savings and income. Gordor, Akar and Howard (2006) acknowledge that interviews enable researchers to clarify seemingly inaccurate answers by explaining the questions to the respondent. If the respondent deliberately falsifies replies, the interviewer may recognize such cases and use special approaches to get the truth. Table 5 presents the summary of the study objectives, type of data, variables, measurement scale, source of data, target population methods, instruments and the analytical methods employed in the study.

Methods, Instrument and Analytical Methods

SN	Objectives	Type of Data	Variables	Measurement Scale	Source of Data	Target Population	Methods	Instrument	Analytical Method
1	Investigate institutional mechanisms of MPS schemes in extending coverage to informal sector workers	Qualitative	1.Access 2.Information 3.Incentives 4.Others	Nominal	Primary	IWC, IWN & Key informants	Interview	Interview guide	Thematic analysis
		Quantitative	1.Amount saved 2.Access 3.Information 4.Incentives 4.Others 5.Demographics	Ratio Nominal & ratio	Primary	IWC	Interview	Interview schedule	PCA & multiple regression analysis.
2	Analyse informal economy workers' motives for enrolling in MPS schemes	Qualitative	1.Reasons for saving/non saving 2. Uses of savings	Nominal	Primary	IWC, IWN & Key Informants	Interview	Interview guide	Thematic Analysis
		Quantitative	1.Savings amount 2.Motives of saving 3.Demographics	Ratio	Primary	IWC	Interview	Interview schedule	Principal Component Analysis (PCA) & Multiple regression.

SN	Objectives	Type of Data	Variables	Measurement Sale	Data	Population			Method
3	Examine the effect of financial attitude of informal economy workers on pension savings.	Qualitative	1.Financial knowledge 2.Financial risk tolerance 3.Financial planning	Nominal	Primary	IWC, IWN & Key Informants	Interview	Interview guide	Thematic Analysis
		Quantitative	1.Log of amount saved 2.Financial knowledge 3.Financial risk tolerance 4.Financial planning	Ratio	Primary	IWC & IWN	Interview	Interview schedule	Descriptive Analysis, index construction& Logistic Regression analysis
			5.Demographics	Nominal & ratio					
4	Examine differences in perceived retirement income adequacy of micro pension savers and non-pension savers.	Qualitative	Perception about perceived retirement income adequacy	Nominal	Primary	IWC, IWN & Key Informants	Interview	Interview guide	Thematic Analysis
		Quantitative	Perception about perceived retirement income adequacy	Ratio	Primary	IWC & IWN	Interview	Interview schedule	PCA Mann-Whitney U test

Source: Author's Construction (2018)

SN	Objectives	Type of Data	Variables	Measurement Sale	Source of Data	Target Population	Methods	Instrument	Analytical Method
5	Examine the relationship between income levels and pension savings of informal economy workers.	Qualitative	1.Regularity of income from business 2.Regularity of saving for retirement 3.Nature of job	Nominal	Primary	IWC & Key Informants	Interview	Interview guide	Thematic Analysis Descriptive Analysis Mann-Whitney U test.
		Quantitative	1. Income levels 2.Amount saved	Ratio	Primary	IWC	Interview	Interview schedule	Correlation analysis Mann-Whitney U test
6	Assess perceived satisfaction about quality of life after retirement of informal economy workers.	Qualitative	Perception about life satisfaction and well-being	Nominal	Primary	IWC, IWN & Key Informants	Interview	Interview guide	Thematic Analysis
		Quantitative	Perception about life satisfaction and well-being	Ratio	Primary	IWC & IWN	Interview	Interview schedule	Descriptive analysis, Chi-square test of indept.

Source: Author's Construction (2018)

Instrument Design

Two main instruments, interview schedule and interview guide, were used in collecting the primary data for the study. The interview schedule aided in the collection of quantitative data from the IWC and IWN in order to compare the effect of financial attitude and perceived retirement income of MPS contributors and non-contributors. The instruement was also beneficial in gathering data to draw conclusion on the relationship between pension savings and income, the perceived quality of life after retirement, institutional mechanisms as well as the motives for saving. The justification for using this instrument was that previous studies by Ofori (2009) and Osei-Boateng and Ampratwum (2011) employed this method.

In addition, interview schedule is preferred when the sample is largely illiterate. Osei-Boateng and Ampratwum (2011) noted that informal economy workers are less-educated, and for this reason, the instrument was personally administered by the researcher and 10 trained enumerators. The interview schedule was constructed according to the objectives of the study. The interview schedule was divided into seven sections containing both closed and open-ended items (APPENDIX A). The measurement of variables was based on the nominal and ratio scales (see Table 5).

The first section of the interview schedule covers the socio-demographic background of the respondent, including type of informal activities, gender, marital status, educational level and number of dependents. This was followed by the issues concerning informal workers' livelihood activities such as number of informal businesses, ownership of business, source of funding for business and registration of business. The next section assessed the workers' views on how institutional mechanisms shape their pension savings. Some of the issues covered in this section were perceptions about access, incentives, information, expectation, facilitation, restriction and security afforded by the scheme providers.

Section four captured items on the motives for saving in the tier-three pension schemes, specifically, to ascertain or otherwise of a retirement motive among the informal workers; average amount saved at a time, frequency in saving, channels of saving, total amount saved and uses of savings. The fifth section focuses on the financial attitude of informal sector workers towards pension savings. Some of the issues in this section were financial knowledge about pension savings, financial planning for retirement and financial risk tolerance in saving for retirement. Scales from Grable and Lython's (1999) financial risk tolerance attitude and Hershey and Mowen's (2000) personality constructs were adapted and incorporated into the interview schedule to achieve the third objective.

The sixth section concentrated on the perception of having adequate retirement income as well as satisfaction in quality of life from both IWC and IWN. Issues from the Satisfaction with life scale instrument by Diener *et al.* (1985) were adapted to achieve the objective. The last section raised questions to gather data to establish the relationship between the level of income and the pension savings of contributors to the pension scheme. Some of the issues addressed in this section were the amount earned from income generating activities, effect of household and business shocks on income and savings and ranking of the severity of household and business shocks.

The lack of micro data availability on informal sector workers finances propelled the study to conduct interviewing schedule sessions in order to retrieve the required data for the study. The use of micro data is not new as several studies like Shafii (2007), Turner and Manturuk (2007) and Baker (2009), used similar data collection methods and instruments to draw conclusion on their research.

An interview guide was also used in collecting qualitative data. This instrument contained themes based on the objectives of the study that were to guide the interviews (APPENDIX B). The interview guide covered issues on institutional mechanisms for pension saving, motives for saving, financial attitude towards saving, perceived retirement income adequacy, income level-pension saving relationship and perceived satisfaction about quality of life of informal workers. The researcher developed the interview guide to aid the collection of qualitative data from the key informants. Moreover, this instrument was appropriate because it serves the purpose of triangulating findings.

Ethical Considerations

Information on income and savings are sensitive. For this reason, both the corporate trustees and the study respondents felt reluctant to participate in the research. However, explaining the rationale of the study to them convinced them to accept to participate. In addition, the explanation emphasized to the participants their right to respond to the survey questions or otherwise. The research participants were assured of anonymity and confidentiality of data provided as they are solely for academic purposes. Anonymity of participants was ensured by numerically coding each returned interview schedule to ensure protection of their privacy and identity. Consent was also taken from each participant before the interviews were conducted. Prior to contacting the survey participants, ethical clearance was obtained from the University of Cape Coast Institutional Review Board to give credibility to the field work. For the key informants, a letter of consent was signed to show their informed consent to the interview. Anonymity of their responses were ensured by using pseudo-names.

Pre-testing and Actual Field Work

The collection of data spanned for a period of two months, starting from 15th April 2019 to 17th June 2019. The first phase begun by pre-testing the interview schedule. It was administered to informal workers in Kasoa, a peri-urban town in the Awutu Senya East Municipality of the Central Region of Ghana. The choice of location for the pilot survey was to avoid survey errors which were likely to occur if the actual research respondents got familiar with the survey question before the actual survey commences. Also, the population of informal workers in Kasoa was homogenous to the study population. The interview schedules were administered to 120 IWC and IWN. The pre-testing helped to identify weaknesses such as different meanings assigned to some terms and ambiguities in the instrument which were subsequently corrected to aid in reshaping some of the issues.

In order to ensure that the interview schedule was indeed accurate to measure all the construct variables for institutional mechanisms in shaping pension savings, the motive behind pension savings, effect of financial attitude on pension savings, perceived retirement income adequacy, relationship between income levels and pension saving and perceived satisfaction in quality of life, Cronbach's coefficient alpha was employed and used in the data collection of the study in order to test for internal consistency of the measures used for the study.

According to Sekaran (2003), the reliability of the instrument indicates the extent to which it is without bias or error-free and hence ensures consistent measurement across time and across the various items in the instrument. In addition, the reliability of the instrument is an indication of the stability and consistency with which the instrument measures the concept and helps to assess the goodness of a measure. In other words, it indicates how well the items in a set are positively correlated to one another. The closer Cronbach's alpha is to 1, the higher the internal consistency for reliability. An alpha value of 0.7 or more is considered sufficient as suggested by Nunnally (1978). However, as Churchill (1979), Sekaran (2003) and Fariborz and Jaleh (2013) assert, reliabilities of 0.6 or 0.5 are considered modest for predictor tests in early stage of research for purposes of saving time.

The reliability test results generally indicate at least a moderate reliability among the items in the interviewing schedule and it gave the green light that the interviewing schedule can continue for final data collection. Table 6 gives the results of reliability tests conducted on key constructs from the interviewing schedule.

Table 6: Results for Reliability Test

Constructs/Variables	Number of Items	Cronbach's Alpha
Motives of saving	18	0.711
Perceived retirement income adequacy	7	0.788
Perceived satisfaction about quality of life in retirement	7	0.702
Institutional mechanisms	33	0.823
Financial knowledge		
- Computation capability	4	0.764
- Emotional loads	4	0.708
- Trust in pension schemes	5	0.831
- Personal competency	9	0.882
Financial planning for retirement		
- Personal engagement	8	0.854
- Retirement planning activity	6	0.776
- Retirement goal clarity	5	0.711
- Self-rated knowledge about FPR	6	0.761
- Future time perceptive	6	0.721
Financial risk tolerance	4	0.791

Source: Field Survey (2019)

The second phase (the actual survey) started by first contacting the various sampled corporate trustees for the contact list of the sampled informal sector investors. Both the IWC and the IWN were contacted and interviewed within the same period, from 27th April 2019 to 17th June 2019. The study employed ten additional interviewers to assist in meeting the average target of 60 interviews a day. The assistants were trained particularly on the definition and concepts underlying the variables that were being assessed. This was to bring uniformity in the data collection process and to produce a true picture that represents the aggregated result.

The completed interviewing schedules were identified with serial numbers and placed under strict confidential care and management. Interview appointment dates were scheduled with key informants at their respective workplaces. The interviews were one-on-one, conducted in a generally serene atmosphere and were recorded with a tape recorder. The interviews were conducted by the researcher with the permission of the participants.

Data Processing and Analysis

After the collection of the quantitative data, each interview schedule was scrutinized for legibility, completeness and consistency. Each completed interview schedule was coded and keyed into Statistical Product and Services Solution (SPSS) version 21 for data analysis. A code book was prepared to that effect. Furthermore, a quantitative data analysis was conducted using statistical techniques such as descriptive statistics, Chi-square test of independence, principal component cnalysis (PCA), hierarchical regression analysis and logistic regression. The quantitative results were presented in tables and graphs.

On the part of the qualitative data collected, they were processed manually by transcription and coding, followed by thematic analysis. The qualitative results were presented in the form of texts. Both quantitative and qualitative results under each objective were integrated to give a clearer and more general picture of issues being analysed. The analysis for the study is guided by the six specific objectives set.

In the first objective, the study investigated institutional mechanisms of MPS schemes in extending coverage to informal economy workers. This objective was analysed using PCA, multiple regression and thematic analysis.

Data on respondents' experience with the tier-three MPS scheme on key issues such as accessibility to the scheme, information provided by the scheme, incentives offered by the scheme and other institutional arrangements that may motivate/demotivate enrolment to the scheme were measured on a ratio scale. PCA was first used to extract various components that define institutional mechanisms. These extracted institutional factors were used in a hierarchical regression model as predictors with the log of amount saved as the response variable to measure the variations in MPS enrolment.

PCA extract out of a large set of variables, new variables called principal components which are linear combinations of the original variables expounded by Koutsoyiannis (2006) are also used. This is done by identifying patterns in data, and expressing the reduced data in such a way as to highlight the inter-correlations among the variables prior to using them in other analysis such as multiple regression or multivariate analysis of variance, as Markaki, Chadjioandelis and Tomarans (2014) suggests. The PCA is preferred for the reason that, as Costello and Orsborne (2005) assert, it summarises empirical data set and reveals hidden or latent structures in the data. Hence, it was applied in this study to reveal the latent variables that cause the manifested variables to co-vary in the saving motives data.

The SPSS version 21 software was used to run the analysis. The Kaiser's criterion or the eigenvalue rule and the Catell's scree test (Catell, 1966) were applied in the decision concerning the number of components to retain and the suitability of the data to run factor analysis. In using the Eigenvalue rule, only components with an eigenvalue of 1.0 or more were retained for further investigation. The eigenvalue of a component represents the amount of the total variance explained by that component. In the case of the Catell's scree test, components above the elbow-shape in a plot of eigenvalues were retained. The retained components contribute the most to the explanation of the variance in the data set. The identified number of extracted components was rotated and interpreted to reflect the concept being measured. This was done using a varimax 0.5 loading method, recommended for basic social science research by Pallant (2005).

In the multiple regression analysis, the independent variables were inputted into an equation in a pre-specified order. The change in variance accounted for in a dependent variable by a specific independent variable is the focus of interest, as Cohen and Cohen (1983) expound. Therefore, with regards to the analysis of the first objective, the observed numerical value of the amount saved is regressed against two sets of independent variables. To avoid any possible violation of the normal distribution assumption, the value of the amount saved was transformed into logarithm values.

By taking the log function, dispersion of the values was reduced, thereby reducing the incidence of having data that has outlier values. The first set of independent variables was the extracted components of institutional mechanisms by the PCA. The second set was socio-demographic characteristics of contributors to MPS schemes. Consequently, the study specified the following regression models for the first objective.

Model I: $logPS = \mu + \sum_i^n \gamma_i INS_i + e_i$

Model II: $logPS = \mu + \sum_i^n \gamma_i INS_i + \sum_j^n \alpha_j SDV_j + e_i$

where:

PS = pension savings; INS = a set of institutional variables (access, incentives, information and others); SDV = a set of socio-demographic variables (age, income, sex, marital status, educational level, number of dependents); e = error term; $\mu, \alpha,, \gamma,$ are the model parameters; $i = 1,2,\ldots,n$; $j = 1,2,\ldots,n$; and $t = 1,2,\ldots,n$. The model is based on the assumptions of normality of distribution of the error term and homoscedascity or equal variance of the error term. Furthermore, the regression model is correctly specified using suitable types of variables put forward by Pallant (2005) and Shafii (2007). Concurrently, the analysis of qualitative data collected from key informants under the first objective involved the use of thematic analysis on similar issues investigated under the quantitative analysis.

In the second objective, the study analysed informal economy workers' motives for enrolling/saving in MPS schemes. This objective was achieved using PCA, hierarchical regression and thematic analysis. Data on motives of saving in the scheme, amount saved at a time and accumulated amount saved were measured on a ratio scale. PCA was first used to extract various components of saving motives. These saving motive components were further fitted to a hierarchical regression model with the log of amount saved as the dependent variable. Similar models were fitted by Ioannides (1992), Poterba and Samwick (1997), Tin (1998), and Shafii (2007) in studying the life-cycle effect of pension savings. The study therefore specifies the following regression models:

Model I: $logPS = \mu + \sum_i^n \alpha_i MOS_i + e_i$

Model II: $logPS = \mu + \sum_i^n \alpha_i MOS_i + \sum_j^n \beta_j SDV_j + e_i$

where:

MOS = a set of saving motives variables (precautionary, bequest, retirement and self-actualisation motives); The rest of the model parameters, variables, and assumptions as defined in the previous paragraph applies to these fitted models. Concurrently, the qualitative data coming from the key informants on the motives of informal workers enrolling in MPS schemes were analysed using thematic analysis.

The third objective of the study which examined the effect of financial attitude of informal sector workers towards MPS is analysed both qualitatively and quantitatively. The qualitative aspect involves thematic analysis of key informants' view about pension savers' attitude towards planning for retirement, knowledge about pension savings and risk tolerance towards pension savings. In the quantitative analysis, the study used descriptive analysis and logistic regression analysis.

The descriptive analysis involved the construction of indexes for each financial attitude construct. The indexes were computed using respondents scores representing their level of agreement with statements about their financial knowledge towards retirement, financial planning for retirement and financial risk tolerance. Items were grouped under their respective financial attitude constructs and scored from 1 to 5, where 1 is least agreement with an item and 5 represent strongest agreement with an item. The index scores for each respondent level were calculated by the sum of score from each item divided by the total maximum sum of the scores using the findings of Grootaert, Narayan, Jones and Woolcock (2004) and Heenkenda (2017). A higher score in the scale means a higher level in terms of the attitude being assessed. The scales are found in the interviewing schedule at Appendix A.

The financial knowledge construct consisted computation capability (CC), emotional loads balance (ELB), trust in pension scheme (TPS) and personal competence (PC) These constructs are hypothesised to motivate pension saving like the findings of Lusardi and Mitchell (2011), Van Rooij *et al.* (2011), Balaz (2012) and Bacova and Kostovicova (2018). The constructs for financial planning for retirement comprised personal engagement (PE), retirement planning activity (RPA), retirement goal clarity (RGC), self-rated knowledge about financial planning for retirement (SKFPR) and future time perspective (FTP). The last financial attitude construct was the financial risk tolerance index (FRT). Grable and Lytton's (1999) financial risk tolerance scale was adopted to measure financial risk tolerance attitude.

The set of financial attitude indexes constructed were used as predictors in a logistic regression analysis to predict the likelihood of saving in MPS schemes or otherwise. The analysis was needed to access how well financial attitude variables such as financial knowledge, financial planning and financial risk tolerance explain a workers' status as MPS contributor or otherwise. In addition, the analysis enabled the study to determine the relative importance of each predictor variable in a model. The study also added socio-demographic variables such as sex, age, marital status, educational level and number of dependents to the model to determine the extra influence they have on the chances of pension saving or otherwise by informal economy workers.

The dependent variable was dichotomised based on the respondents' status as contributor to MPS, coded as '1' and non-contributors, coded as '0' (reference category). Since the dependent variable is a binary variable, a logistic model was appropriate to be fitted (Maddala, 1992; Malroutu & Xio, 1995).

Consequently, the logistic model is specified based on the cumulative logistic probability function (Pindyck & Rubinfield, 1991) as follows:

$$ln\left(\frac{\pi}{1-\pi}\right) = \alpha_0 + \sum_{i}^{n} \beta_i FKR_i + \sum_{j}^{n} \gamma_j FPR_j + \sum_{k}^{n} \theta_k FRT_k + \sum_{l}^{n} \tau_l SDV_l + e_i$$

From the specified logistic model, $\left(\frac{\pi}{1-\pi}\right)$ is the odds representing the ratio of the probability of contribution to MPS scheme (π) to its complement. FKR is set of items for financial knowledge towards retirement, FPR is set of items for financial planning for retirement, FRT is set of items for financial risk tolerance and SDV is a set of socio-demographic variables. The description of the variables and their a priori signs are defined in Table 7.

Table 7: Definition of Variables in the Logit Model

Variables	Description/measurement	a-priori sign / expectatior
CC index	Computational Capability/Ratio	+
ELB index	Emotional Loads/Ratio	-
TPS index	Trust in Pension scheme /Ratio	-/+
PC index	Personal Competence / Ratio	+
FPRAL index	Retirement Planning Activity/Ratio	-/+
RGC index	Retirement Goal Clarity / Ratio	-/+
FRSK index	Self-Rated Knowledge about FPR / Ratio	-/+
FTP index	Future Time Perspective	-/+
FRT	Financial Risk Tolerance	-/+
SEX	Sex of respondent / nominal	+/-
AGE	Age of respondent in years/nominal	+
EDU	Educational level / nominal	+
MSTU	Marital status / nominal	+/-
DEPT	Number of dependents / ratios	+/-

Author's Construction (2018)

Results from the logistic regression analysis produced results like the z-statistics, the goodness of fit statistic and the likelihood ratio (LR) test. The z-statistics was used to measure the level of significance for each of the estimated coefficients. The goodness of fit statistics provided the R-squared. The likelihood ratio (LR) test was used to determine the joint significance of the independent variables in the model. The LR test statistics follows a standard Chi-square distribution with the degrees of freedom equal to the number of independent variables used in the model. The higher the percentage of the prediction, the greater is the prediction power of the model. The discussion of the results was based on the log-odds ratio.

The quantitative aspect of objective four was analysed using PCA and subsequently, a Mann-Whitey U test was performed to test the hypothesis that there is no significant difference between MPS savers and non MPS savers in terms of their perceived retirement income adequacy. In drawing conclusion to this hypothesis, respondents were asked to scale their perceived income adequacy in retirement judging from their present situation. Respondents indicated the extent to which they agreed with the 14 items that measured perceived income adequacy, where a scale of 1 implies least agreement and 5 implies strongest agreement with the interviewing items.

The analysis employed the principal component analysis to extract a combination of items that best defines perceived income adequacy. The regression loadings of the extracted components were treated as dependent variables and were compared across the two MPS statuses in a Mann-Whitey U test. The test was preferred because, as Pallant (2005) and Sarantakos, (2005) assert, it helps in comparing differences between two independent populations when the dependent variable is ordinal or continuous but not normally distributed.

The use of Mann-Whitney U test was also justified since dependent variable violated the assumption of normality. The test of the hypothesis was done at a significance level of 0.05 as recommended by Pallant (2005). Using the p-value approach, the decision rule is that, if the p-value is less than or equal to the level of significance, then H_0 is rejected. This denotes that there is a significant difference between the two populations on the dependent variable. If the p-value is greater than the level of significance, then H_0 is not rejected, implying that there is no significant difference between the two populations on the dependent variable. On the qualitative aspect, information from key informants' concerning perceived retirement income adequacy of MPS were analysed thematically.

Similarly, the fifth objective employed descriptive analysis, Spearman correlation analysis, Mann-Whitney U test and thematic analysis to examine the relationship between income levels and pension savings of informal sector workers. Key variables analysed on the ratio scale were the monthly income, savings amount, duration of saving, frequency of withdrawal, frequency of saving and total pension savings. Other variables, including categories of income from business, categories of savings, household and business shocks were analysed on the nominal scale using descriptive statistical measures like frequencies, percentages, cross-tabulations and Chi-square test of independence. Similar issues were analysed qualitatively using thematic analysis.

The relationship between income levels and corresponding categories of amount saved for MPS was analyzed with a Spearman's rank correlation coefficient. To Koutsoyiannis (2006), the value of the rank correlation coefficient ranges from +1 to -1 while a high value of the rank correlation coefficient indicates that there is a close relationship between income levels and amount saved for MPS. Mann-Whitney U test was also performed to further acertain the distinction between contributors of MPS and non-contributors of MPS in terms of their monthly income earned. Finally, on the income-pension savings relationship, a Chi-square test of independence was conducted to test the hypothesis that experience of shocks does not affect MPS saving. The variables in the hypothesis are norminal of which respondents answered yes or no. Similarly, the p-value approach was used to make statistical decision.

The final objective was analysed using descriptive analysis, Mann-Whitney U test and thematic analysis. The descriptive statistics such as frequencies, percentages and cross-tabulations helped in analysing issues of life satisfaction and quality adopted from the Satisfaction with Life Scale instrument in accordance with the study by Diener *et al.* (1985). The respondents indicated how much they agree with the seven items measuring perceived satisfaction in quality of life after retirement. The assessment was done on an interval scale that ranges from 5, strongly agree to 1, least agreement with an item. The responses were analysed by summing up scores on each item divided by the total maximum sum of the scores to obtain an index for satisfaction in quality of life as Grootaert *et al.* (2004) and Heenkenda (2017) expound.

Subsequently a Mann-Whitney U test was conducted to test the hypothesis that there is no significant difference between MPS saver and non-savers with respect to satisfaction with "quality of life". The qualitative data on perceived life satisfaction and quality after retirement were analysed using thematic analysis. They were used to reinforce the quantitative analysis.

Chapter Summary

In conclusion, the study employed a mixed method research design to investigate informal sector workers motives for saving in MPS schemes, pension savings-income relationship, perceived satisfaction about quality of life in retirement, retirement income adequacy, institutional mechanisms in shaping pension savings and financial attitude towards pension savings. Interviews were conducted to collect data in response to the research questions and hypotheses set. An interview schedule and a guide were designed to solicit the responses from the sampled informal investors and key informants respectively.

The study sampled 390 informal workers contributors through selected corporate trustees using a multi-stage sampling approach and 400 informal workers non-contributors through a quota sampling method. Thematic analysis was used to analyse the qualitative aspect of the data collected while descriptive statistics, Principal component analysis, Chi-square test of independence, logistic regression analysis and hierarchical regression analysis were used to analyse the quantitative data. While findings from this study can be generalized to similar populations, it can be done only up to the 95 percent level of confidence.

CHAPTER FIVE

INSTITUTIONAL MECHANISMS OF MICRO PENSION SAVING SCHEMES

Introduction

The primary focus of this chapter is to find answers to the institutional mechanisms that are used to get informal economy workers to enroll on to the tier-three MPS schemes. It is preceded by an overview of the respondents' socio-economic background including their livelihood activities. The economic activities of the respondents are analysed from the Activity Theory of Aging (ATA) framework. According to Moody (2012) and Novak (2012), the tenet of the ATA maintains that wealth accumulation for better quality of life in retirement is dependent on keeping a sustainable livelihood to earn income in the course of active life. Therefore, the more livelihood activities one engages in, the more likely he/she is able to earn decent income and subsequently save for a better quality of life in retirement.

The discussion raised under the institutional mechanisms of MPS schemes, is based on the theoretical foundation of the Institutional Theory of Saving. This underpins the take-up of MPS schemes and subsequent shaping of pension wealth. Sherraden (1991) and Beverly and Sherraden (1999) assert that the Institutional Theory of Saving expound the fact that individual's financial or real asset accumulation is dependent upon the access, incentives, information, facilitation, expectation, restrictions and security, provided by institutions. These propositions serve as the framework for investigating the institutional mechanisms of MPS schemes.

The issues in this chapter were analysed using the concurrent mixed method approach which employed a blend of descriptive statistics, principal component analysis, multiple regression analysis and thematic analysis. These methods of analysis were adequate because the data on institutional arrangements were mainly interval and ratio types. The socioeconomic data of the respondents were mainly norminal types and were therefore analysed from the aggregate level and later disaggregated using cross tabulation and chi-square test of independence. The analysis is based on varied sample sizes per the key points because of inapplicable items and multiple responses. Statistical significance is based on alpha level of 0.05. Thematic analysis was performed on the qualitative data.

Background Characteristics of Respondents

The background issues of respondents are in two parts. The first part examines the sex, age, marital status, education attainment, number of dependents and respondents' pension saving status. Livelihood activities are studied in the second part. These activities comprise the number of businesses run, type of business, ownership of business, registration of business and reasons for engaging in informal businesses by the respondents.

Out of the 790 instruments administered, 655 of the informal workers responded, giving about 83 percent response rate to the research. The other 134 administered instruments were found to be incomplete and were therefore discarded. According to Saunders, Lewis and Thornhil (2011) and Mpofu (2014), in order to mirror a large population with a 95 percent confidence level and five percent margin of error, a minimum response rate of 75 percent is required. Since the usable responses in the present study exceed the minimum response rate of 75 percent as suggested by Saunders et al. (2011) and Mpofu

(2014), the sample is considered a statistical representation of the sample frame, consistent with the response rates reported in GSS (2016).

The share of informal worker contributors (IWC) and informal worker non-contributors in the sample were 49 percent and 51 percent respectively. The study examined the distribution of sex of the respondents. Of the 655 informal workers who responded, 29.3 percent were males, while the remaining 70.7 percent were females. This illustrates that females constituted majority of the informal economy workers sampled in the study area. Ghana Statistical Service (2014) and Anuwa-Amarh (2015) found similar dominance of female workers in the urban informal economy of Ghana. Table 8 presents the distribution of sex of informal workers in the study.

Table 8: Distribution of Sex of Informal Economy Workers

Sex	Respondent's MPS Status					
	IWC		IWN		Total	
	N	%	N	%	N	%
Male	112	17.0	80	12.2	192	29.3
Female	209	31.9	254	38.8	463	70.7
Total	321	49.0	334	51.0	655	100.0

χ^2 = 9.453; d.f= 1; p-value= 0.002

Source: Field Survey (2019)

Furthermore, the study found that majority of contributors to MPS are female and represented about 65 percent of the total contributors (321) to MPS in the sample. This goes to emphasise the perception that women save more than men, asserted by Hungerford (1999), Anderson and Baland (2002) and Lee and Pocock (2007). The foregoing perception differs from the finding of

Mayhew (2003) and Phipps and Woolley (2008) that women are less likely to save for pension than men. This reason had been that women are likely to be supporting the home with their income and therefore may not save.

The present study also finds that a worker's status as MPS contributor or not is related to the sex of the worker. A chi-square test of independence between the two categorical variables showed a statistical significance at the five percent level (χ^2 = 9.453, d.f= 1, p-value= 0.002). The result illustrates the important role that the sex of a person plays in shaping decisions and actions towards saving, noted by Le Beau, Iipinge and Conteh (2004) and Fafchamps and Quisumbing (2005). This, according to Chowa (2006), is because every individual may experience various roles or processes differently based on their biological differences as women and men.

The study also examined the marital status of the respondents. More than half of the respondents (56.2%) were found to be married. This finding is consistent with Anuwa-Amarh's (2015) that 56.4 percent of self-employed persons are married. Similarly, majority of both IWC and IWN were also found to be married (52.6% and 59.6% respectively). Table 9 presents respondents' marital statuses.

Table 9: Marital Status of Respondents

Marital Status	Respondent's MPS Status					
	IWC		IWN		Total	
	N	%	N	%	N	%
Married	169	25.8	199	30.4	368	56.2
Single	83	12.7	10	1.5	93	14.2
Separated	23	3.5	17	2.6	40	6.1
Divorced	9	1.4	7	1.1	16	2.4
Widowed	15	2.3	11	1.7	26	4.0
Living together	19	2.9	88	13.4	107	16.3
Others	3	0.5	2	0.3	5	0.8
Total	321	49.0	334	51.0	655	100.0

χ^2 = 9.453; d.f= 6; p-value= 0.000

Source: Field Survey (2019)

Results from a chi-square test of independent showed an association between marital status and pension saving status at the five percent significance level (χ^2 = 9.453, d.f= 6, p-value= 0.000). The Crammer V statistic of 0.402 confirms this association. Similarly, McKay and Kempson (2003) observed that marital status was related to general saving but had little impact on retirement saving. Tin (2000) explained that married couples with children will have disposable income to spend due to significant expenses involving their children. Therefore, Anderson *et al.* (2000) is of the view that they are likely to save less as couples but more likely to plan for retirement as individuals.

According to Livanos and Nunez (2016), education is considered one of the determinants of earnings and savings. Consequently, people's attitude and understanding are influenced by the level of education that they have acquired. It was imperative, therefore, to know the educational background of the respondents in this study. From Table 10, it can be observed that about a quarter each of the respondents were educated up to basic level (MSLC/JHS) (24.7%) and the Senior High School level (25.8%). This is followed by those with "up-to- tertiary education" (19.1%). Those with "no formal education" constituted 18.3 percent of the sample. This means that cumulatively, more than half of the sampled informal workers have low level of education.

However, among the contributors of MPS, the number of people with no formal education is very minimal compared to those who do not contribute to MPS. The indication is that more of those who contribute to MPS seem to have at least up-to primary education.

Table 10: Educational Qualification Attained by Respondents

Education	Respondent's MPS Status					
	IWC		IWN		Total	
	N	%	N	%	N	%
No Education	31	4.7	89	13.6	120	18.3
Up-to-Primary	40	6.1	39	6.0	79	12.1
Up-to-MSLC/JHS	104	15.9	58	8.9	162	24.7
Up-to-SH/SS/Tch/Vc.	133	20.3	36	5.5	169	25.8
Up-to-Tertiary	13	2.0	112	17.1	125	19.1
Total	321	49.0	334	51.0	655	100.0

χ^2 = 175.00; d.f= 4; p-value= 0.000

Source: Field Survey (2019)

A cross tabulation of educational level attained and pension contributing status of respondents showed a significant association. This was evident in the results of the Chi square test of independence. The test produced a coefficient of 175.00 with 4 degrees of freedom and a p-value of 0.000. The Crammer V statistic yielded a value of 0.517 with a p-value of 0.000. This corroborates the finding of Curley *et al*. (2009), Ares *et al*. (2015), Adzawla *et al*. (2015) and Lee *et al*. (2016) and that education is an important determinant that inspires retirement saving.

According to Bloom *et al*. (2007), people at different ages save at different rates, thus affecting total savings. This makes the age of the respondents in this study one of the important demographic factors for examination. The LHC, as Apergis and Christou (2012) observe, argues that economic players save less when young but peak during their industrious years and fall thereafter when they are old and in retirement. Consequently, it was evident from this study that the average age of respondents to the survey was approximately 39 years with a standard deviation of about nine years. The minimum age among the sample was 20 years while the maximum was 69 years.

In order to obtain particular information from the raw age data, it became apparent to group the age data into classes consistent with the Starges (1926) and Ofosu and Hesse (2011). Consequently, a class width of 10 years was used to construct a frequency distribution for the ages of the respondents similar to other previous studies (Afenyadu, 2014; Darko, 2016; Kumah *et al*., 2017; Shafii, 2007). From the analysis, the modal age class of the sampled informal workers was 30 – 39 years (41.7%). The 20 – 29 years, 40 – 49 years, 50 – 59 years and above 59 years classes were 11.5 percent, 29.8 percent, 13.9 percent and 3.2 percent respectively. This corroborates the notion that most informal workers are in their productive age in life and in position to save enough for retirement consumption just as Hu & Stewert (2009) Onyango

(2014) concur. Table 11 presents the age distribution of the sampled informal workers.

Table 11: Distribution of Age of Respondents

Age (Years)	Respondent's MPS Status					
	IWC		IWN		Total	
	N	%	N	%	N	%
20 – 29	45	14.0	30	9.0	75	11.5
30 – 39	137	42.7	136	40.7	273	41.7
40 – 49	90	28.0	105	31.4	195	29.8
50 – 59	38	11.8	53	15.9	91	13.9
60 & above	11	3.4	10	3.0	21	3.2
Total	321	49.0	334	51.0	655	100.0

χ^2 = 4.312; d.f= 4; p-value= 0.365

Source: Field Survey (2019)

In addition, the study found that the age structures of the two samples portray the pattern predicted by the LCH. Figure 4 shows a stretched humped shape of the age structure under study. The pattern demonstrates the presence of the life-cycle hypothesis in the age structure of the population under study. The age structure of the two samples conforms to the description of Apergis and Christou (2012) that economic players save less when they are still young and also when in old age. However, increased savings are realised in their industrious years.

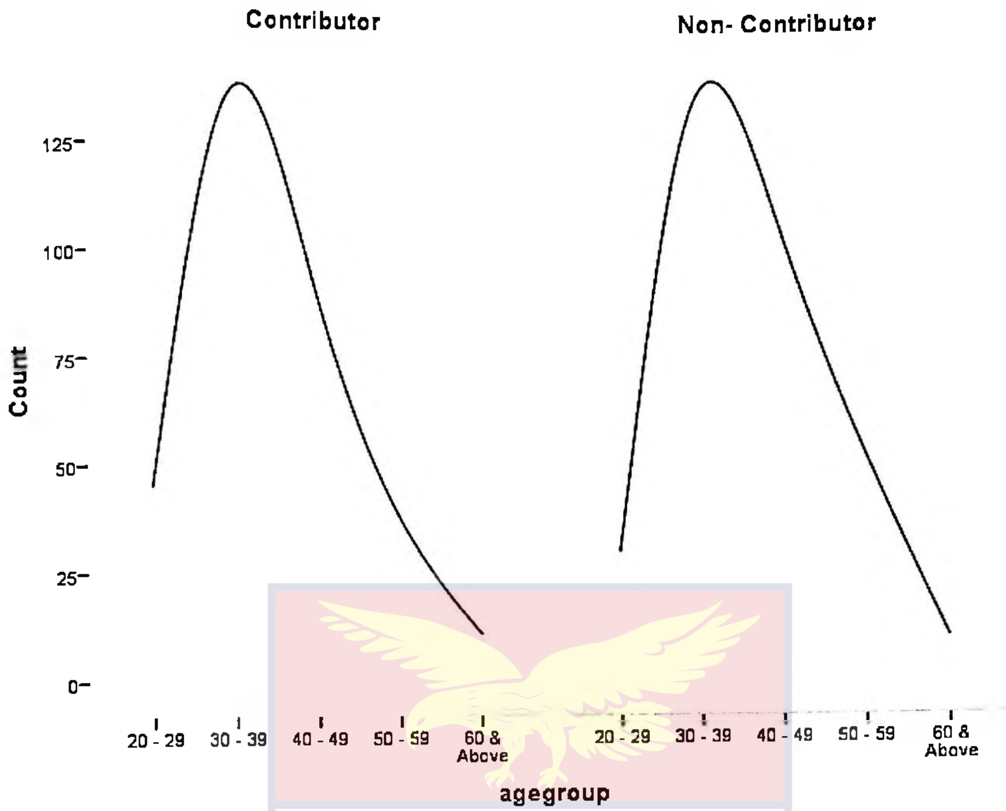

Figure 4: Line Graph of Age Distribution of IWC and IWN

Source: Field Survey (2019)

Comparatively, the study found no significant difference between a person's status as an IWC or IWN for each of the age groups. The results from the test of proportion between IWC and IWN for each of the age groups as presented in Table 12 yielded no significant differences. In addition, the data seems to suggest that the age structure of the informal workers appears to have no association with a person's status as pension contributor or otherwise ($\chi^2 = 4.312$, d.f= 4, p-value= 0.365). The implication of this finding is similar to other studies by Kelly and Shmidt (1996), Deaton and Paxson (1997), Higgins and Williamson (1997), Higgins (1998) and Bloom *et al.* (2007) that have observed that the population age structure does not differ with different people with regards to their saving rates.

Table 12: Test of Proportion between IWC and IWN for each Age Group

Age Groups (Years)	Diff	Z	S.E	P-value	95% CI
20 - 29	0.05	0.65	0.0765	0.5139	-0.0941, 0.1941
30 - 39	0.02	0.34	0.0597	0.7376	-0.0970, 0.1370
40 - 49	-0.034	-0.52	0.0657	0.6049	-0.1624, 0.0944
50 - 59	-0.041	-0.55	0.0742	0.5804	-0.1832, 0.1012
60 & above	0.004	0.05	0.0770	0.9586	-0.1465, 0.1545

Source: Field Survey (2019)

Cumulatively, close to 53 percent of both IWCs and IWNs fall within the internationally recognised youthful population which are the age groups below 40 years. The Ghana Youth Policy defines "youth" as "persons who are within the age bracket of 15 to 35 years" (Ministry of Youth & Sports, 2010). Within the context of the Ghana Youth Policy, the result indicates that most of the informal economy workers can be described as youthful.

According to Annim, Mariwah and Sebu (2012), the number of dependent(s) refers to household members who consume from the same basket of food of the informal economy worker. Descriptive analysis of the data for number of dependents showed that the average number of dependents per informal economy worker was about three with a standard deviation of two dependents. The maximum number of dependents per informal worker household is nine. On the whole, the dependency ratio seems high. In this respect, the survey found that about 94 percent of the informal workers have at least one dependent. Furthermore, the study revealed that about 6.3 percent of the respondents have no dependents, 42.6 percent have between 1 – 2 dependents, 31.6 percent have between 3 – 4 dependents. Details of these statistics are presented in Table 13.

Table 13: Number of Dependents of Respondents

Dependents	Respondent's MPS Status					
	IWC		IWN		Total	
	N	%	N	%	N	%
No Dependent	19	2.9	22	3.4	41	6.3
1 - 2	87	13.3	192	29.3	279	42.6
3 - 4	135	20.6	72	11.0	207	31.6
5 - 6	55	8.4	35	5.3	90	13.7
7 & Above.	25	3.8	13	2.0	38	5.8
Total	321	49.0	334	51.0	655	100.0

χ^2 = 66.912; d.f= 4; p-value= 0.000
Source: Field Survey (2019)

In addition, the study found that respondents' pension contribution status is linked with the number of dependents they have (χ^2 = 66.912, d.f= 4, p-value= 0.000). An association (Crammer's V statistic = 0.320, p-value = 0.000) was observed for these two nominal variables. Particularly, proportions of IWC and IWN were found to be significantly different in terms of having one to two dependents at the 0.05 alpha level ($Z = -2.89$, $p - value = 0.0039$). This suggest that IWN (29.3%) have more of one to two number of dependents compared to the IWC (13.3%). Table 14 present a summary of all the Chi-square test of independence results and symmetric measures between the respondents' characteristics and their respective MPS status.

It can be deduced from the analysis that the number of dependents tends to be high for informal workers contributing to pension as compared to the non-contributors. The greater participation by IWCs may, probably, be due to their higher number of dependants and not necessarily to smoothen their consumptions when old. Studies (Odundo, 2008; Suwanrada, 2009) have shown that people invest in their dependents for their long-term financial security, especially for reciprocity during their old age.

Table 14: Results of Chi-Square Test of Independence

Variables	Chi-Square Test			Symmetric measure	
	Value	d.f	Sig	Crammer's V/Phi	Sig
Sex	9.453	1	0.002	0.120	0.002
Marital Status	105.991	6	0.000	0.402	0.000
Education	175.001	4	0.000	0.517	0.000
Age Groups	4.312	4	0.365	0.081	0.365
Dependents	66.912	4	0.000	0.320	0.000

Dependent variable: MPS status
Sources: Field Survey (2019)

Preliminary thematic analysis conducted on the characteristics of the informal economy workers in the study area showed similar results as the quantitative description. Various representatives of providers of MPS gave detailed information about the informal workers. The interview probed some demographics such as the age bracket, sex and educational levels of informal investors. In addition, MPS providers' familiarity with investment by informal workers, number or percentages of registered members and an explanation to numbers provided were inquired from key informants.

The interview with the key informants revealed that informal workers were between the ages of 17 to 55 years. This age range validates the quantitative finding and gives an indication that most of the informal workers are in their active stages in life consistent with the studies of Hu and Stewert, (2009) and Onyango (2014). Contributors' participation based on gender was inquired from the service providers. The key informants mentioned females as the higher contributing gender with a proportion of about seventy to eighty percent. Others explained men as the higher contributing gender with a percentage ratio of sixty to seventy. The difference in sex composition on a scheme, according to Shefrin and Thaler (1988), Lott and Kenny (1999) and Barber and Odean (2001) implies that men and women have different attitudes and behaviour towards pension saving and likely not to save at the same rate.

Service providers also pointed to low education on pension saving as well as the broad and improper structure of the informal sector as reasons for non-participation in MPS schemes. According to the key informants, the informal economy is broad with improper infrastructure and thus, lends itself as a good exploratory ground for education on the need to save for pension. Although these factors when utilised well served better than the reverse, a key informant recounted that the irregularity of the informal sector also posed a challenge regarding the type of education meted out:

> "*The interesting thing about the informal sector is that it is a broad spectrum. A doctor who sells spare parts at Abbossey Okai is in the informal sector. The cocoa farmer, trader and the like exhibit different characteristics which make it a bit challenging*". (CEO, PPT, Accra. 29th April, 2019).

The varied or wide spectrum of informal work suggests the presence of the ATA which states, as Moody (2012) and Novak (2012) observe, that the involvement in income-earning activity by informal workers guarantees them better qualities of life and a satisfying late life. This is reflected in the conceptual framework which expounds that informal economy workers through their partipation in the the micro pension savings enbled by the LCH, TPB, ITS and ATA would result in the accumulation of wealth leading to better qualities of late life.

Collins-Sowah *et al.* (2013); Adzawla *et al.* (2015) and Kumah *et al.* (2017) acknowledge the wide range of informal participants in Ghana including artisans, traders and farmers who are predominantly ill-equipped in terms of education and skills, and therefore, might respond differently to financial information. This assertion is no different from the key informant's view that the wide spectrum of informal works account for the differences in behaviour towards pension saving.

Service providers also pointed to their familiarity with informal workers. They indicated that there are existing good client relationships with informal workers, particularly, those in marketplaces and shops. They also pointed out that their good relationships are attributable to informal workers' misunderstanding and/or ignorance of the national insurance scheme - SSNIT. Service providers, therefore, capitalise on such ignorance to educate them on the need to subscribe to MPS. Additionally, enrolment on MPS by informal workers is aided via the discussions of their problems as well as the offer of a variety of feasible payment plans.

However, one key informant contradicted the assertion of the prevailing existence of good client relationships. This service provider stated that informal sector workers prefer the use of the personal or home savings scheme dubbed "susu" in local parlance. The reasons ascribed to such preference include low financial literacy and the fear of being defrauded by financial institutions. The informant's views are detailed below:

> *"There is hardly any dissemination of information by the industry as a whole down to the very people service providers are supposed to*

serve. This has resulted in a low knowledge base about savings for informal workers. A lot of them patronise "susu" scheme operators who more often than not defraud them. They are very skeptical about the financial industry and it is difficult to get to them. In Ghana, the informal sector constitutes about 90% of the workforce. It is a huge market and there is a lot of money. The system of collection and the knowledge gap are the key problems". (CEO, Prestige PT, Accra. 2nd May, 2019)

The above quote is important as it exposes the low level of education on pension among informal economy workers. The view of the informant on the low level of education and financial literacy among informal workers corroborates the findings of Hochguertel *et al*. (1997) that educational level and the level of information measures the level of risk one can tolerate in pension saving. Therefore, people who are more informed tend to invest more in long-term financial assets than less informed people as provided by the ITS (Lusardi & Mitchell, 2011).

In response to the percentage or total number of people registered with the different individual MPS schemes, the study probed for the ratio of informal clients and formal clients. The key informants indicated that the numbers enrolled with them consistently varied from 10 percent to 20 percent of informal client base. There were, however, two exceptions with a focus on informal workers, and the use of accessible methods with regard to payments.

The first indicated an 80 percent to 20 percent ratio of informal to formal client base. The stated ratio is due to the sole focus on informal sector workers by the service provider. Hence, their clientele is dominated by informal sector workers. On the issue of using mobile money transfer platforms as easy payment methods, two organisations offered such, each with a 30 percent informal sector client base. One service provider adopted a strategy identified as MOPA (My Own Pension Account) where customers paid through mobile money. The other provider had a similar strategy dubbed MOP (My Own Pension). The second organisation further explained that some formal sector workers accessed this product for their informal businesses as indicated:

> "*We have a product for the informal sector called the MOP (My Own Pension) where they use mobile money as a payment method. There are about 30 percent who effect their contributions via this method. This includes some people who have formal jobs and run informal businesses as well*" (Sales & Marketing Officer, UPT, Accra. 3rd May, 2019).

The above information from the informant emphasizes the importance of the mobile money system in informal pension delivery. The understanding gained fron this points to the varied composition base and type of clients of MPS providers. Many of those in the "formal-informal" group are more easily targeted by many of the services providers. On the other hand, as observed by Njuguna (2012), very few service providers target those solely in the informal group via the mobile money payment system. A similar strategy is implemented in many East African countries to reach informal workers to help improve their social and economic security (Kwena & Turner, 2013).

The study probed the types of informal activities that the workers engaged in. This was important as Kibet *et al.* (2009) acknowledged that type of employment increases or reduces the probability of pension savings. Similarly, Amaike (2016) argued that informal activities provide livelihood to thousands of urban dwellers. For these informal workers, it is the means of gaining access to adequate stock and flows of resources, including food, cash as well as opportunities to meet their basic needs. This makes investigation into the informal activities of the respondents crucial. The key issues discussed here cover type of informal enterprises, ownership and registration of business, reasons for engaging in informal and source of start-up capital for business.

The study found that majority of the workers (87.6%) operated only one type of informal enterprise, whilst 12.4 percent operated more than one enterprise out of the 655 valid responses (Table 15). The main types of informal workers identified included commercial drivers (24.4%), market traders (16.2%), hawkers and vendors (15.9%), "chop bar" operators/caterers (11.0%), and woodworkers (9.2%). Others included spare part merchants, beauticians, farmers, porters and musicians. Amaike (2016) noted that these livelihood activities create enough income for pension saving. Thus, over time, the savings accumulate and become a buffer that informal workers may depend on at old age for income security.

Table 15: Types of Informal Works by Pension Saving Status

Type of Informal Activity	Respondent's MPS Status: IWC		IWN		Total	
	N	%	N	%	N	%
Spare Part merchants	1	0.2	11	1.7	12	1.8
Commercial Drivers	153	23.4	7	1.1	160	24.4
Beauticians	12	1.8	38	5.8	50	7.6
Farmers	8	1.2	38	5.8	46	7.0
Hawkers & Vendors	34	5.2	70	10.7	104	15.9
Market traders	41	6.3	65	9.9	106	16.2
Woodworkers	12	1.8	48	7.3	60	9.2
Chop Bar Operators/Caterer	35	5.3	37	5.6	72	11.0
Porters	21	3.2	15	2.3	36	5.5
Musicians	4	0.6	5	0.8	9	1.4
Total	321	49.0	334	51.0	655	100.0

$\chi^2 = 215.132$; d.f= 9; p-value= 0.000

Source: Field Survey (2019)

The Chi-square results show that a person's status as a pension contributor or otherwise is not independent of the type of informal activity one engages in ($\chi^2 = 215.132$, d.f= 9, p-value= 0.000). The significance of the effect was also found in the Cramer's V of 0.573 with a corresponding p-value of 0.000. The breakdown of the frequencies shows that the proportion of commercial drivers was significantly different from the proportion of beauticians ($Z = 2.57,\ p - value = 0.0101$), woodwork ($Z = 2.50,\ p - value = 0.0125$), "chop bar" operators ($Z = 2.35,\ p - value = 0.0188$) and porters ($Z = 2.52,\ p - value = 0.0118$). However, for each of the type of informal activity, there was no significant difference between the proportions of IWC and IWN.

This finding is in line with Mayhew's (2003) finding that the industry sector of a worker, whether public or private, determines his/her pension scheme enrolment. Several evidence by reseachers like Afenyadu (2014), Adzawla *et al.* (2015) and Kumah *et al.* (2017) have shown that people engaged in different informal jobs and have made significant strides in saving for their old age. For instance, informal activity such as commercial drivers and porters have higer numbers contributing to pension savings compared to other categories of informal type of activities.

It was also observed that those who operated more than one enterprise (12.4% out of 655 responses) complemented their main businesses with other minor businesses such as hawking (24.7%), trading (23.5%), farming (14.8%), dressmaking (1.2%), hairdressing (13.6%), commercial driving (6.2%), catering services (7.4%), spare part merchants (2.5%) and woodworks (4.9%). Such a wide range of informal work affirms the diversity found in the informal economy of Ghana (Osei-Boateng & Ampratwum, 2011). In addition, many of the selected informal workers were found to have been engaging in their chosen enterprise for a mean number of five years with a standard deviation of three years. The minimum was one year and the maximum number of years was 34.

The ILO's (2004) definition of informal economy enterprises was based on three criteria. They include legal organization of the enterprise, their ownership and the type of accounts they keep. This necessitated the study to inquire into the ownership of informal businesses in the Greater Accra Region of Ghana. Results from the study show that about 81.4 percent of the sampled informal workers are sole owners of their businesses and only 14.5 percent operated family businesses (Table 16). This characteristic of the informal economy work was noted in Harding and Jenkins' (1989) and Ofori's (2009) studies that the informal economy is predominantly made up of self-employed workers.

Table 16: Ownership of Informal Businesses

Type of Business Ownership	Frequency	Percent
Sole owner	533	81.4
Family	95	14.5
Partnership	16	2.4
Cooperative	5	0.8
Other (specify)	6	0.9
Total	655	100

Source: Field Survey (2019)

The assertion that informal economy works are unregistered and unlicensed, as Anuwa-Amarh (2015) expound, was probed. The results show that more than half (61.1%) of the workers had registered their business with at least one state institution. As presented in Table 17, these institutions are the Registrar-General's Department, Ghana Revenue Authority (GRA), Social Security and National Insurance Trust (SSNIT), Metropolitan/District Assembly or Social Welfare. Amongst these institutions, about half of the workers dealt closely with the Metropolitan or District assemblies. This finding disputes the assertion made by Afenyadu (2014), Asante (2016), ILO (2005) and Mpofu (2014) that informal sector works are generally unregistered businesses. The contradiction seems to suggest that informal workers are beginning to understand the need to formalise their operations in order to enjoy the benefits that comes with it.

Table 17: Institutions Registering Informal Works

Registration Institution	Frequency	Percent
Registrar General Department	90	22.5
Tax Administration	75	18.8
SSNIT	21	5.3
Metropolitan/District Assembly	200	50.0
Social welfare	14	3.5
Total	400*	100.0

*Multiple responses

Source: Field Survey (2019)

About 38.9 percent of the workers sampled were found not to have registered their business with one state institution or the other. The reasons for their failure to register include the number of requirements to complete registration (15.8%) and the high cost of registration (24.1%). As presented in Table 18, other reasons for failure to refister include demand for tax and accounting practices (25.6%) and the registration process (30.1%) itself.

Table 18: Reasons for not Registering Informal Business

Reasons	Frequency	Percent
The process of being registered	40	30.1
Too many requirements to complete registration	21	15.8
I have to pay too much to register	32	24.1
State will ask for tax and accounting practices	34	25.6
It could be bad for my business	5	3.8
I do not think I need to register my business	1	0.8
Total	133*	100.0

*Multiple responses
Source: Field Survey (2019)

The failure to register business notwithstanding, informal workers assigned several different reasons for engaging in their chosen informal activity.

More than one-fourth of respondents in this study attributed their main reason for engaging in their chosen business to the fact that it makes them the boss of their own work (31.4%). Besides, they are provided a good income opportunity (25.6%). Table 19 lists other reasons such as lack of formal work (17.6%), family tradition (12.7%) and additional income (4.7%).

Table 19: Main Reasons for Engaging in Informal Business

Main reason	Frequency	Percent
Could not get formal work	110	17.6
I need additional income	29	4.7
Business provide good income opportunity	159	25.6
It is a family tradition	79	12.7
I prefer to be my own boss	195	31.4
Business does not require much capital	13	2.1
Trained at school or in workplace especially for this job	20	3.2
Retired from another job	17	2.7
Total	622*	100.0

*Multiple responses

Source: Field Survey (2019)

According to Atherton (2012), the role of informal economy work seems obvious in development since any barrier to financing informal activity may have consequential effect on the worker, the business and the nation at large. Burzacka and Gasiorowka (2016) is of the view that financing these micro businesses implies launching the production and presentation of goods and services to the market. This was a basis for the study's probing of the start-up capital of the informal workers. The study found that many of these informal workers started their business with financial capital from varied sources. Important among the sources of capital are one's own savings (29.2%) and loans from friends and relatives (28.1%). It was also observed that some informal workers did not need any form of money to start up their business.

They constituted about 16.5 percent of the sample. Table 20 presents the other sources of capital.

Table 20: Sources of Capital for Informal Businesses

Source of Start-up capital	Frequency	Percent
No money needed	108	16.5
Business was inherited	49	7.5
Own savings	191	29.2
Loans from friend and relatives	184	28.1
Contribution from partner	54	8.2
Sale of assets	47	7.2
Loans from commercial bank/other financial institutions	8	1.2
Government lending agencies and programs	4	0.6
Others	10	1.6
Total	655	100.0

Source: Field Survey (2019)

MPS Institutional Arrangements

Thirty-three items identified to motivate pension savings were assessed by informal economy workers contributing to MPS. The 33 items scale scored a Cronbach's alpha value of 0.823. The 33 items scale passed the minimum Cronbach's alpha value of 0.500 as recommended by Nunnaly (1978) and Sekaran (2003). The Cronbach value indicates that the various items constructed to measure institutional mechanism variables are positively correlated to one another. In addition, most of the inter-item correlations values fell within the minimum recommended range of 0.2 to 0.4 (Apendix D) as an alternative reliability check postulated by Briggs & Cheek (1986).

In order to conduct a PCA, the items measuring institutional mechanisms were subjected to validity checks. First the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was estimated to be 0.784, which was above the minimum threshold of 0.6, thereby, indicating that the sample was adequate for PCA, Pallent (2002) notes. Finally, the Barlett's test of shericity yielded an approximate Chi-square statistic of 3658.863 with 231 degrees of freedom and a corresponding p-value less than the 0.005, indicating statistical significance.

Using PCA, eleven components were extracted out of the 33 items. Cumulatively, these components accounted for approximately 80 percent of total variability in the responses. The components had the eigenvalues greater than one, as required for PCA by Pallant (2005). The scree plot at Appendix D confirms the number of components extracted. In Table 21, the items with high loading for each component are presented.

Table 21: **Results from Principal Component Analysis – Institutional Mechanisms (Factor loading)**

Items	Extracted Components										
	1	2	3	4	5	6	7	8	9	10	11
Travelling time and cost favored your consideration to enroll in a saving scheme	0.796										
Your proximity to financial institution motivate you to save	0.792										
The ease in opening account motivated you to join a saving scheme	0.724										
Favorable transaction charges help you to save	0.701										
You easily satisfy the eligibility criteria to a saving scheme	0.662				0.418						
Financial institutions create awareness of pension products to encourage savings	0.602									0.567	
Having a better investment return fosters saving		0.871									
Enjoying complimentary services like health insurance and access to loans motivates saving		0.738									
The interest rate earned on savings is acceptable		0.643									
Entitlement to a mortgage facility encourages saving		0.628									
The tax exemption component on saving scheme is motivating		0.556			0.352						
Pension saving providers are appealing especially, staff treatment, supports and "automatic" enrolment			0.863			0.332					
Your contributions are secured			0.863			0.332					
The rules regarding withdrawals are acceptable		0.401	0.754								
You save more because the claim payment procedure are simple				0.95							
Prompt feedbacks from financial institutions make you save more				0.95							
Periodic financial statements offered motivates your savings				0.741							
The financial information you received enabled you to choose an appropriate pension plan					0.757						
Tutorials on simple financial calculations help you to save	0.38				0.732						
Education on how to make contribution inspired your saving		0.383			0.548						0.382
You receive pension education which inspires saving	0.411				0.534						

Table 21 continued.

Items	Extracted Components										
	1	2	3	4	5	6	7	8	9	10	11
Information on the benefit of pension savings encourages you to saving						0.947					
Education on how to compute the return on your investment motivates you to save						0.946					
You had a reward after meeting a saving target							0.938				
Promotional rewards/prizes motivate saving							0.938				
You are encouraged to save because of monetary incentive from institution								0.945			
Gifts from institutions entice you to open account								0.945			
You are confidence your institution will manage ali kinds of investment risks									0.973		
There is integrity in the financial market/Iinstituions									0.973		
Sound management of the economy boost my confidence to save										0.825	
There is integrity in the political system	0.356									0.808	
Your institution is the safe place to keep money											0.733
Rules regarding borrowing/loans are acceptable	0.469										0.628

Source: Field Survey (2019)

Extraction Method: Principal Component Analysis

The items in the first component tell the extent to which travel time, transaction charges, proximity to institutions, ease of opening account, eligibility criteria and awareness creation inform the decision of informal workers to enrol on MPS schemes. The six item loadings are positively correlated to each other and together, they constitute a latent variable call access provision. Access provision in MPS has its theoretical foundation in the Institutional Theory of Saving which, noted by Beverly and Sherraden (1999) and Sherraden (2010), enphasizes items that enable a person to utilise and interact with institutions.

Uthira and Manohar (2009), Mackellar (2009) and Shanker and Asher (2009) mentioned awareness creation, distance to institutions and removal of eligibility criteria as some of the few items that provide access to informal workers to contribute to MPS. Some scholars like Curley *et al.* (2009), Onyango (2014), Adzawala *et al.* (2015) and Kumah *et al.* (2017) found access provision as an important criterion in attracting informal workers to contribute to MPS. Refering to the conceptual framework of this study, it can be deduced that access provision is one of the institutional mechanisms prescribed by the the institional theory of saving which motivate informal workers to contribute to MPS, thereby, creating pension wealth for income security and better quality of life in retirement.

In the second component, it can be observed that returns on investment, complementary services, acceptable interest rate, mortgage facilities and tax exemptions are positively linearly related. According to Sherraden (1991) and Beverly and Sherraden (1999), these items form a package of institutional incentives aimed at motivating informal workers to contribute to pension saving as stipulated by the institional theory of saving. Han and Sherraden (2007) and Curley *et al*. (2009) found incentive packages offered by institutions important if low-income workers are to make meaningful savings towards their retirement income security.

Items loading high on the third and fouth components describe institutional processes and facilitations respectively. The item loadings on both components are related to each other. The fifth component comprised four items, namely financial information, financial calculation, pension and contribution education. The item loadings in the fifth component constitute latent variable called general financial information. The general financial information construct has its theoretical underpinning in the institutional theory of saving. Researchers such as Curley *et al*. (2009) and Njuguna and Otsola (2011) maintained that the more financial information people have on savings, the more likely they are to save.

Similarly, under the sixth component is a hiden variable called specific financial information. The two items under the specific financial information include information on pension benefit and calculation of investment return. Components seven and eight have a common theme, dubbed, "expection of reward". As Lambe *et al*. (2002) and Schreiner and Sherraden (2007) expound, this is supported by the institutional theory of saving which argues that building implicit or explicit desires in people so that they meet some saving targets in return for a reward propels them to save more. Han and Sherraden (2007) and Curley *et al*. (2009) found that when institutions build expectations in low-income savers, they tend to save more.

Going forward in the discussion, the underlying latent variables in components nine, ten and eleven are financial institution security, economy wide security and safe institutional rules respectively. In the financial institution security, confidence in institutions correlates positively with integrity in the financial market/institution. The economy-wide security is made up of positive linear combination of sound management of the economy and integrity in political systems. Finally, safe institutional rules are defined by a combination of acceptable saving rules and a safer financial institution. These latent variables, according to Beverly *et al.*, (2008) and Mohd *et al.* (2010), derive their motivation from the institutional theory of saving which explains that institutions which provide safe place, sound management and integrity for people to keep money increase savings.

In order to determine which of the institutional mechanisms contributes more to the total variations in the pension saving, it became necessary to conduct a multiple regression analysis and in extension to determine the effect of each institutional construct in getting informal economy workers to enroll on to the tier-three MPS scheme. Similar studies by Han and Sherraden (2007), Curley *et al.* (2009) and Magendans *et al.* (2016) have used the multiple regression analysis mainly to identify the change in the total variation explained by the independent variables as they are included in the model.

Subsequently, the study tested the statistical significance of the extracted institutional constructs by regressing each latent variable against the log of the amount saved as the dependent variable. Those institutional constructs which did not show any statistical significance were droped from the model since they did not contribute to the total explained variation. The descriptive statistics that underpin the regression are presented in Appendix D. Tests on the coefficients indicated that access provision ($\beta = 0.092, t = 2.843,\ p - value = 0.005$), institutional incentives ($\beta = 0.080,\ t = 2.459,\ p - value = 0.014$), general financial information ($\beta = -0.073,\ t = -2.244,\ p - value = 0.026$), financial institution security ($\beta = -0.073,\ t = -2.167,\ p - value = 0.031$) and economy-wide security ($\beta = 0.07,\ t = 2.107,\ p - value = 0.036$) showed statistical significance at the 5 percent level. Table 22 presents the regression coefficients of the extracted institutional constructs.

Table 22: Coefficients of Regressed Institutional Mechanisms

Institutional Variables	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
(Constant)	1.43	0.032		44.605	0.000
Access provision	0.092	0.032	0.155	2.843	0.005***
Institutional incentives	0.08	0.033	0.136	2.459	0.014**
Gen. financial information	-0.073	0.033	-0.124	-2.244	0.026**
Fin. Institution security	-0.073	0.034	-0.123	-2.167	0.031**
Economy-wide security	0.07	0.033	0.119	2.107	0.036**

Dependent Variable: logamtsave; *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1
Source: Field Survey (2019)

The estimated coefficients of access provision have a significant effect on pension saving. This means that the more access to MPS is extended to informal economy workers, the more they save towards their retirement. Sherraden (2010) also found that making it easier to open an account or reducing the fees associated with maintaining an account are particularly significant in providing access to low-income account holders to contribute to MPS. The items defining access provision are concerns raised by Afenyadu (2014), Asante (2016) and Kumah *et al.* (2017) as impeding access to MPS in Ghana. They explained that low access to MPS is due to low awareness level.

Similarly, the institutional incentive coefficient implies that the more incentives in the form of a combination of returns on investment, complementary services, acceptable interest rate, mortgage facilities and tax exemptions for informal workers are offered, the more they are likely to save for retirement. This finding is in agreement with the studies of other scholars like Han and Sherraden (2007) and Turner and Manturuk (2012). They found that incentives/disincentives affect participation in MPS schemes. In addition, Poterba and Samwick (1999) recognise the effect of marginal tax rate on financial assets as a significant incentive for pension saving.

General financial information exhibits a significant inverse relationship with pension saving. It means that the more general financial information (financial information, financial calculation, pension and contribution education) given to informal economy workers, the more unwilling they are to save for retirement. Evidence by Bernheim and Garret (1996) and Han and Sherraden (2007) have been found to the effect that employees who are provided with specific financial information have higher participation levels in pension plans compared with those who received more general form of financial information. The TBP, noted by Macleod *et al.* (2012), support this finding on the basis that behavioural intention or attitude is shaped by the amount of financial information received which may account for the varied savings outcomes.

The finding on the general financial information supports the argument raised by Lusardi and Mitchell (2007) that financial education cannot single-handedly improve individuals' financial literacy levels as well as their savings behaviour since there can be vast diversity of outcomes. However, the finding is inconsistent with the Institutional Theory of Saving because the theory, Sherraden (1991) and Beverly and Sherraden (1999) argue, professes that individual's financial or real asset accumulation is dependent on information offered by institutions.

Likewise, the estimated coefficient for financial institutions security inferred that the less confident informal workers feel about financial institutions and integrity in financial markets, the more willing they are to save. Mohd *et al.* (2010) and Wack (2014) found such occurance as financial security risk and a threat to the pension saving outcomes. On the part of the economy-wide security, its estimated coefficient suggests that the more the economy is managed soundly with integrity in political systems, the more informal workers save for retirement. This is consistent with the ITS as Han and Sherraden (2007) and Beverly *et al.* (2008) described these security constructs as capable of inspiring saving and wealth accumulation for low income earners.

The findings show that institutional mechanisms such as access provision, institutional incentives, general financial information, financial institution security and economy-wide security have consequential effect on pension savings of informal economy workers. As illustrated by the conceptual framework of the study, there are several institutional mechanisms proposed by the Institutional Theory of Saving. However, these significant latent variables of institutional mechanisns determine the accumulation of MPS wealth for better quality of life and income security in later life.

The five significant latent variables of institutional mechanisms jointly explain ten percent of the total variation in the quantum of money saved in pension schemes at a time. They produced an adequate model for the dependent variable excluding any demographic variable (F statistic = 6.764, p-value = 0.000). The significance of demographic variables including sex, age, marital status, level of education and number of dependents were tested separately in the regression model.

Landau and Everitt (2004) noted that categorical explanatory variables can be used in regression modeling as long as they are represented by dummy variables. In this study, the nominal variables were transformend into sets of dummy variables. Each of the dummy variables relates to a single category of the original variable and takes the value "1" when the subject falls into the category and "0" otherwise. The category that is ignored in the dummy coding represents the reference category. Tin (2000) and Shafii (2007) applied the same approach to test for significance of categorical variables in their studies. Consequently, this study converted the nominal variables of sex, marital status and level of education into dummy variables so that they can be tested in the regression model. Table 23 present the list of dummy variables with their reference categories.

Table 23: Dummy Variables included in the Regression

Dummy Variable	Reference category	Variables included in the model
Sex	Female = 0	Male = 1
Marital status	Single/others = 0	Married = 1
Level of education	No education = 0	Atleast basic education = 1

Source: Field Survey (2019)

The summaries of the socio-demographic variables underping the second regression model are presented in Appendix D. Beside age, the estimated regression coefficient of sex (Male) ($\beta = -0.473,\ t = -7.326,\ p-value = 0.000$), level of education (at least basic eduction) ($\beta = 0.744,\ t =$

$7.103,\ p-value = 0.000$), marital status (married) ($\beta = -0.247,\ t = -2.429,\ p-value = 0.016$) and number of dependents ($\beta = -0.045,\ t = -2.077,\ p-value = 0.039$) showed statistical significance at the 5 percent level. Table 24 presents the results of the estimated coefficients in the second regression model.

Table 24: Coefficients of Regressed Socio-Demographic Variables

Socio-demographic Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.1	0.168		6.553	0.000
Sex	-0.473	0.065	-0.352	-7.326	0.000***
Level of education	0.744	0.105	0.338	7.103	0.000***
Marrital status	-0.247	0.102	-0.114	-2.429	0.016**
Dependents	-0.045	0.022	-0.095	-2.077	0.039**
Age	-0.002	0.003	-0.035	-0.767	0.444

Dependent Variable: logamtsave; *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1
Source: Field Survey (2019)

It can be inferred from the results in Table 24 that males and married informal economy workers save less for pension compared to female and those not married respectively. This finding argrees with the studies of Hungerford (1999), Anderson and Baland (2002) and Lee and Pocock (2007) on the assertion that women are perceived to save more than men. Similarly, Tin (2000), Mckay and Kempson (2003) and Adzawla *et al.* (2015) identified a negative relationship between marital status and pension savings. The explanation offered was that married couples may spend more on children's expenses and will, therefore, have little or no money to save.

The study also found that education is positively associated with pension saving. The implication is that people with at least basic education save more compared to those without education, which is consistent with previous studies by Han and Sherraden (2007), Curly *et al.* (2009) and Adzawla *et al.* (2015). Results from Table 24 also established that number of dependents per household is inversely related to pension savings. This means that informal economy workers with more dependents save less. Heekenda (2016) found similar relationship, indicating that higher number of household dependents has a negative effect on pension savings. The conceptual framework recognises the effects of socio-demographic variables such as sex, level of education, marital status, dependants and age, acting on the LCH, TPB, ITS and ATA to create pension wealth that guarantees income securities in later life.

The study further observed that demographic variables command a lot of predictive power over the institutional constructs. They explained 35.2 percent of the total variations in the dependent variable. The model for the socio-demographic variables was found to be adequate with an F – statistic of 34.880 and a corresponding p-value of 0.000. Inspection of Table 25 gives an idea of the model summary for the institutional constructs, the demographic variables and the combination of the two.

Table 25: Model Summary for Institutional Constructs together with Demographic Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.316	0.100	0.085	0.56534
2	0.597	0.352	0.342	0.47947
Both	0.621	0.385	0.365	0.47105

Dependent Variable: logamtsave
Source: Field Survey (2019)

Even though the model was strengthened by the inclusion of the demographic variables, they reduced significantly the predictive powers of the institutional mechanisms. The change in R square was 3.3 percent. The combined institutional constructs and the demographics yielded an F-value of 18.804 with p-value of 0.000. Table 26 presents the combined estimated coeefficients of the variables under consideration and their level of significance.

Table 26: Coefficients of Institutional Constructs together with Demographic Variables

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.430	0.032		44.605	0.000		
	Access Provision	0.092	0.032	0.155	2.843	0.005***	0.996	1.004
	Institutional Incentives	0.080	0.033	0.136	2.459	0.014**	0.965	1.036
	Gen. Fin. Information	-0.073	0.033	-0.124	-2.244	0.026**	0.960	1.041
	Fin. Inst. Security	-0.073	0.034	-0.123	-2.167	0.031**	0.912	1.096
	Economy wide Security	0.070	0.033	0.119	2.107	0.036**	0.926	1.080
1 & 2	(Constant)	1.082	0.170		6.377	0.000		
	Access Provision	0.048	0.027	0.082	1.771	0.078*	0.957	1.044
	Institutional Incentives	0.044	0.028	0.074	1.580	0.115	0.939	1.065
	Gen. Fin. Information	-0.027	0.028	-0.047	-0.989	0.323	0.926	1.079
	Fin. Inst. Security	-0.048	0.028	-0.081	-1.700	0.090*	0.900	1.111
	Economy wide Security	0.053	0.028	0.091	1.926	0.055*	0.910	1.099
	Sex	-0.45	0.064	-0.337	-6.994	0.000***	0.881	1.135
	Education	0.678	0.107	0.307	6.352	0.000***	0.878	1.139
	Marital status	-0.215	0.104	-0.099	-2.069	0.039**	0.894	1.118
	Dependents	-0.042	0.022	-0.087	-1.906	0.058*	0.973	1.028
	Age	-0.001	0.003	-0.013	-0.276	0.783	0.964	1.037

Dependent Variable: logamtsave; *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1
Source: Field Survey (2019)

The validity of the coefficients from the regression analysis is founded on some assumptions. First, the assumption of linearity of residuals is met. This is observed in a scatter plot of standard residuals against predicted or fitted values in the regression for the log of the average amount saved at a time. The definition, as Coake and Steed (2003) note, is that, there should not be any clear pattern or relationship between the residuals and the dependent variable. As observed in Figure 5 (b), the scatter plot generated a random pattern.

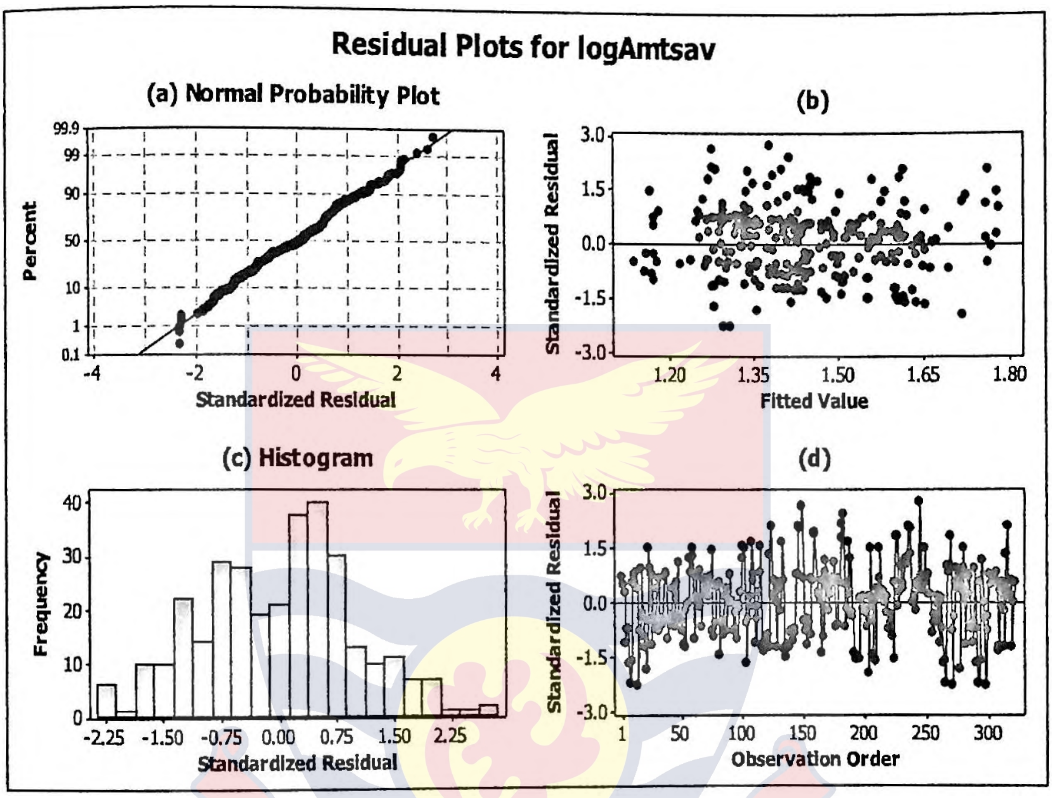

Figure 5: Graph of Residuals Diagnosing Assumption Underlying the Regression Model

Source: Field Survey (2019)

Second, the residuals are observed to have a constant variance. This is depicted in a plot of the standard residuals versus the observation order in Figure 5 (d). The residuals appear scattered randomly about the zero line. The third assumption is that the residuals are normally distributed. The plot of the standard residuals for the dependent variable presented by a normal Q-Q or probability plot showed that most of the residuals generated from the regression line are on the right upward-sloping straight line. This indicates that the normality of the residuals is ensured (Figure 5 (a)).

In addition, the Shapiro-Wilk test was used to diagnose normality of the residuals. The null hypothesis that the residuals are normally distributed was retained because the p-value (0.090) for the Shapiro-Wilk test statistic (0.992 with degrees of freedom = 321) was greater than the significance level ($\propto$= 0.05). Alternativley, the Kolmogorov- Smirnov statistic was found to be 0.054 with 321 degrees of freedom and p-value of 0.054, indicating normality. The mean of the residuals was 0.000 and the variance, 0.988. Next, there appears to be no serious multi-collinearity among the explanatory variables. A correlation analysis of the independent variables is displayed at appendix D. In addition, all the VIF values for the independent variables were below 10, indicating that the assumption of no multi-collinearity is met.

Evidence from the key informant interviews suggested that companies have put in place specific arrangements to increase informal sector worker access to the MPS schemes. These arrangements included education and training, effective communication, flexible and attractive packages and mobile and accessible banking. These arrangements are as expected and supported by the Institutional Theory of Saving. Sherraden (1991) and Beverly and Sherraden (1999) postulate that the theory provides that an individual's financial or real asset accumulation leading to retirement income adequacy is dependent upon the access, incentives, information, facilitation, expectation, restrictions and security, afforded by institutions.

With the education and training, key informants explained that they sensitize a margin of the informal sector about the need to enroll on MPS.

Others organize weekly education, or visit different informal working areas every quarter of the year. There were others who involved themselves in labour union meetings to use that as a platform to educate members. Some also use media platforms to educate potential clients.

> "*We go to them to do workshops. There is a knowledge gap so we go to the lorry stations, unions and educate them to be on the pension scheme. We paint a picture for them to know that it is crucial for them to do something*" (CEO, Prestige PT, Accra, 2nd May, 2010)

> "*We visit them to educate them. We also advertise on radio... We have a P.A. system that we use in the market to disseminate information about pension saving. We relate to those who live around and do not save so that they understand*" (Contribution Administrator, EPT, Accra, 13th May, 2019).

These quotes from key informants emphasize the importance of pension information provided by service providers. Informal workers, therefore, feed on this information as their main source of knowledge about pension saving and financial wealth acquisition. This finding is consistent with the Institutional Theory of Saving which, according to Beverly and Sherraden (1999) and Njuguna and Otsola (2011), has information provided by institutions as one of its dimensions in pension wealth accumulation. This assertion is portrayed by the conceptual framework that financial information leads to the build-up of pension wealth for later life consumption.

Key informants also reached out to their clients via telephone calls and text messages to remind them about payment. Others had flexible and attractive packages for clients. They cited some examples as; easy access to their accounts, the use of collaterals for mortgage and prompt transfer into individuals' accounts without penalties when contributors cash-out money. Some key informants also reported offering insurance policy packages, loan schemes and annual bonuses for consistent contributors. Others mentioned the use of mobile and accessible banking as arrangements put in place for clients to contribute to pension saving.

Another key informant's strategy was to reach out to meet clients, advertise, organise staff visits to the markets as well as homes to educate prospective contributors on pensions. Others have extended branch networks in almost all the regions of the country. All these institutional arrangements mentioned by the key informants are mainly incentives, facilitations, access provision and information. These are core to the Institutional Theory of Saving observed by Sherraden (1991) and Beverly and Sherraden (1999), and thus support pension wealth build-up for retirement income security and quality of life as depicted by the conceptual framework of this study.

Information provided by key informants on motivation to informal investors to facilitate pension saving were varied. Some explained what retirement entailed to their customers and stressed the need to prepare for it. In addition, they outlined the structures and processes involved in the MPS to their clients. Other key informants explain the benefits of the scheme to the contributors. They pointed out the fact that one cannot work and earn an income past a certain age and with an improving life expectancy, there is the need to prepare for the future so as not to be a burden on family members. One organisation had a special package dubbed "On the Money". This talks about animals and their characteristics in relation to human actions and inactions. In addition to this, some key informants update contributors' transactions via account statements as well as text messages. Other informants reported that some institutions which offer full financial services provided publicity packages as well:

> "*We publicise ourselves as much as possible. We tell them we are the pension experts. We see ourselves as the one-stop shop for all financial needs. We advise on how to plan your finances, pension and make sure they are treated well. We provide them with statements and also meet to educate them*" (Business Development Unit, PT, Accra, 6th May, 2019).

According to the key informants, some of the incentives that motivate pension savings of informal investors are souvenirs such as caps, T – shirts, branded mugs and pens. Other mentioned incentives such as competitive returns on savings, good services and provision of timely information. Together with inducement packages such as T-shirt after signing up, funds statement as collateral for land, mortgages and 50 percent discount on car insurance were provided by other organisations. Interest rate and assured security, health tips and exercises were also given by another organization.

However, there were other key informants who indicated that some instituions do not give incentives. The reason is that financial institutions need funds to build up such incentive packages. Therefore, if they use incentives to entice people to register and cannot sustain, then that means they eventually will lose their customers. In this regard, a key informant explained:

"*... If a prospect starts contributing we let them know who is in charge of their scheme so that when the company does not exist, they know where to go. We also share our mantra great health and great wealth is equal to great retirement with contributors. To realise this mantra, we give them health and exercise tips to keep healthy*" (CEO, Prestige PT, Accra, 2nd May, 2019).

The implication of this observation is centred on security and complementary services that institutions provide for their clients. It can be deduced that institutions make it a priority to make their clients feel comfortable, especially by giving assurances that their deposits are secured and could be retrived in case of liquidation as narrated by the key informant. A similar finding was reported by Beverly *et al.* (2008) and Baker (2009) that freedom from financial security risks and health risks leads to more savings. This is in agreement with the ITS which has security provided by institutions as one of its dimensions. This can be traced to the conceptual framework of the current study. It illustrates that security offered by pension institutions lead to the accumulation of pension wealth. This eventually leads to securing a better retirement income and quality of life at old age as illustrated by the conceptual framework of the study.

Security arrangements, according to the key informats, were assured and enforced by the Ghanaian law. The applicable law dictates that MPS providers as trustees do not handle money but save with other financial institutions like banks. Other organisations assure their customers of the security of their contributions that such funds are managed by other financial institutions and a regulatory body (NPRA). For instance, a key informant stated:

"*The law helps us to deal with it. Per the law we as trustees don't need to handle the cash so we do a lot of paper work. The money goes to the custodian. The law states categorically where we have to invest your money. If you go with the law, your money is safe. The good thing is that we report to NPRA*" (CEO, PPT, Accra, 29th April, 2019).

"*The constitution makes provision for that. The NPRA is very strict on the laws. They come to audit our account every three months. We are not the custodians of those monies. Their accounts are being managed by a different financial institution*" (Sales & Marketing Officer, UPT, Accra, 3rd May, 2019).

It is evident from their assertions that all the pension schemes providers are aware of the law guiding retirement pension in Ghana. This has made their operations valid in conjunction with the National Pension and Regulatory Commission (NPRC) as they are registered with them.

The individual facilitation processes as explained by the key informants were shorter registration. Within six hours, forms were filled, registration completed and clients provided with certificates with uniquely identifiable numbers. Subsequently, identification cards were issued on a later day. One informant pointed out that, in addition to the process stated above, a confirmatory text message is sent to the new registrant. Furthermore, this provider was developing software that would enable field staff to register informal workers at their own places.

Yet still, other key informants reported that they have service-level agreements to expedite the timeframe within which a particular service such as cashing out money for a client is rendered. They reported that sale agents in other organisations operate the mail system and call centers to interact more easily with clients. Some organisations use an MTN mobile app to reach their customers. In this respect, a key informant noted:

> "*We are option 9 when you dial *170# on the MTN mobile app. To enroll, we just need your name, address and the contribution you want to make.*" (Contribution Administrator, EPT, Accra, 13th May, 2019).

This quote affirms the facilitation dimension as established by the Instutional Theory of Saving. Beverly *et al*. (2003) alluded to facilitation as an assistance that is offered by institutions to encourage saving, especially making saving "automatic" similar to what the key informant reported. This finding is consistent with Cohen and Sebstad (2005) and Matul *et al*.'s (2011) studies that institutional facilitation are responsive to clients' decision in joining saving schemes.

CHAPTER SIX

MOTIVE FOR SAVING IN MICRO PENSION SAVING SCHEMES

Introduction

The primary focus of this chapter is to find answers to the second objective of this research. The objective focuses on the motives for saving in pension schemes. The specific issues explored are identifying the main motive for enroling in MPS schemes, choice of saving vehicle, accumulated savings, and planned use of savings as well as the means of survival for non-savers after retiring from work.

The basis for investigating the motives of informal economy workers saving in MPS schemes is founded on the theoretical assumptions of the LCH. The LCH, observed by Modigliani and Brumberg (1954) and Jappelli (2005) argues that the core motive for saving is to accumulate wealth for later expenditure and, more specifically, support consumption at the habitual standard during retirement. The logic in the LCH is, therefore, investigated by analysing the motives behind the saving behaviour of informal economy workers.

The issues in this chapter were analysed using the concurrent mixed method approach which employed a blend of descriptive statistics, principal component analysis, multiple regression analysis and thematic analysis on some of the issues of motives of saving, channels of saving and accumulated savings to provide clarity. The analysis was based on varied sample sizes because of multiple responses. The issues of the deployment of interval scales for assessment of motives for saving and other categorisations were analysed from the aggregate level and later disaggregated using pension saving status. Thematic analysis was performed on the qualitative data. Key themes on motives of saving in MPS scheme were grouped based on sex and level of experience of key informants in dealing with informal workers.

Motives for Pension Saving

In order to investigate the motive behind informal economy workers' saving in pension schemes, it was important to first determine whether informal workers save or keep money from their income-earning activities. According to Han and Sherraden (2007) and Kane (2014), a person's ability and willingness to set money aside is a function of many factors that stimulate the desire to invest or save for any cause.

Out of the 655 views solicited, comprising both IWC and IWN, 72 percent said they were able to keep or save money. This statistic gives an impression that majority of the informal workers are able and willing to save as evidenced by some studies like Choi *et al*. (2016) and Lugilde *et al*. (2017). The finding is also consistent with the assumption of the LCH, which according to Mpofu (2014) states that during the consolidated phase of the life cycle, most individual are possibly in an active service. Therefore, they may be in position to save part of the income earned for various short- and long-term objectives. At this stage, Yousolf and Sabri (2017), posit that individuals' income will be greater than consumption causing pension savings to reach its maximum just before retirement.

However, out of the percentage of those who save, close to 38 percent do not save at regular intervals. Seventeen percent, 11 percent and 19 percent save every day, every week and every month respectively. The finding appears to support the assertion by Ping (2013), Afenyadu (2014), Onyango (2014) and

Adzawla *et al.* (2015) that informal workers are not regular savers even though they make some effort to set money aside.

The study also explored why some informal workers fail to save. It was observed that 28 percent of the workers fall in that category. The main reasons why they are unable to save were due to the small amount of income earned (32.8%), ignorance of saving (16.9%) and high number of dependents to cater for (11.5%). Other reasons are provided in Table 27. The reason for low incomes featured in the findings of Otoo et al. (2009) and Azawla *et al.* (2015), while Darko (2016), Aboalik (2017) and Kumah *et al.* (2017) linked the reason for non-saving to low benefits in saving schemes.

Table 27: List of Reasons for not saving among Informal Workers

Reasons for not saving	Frequency	Percent
Institutional problems: lack of trust, collapse of banks	16	8.7
High cost of living	13	7.1
High dependents	21	11.5
Low Income	60	32.8
Low Interest rate	18	9.8
Lack of education (ignorance)	31	16.9
Market is too bad (poor sales)	24	13.1
Total	183	100.0

Source: Field Survey (2019)

Evidence from the key informant interviews also provide similar reasons for why the informal sector workers do not save in MPS schemes. The main reasons mentioned were issues related to trust and the meagre earnings of informal workers. The key informants pointed to the privately held status of most MPS which discouraged enrolment for fear of being duped. They also recounted that other peoples' bad experiences with microfinance companies as well as miseducation regarding SSNIT benefits discourages people from enrolling. In connection with this, a key informant noted:

> "*Per the very characteristics of the informal sector, those who understand will contribute. Sometimes, those who have had problems with SSNIT and share their stories make successfully targeting some people a bit difficult. Complaints by persons that SSNIT has not released funds of their relatives who had made contributions creates some misconceptions about pensions*" (Sales & Marketing Officer, UPT, Accra, 3rd May, 2019).

The informant's assertion can be linked to the theory of planned behavior which predicts uncertain pension saving outcomes as results of people's negative experiences with financial institutions noted by Ajzen *et al.* (2011). According to Grable (2000) and Grable and Lytton (2003), the negative experiences are financial risks that indicate the amount of financial uncertainty someone is willing to accept. Therefore, in line with the TPB, DeVaney & Chiremba (2005) and Magendans *et al.* (2016) posit that negative financial experiences were found to be predictors of saving intention and attitude towards saving which is consistent with the observation made by the key informant.

According to the key informants, some of their clients misunderstood the culture of savings. They, therefore, wait to earn bigger amounts before they consider savings. Non-contributors also believe they can trade and turnover the money they will otherwise save to increase their market capital. Others assert that due to the informal nature of their jobs, they will never go on pensions.

In order to identify the motives that account for MPS saving, a factor analysis using Principal Component Analysis (PCA) was conducted. Steps were first taken to ensure that the interview schedules administered were accurate in measuring all items scaled to measure the motives for saving. A reliability test was performed to determine the internal consistency of the measurers (Appendix D). The Cronbach's alpha indicates the extent to which the instrument is without bias, stable and hence consistent in assessing the goodness of the underlying constructs of saving motives. Consequently, results for the scaled items measuring motive of saving had Cronbach's alpha values of 0.711, suggesting that the scaled items are reliable (Sekeran, 2003).

Other assumptions for PCA were further checked for the scales measuring the saving motives under investigation. The Bartlett's test of sphericity indicates statistical significance with approximate Chi-square value of 1820.061 with 120 degrees of freedom and a p-value of 0.00. The Kaiser-Meyer-Olkin (KMO) value was also 0.655, being greater than the recommended minimum of 0.6, and thereby, as Pallant (2005) notes, suggesting sample adequacy. Using PCA, five main factors/components were extracted from 18 items measuring saving motive concept. These factors explain cumulatively 63.72 percent of the total variability in the concept. Table 28 shows the items with significant loadings for each component.

Table 28: Results from Principal Component Analysis – Motives for Saving (Factor loading)

Items	Extracted Components				
	1	2	3	4	5
Political uncertainties	0.830				
Fluctuations in income	0.803				
Economic uncertainties	0.779				
Education finance for children and yourself	0.631	0.624			
Reserve for necessities	0.493				
Emergency/ unexpected expenses		0.916			
Home repairs and Rent		0.876			
The cost of borrowing	0.414	0.613			
Leave inheritance			0.853		
The love for spouse & children			0.794		
Leave a good name for generation to come			0.73		
Perpetuation of the span of life				0.755	
Earn decent pension when retire				0.696	
To smoothen consumption in retirement				0.662	
Self-gratification					0.765
Holidays					0.695
Luxurious/extravagant living				0.347	0.608
Self esteem				0.317	0.425

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization

Source: Field Survey (2019)

In the first component, it can be observed that people's motive for saving is influenced by political uncertainties, income fluctuations and macroeconomic uncertainties. Scholars like Davies (1981), Hubbard (1984), Canova, *et al.* (2005) and Yao, Wang, Weagley and Liao (2011) identified the saving for uncertainties as precautionary savings motive. Thus, the combination of the three items suggests a latent variable name precautionary motive. Mpofu (2014) and Choi *et al.* (2016) attest that individuals in developing countries are often faced with uncertainties and unstable incomes. Therefore, for these individuals, the basic premise for saving becomes precautionary.

The second component combines item like emergency/unexpected expenses, home repairs and rent, education finance and cost of borrowing. These items are positively related to each other. Several literatures tend to support this combination of items. Bernheim (1984), Weil (1994), Fisher and Montalto (2010), Kumarasinghe and Munasinghe (2016) identified them as the emergency savings motive. Chudzian, Anioła-Mikołajczak and Pataraia (2015) found that the most often-chosen saving motives were reasons related to daily functioning, making reserves for everyday needs, purchasing of durable needs or regulating fees. Thus, it clear that the four extracted items in the second component project a common view that people will save money for trasctionary reasons.

In the third component, a person's saving motive was found to be associated with the desire to leave inheritance, love for spouse and children and to leave a good name for generations to come. These items agree with Kohl and O'Brien (1998) and Havinga (2016) who argue that individuals experience increase in utility when they leave their heirs a bequest. According to them, the bequest motive drives saving in any scheme. Therefore, the underlying variable in the third extracted component can be described as bequest motive for saving.

The fourth component comprises related items such as perpetuation of the span of life, earning decent pension when retired and consumption smoothening in retirement. These items re-emphasize the retirement motive as stated by Modigliani (1988), Jappelli (2005), Yao and Xiao (2014) that the core motivation is to save enough to accumulate wealth for later expenditure and, more specifically, to support consumption at the habitual standard during retirement. Thus, the latent variable in the fourth component explains the retirement motive for saving.

Finally, the factor loadings of the fifth component suggest that a person's saving motive is inspired by the desire to live a luxurious/extravagant life, have self-esteem, go on holidays and for self-gratification. Scholars like Canova, Rattazzi and Webley (2005) have made similar findings in identifying the motive of saving. Consequently, the latent variable underlying the fifth extracted component is named the self-actualisation motive for saving.

All the five identified latent variables defining motive of saving argue from the LCH. The core motivation for saving, according to the LCH noted by Modigliani and Brumberg (1954) and Jappelli (2005), is to accumulate enough wealth for later expenditure and, more specifically, to support consumption at the habitual standard during retirement. According to Kumarasinghe and Munasinghe (2016), the implication is that if the motive for saving is precautionary or transactionary, then income security of informal workers when retired may be threatened. Modigliani (1988) and Jappelli (2005) disagree with this assertion, arguing that bequest represents unintended legacies from the holding of wealth for precautionary reasons by the risk-averse elderly. Horioka and Watanabe (1997) found the self-actualization motive as an abstract goal inconsistent with the LCH, making saving for luxurious or extravagant life may not be in the interest of informal workers since it may deplete savings and lead to income insecurity.

Further analysis was conducted to unravel the key motive for the uptake of pension saving schemes by informal workers. In this respect, a multiple regression model was fitted to identify which of the saving motives components extracted by the PCA explained most of the variance in MPS. The study used the log of the amount saved at a time as the dependent variable. Scholars such as Ioannides (1992), Poterba and Samwick (1997), Tin (1998) and Shafii (2007) have used savings amount in their previous studies to measure participation (or membership/contributor) in saving schemes and as an indicator of a person belonging to the MPS scheme.

The extracted saving motives were introduced into the first regression model step by step to observe the contribution of each motive to the total variation in the dependent variable. The five identified saving motives jointly yielded an R square value of 0.058 and F statistic of 3.851 with a corresponding probability value of 0.002. These values indicate the statistical significance of model I and imply that about 5.8 percent of the total variation in the dependent variable is explained by the five identified saving motives included in the model. Curley *et al*. (2009) found institutional perspectives accounting for three percent of the total variation in deposites for IDA programme. The breakdown of the amount of variations in the log of amount saved at a time is presented in Table 29.

Table 29: Variables Entering Model 1 Step by Step

Model 1	Precautionary	Transactionary	Bequest	Retirement	Self Actualisation
R	0.115	0.171	0.22	0.24	0.24
R Square	0.013	0.029	0.049	0.058	0.058
Change in R Square	0.013	0.016	0.020	0.009	0.000
Adjusted R Square	0.01	0.023	0.039	0.046	0.043
Std. Error of the Estimate	0.58432	0.5805	0.57559	0.57373	0.5746
F	4.269	4.763	5.372	4.819	3.851
Sig.	0.04**	0.009***	0.001***	0.001***	0.002***

*** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.
Source: Field Survey (2019)

As can be observed from Table 29, bequest saving motive accounted for the biggest share of the total variability of 2.0 percent. Transactionary motives accounted for 1.6 percent of the variability in the amount saved. This is followed by precautionary saving motive, which explained 1.3 percent of the total variation. Retirement saving motive contributed 0.9 percent to the total variation in the amount saved for MPS while self-actualisation saving motive contributed nothing to the total variation in the log of the amount saved at a time. Such small changes in R-square are found in related studies of Hershey *et al.* (2008) and Curley *et al.* (2009).

With the exception of bequest motive of saving ($\beta = -0.081$, t = -2.416, p-value = 0.016), the other latent variables of motives of saving were found to be statisitically not significant at the 0.05 level. What it means is that a negative relationship is observed for the log of amount saved at a time and the bequest saving motive. The implication is that the more bequest motive people have, the lesser the amount they contribute to MPS scheme (Table 30).

This finding like many others such as Choi *et al.* (2016) and Lugilde *et al.* (2017) give divergent views about the logic behind the LCH. The study, therefore, adds to the debate that the retirement saving motive is not the most significant saving motive why informal workers enrol onto MPS schemes. The dominant and significant motive for saving was found to be the bequest saving motive. This finding is, however, inconsistent with studies by Yao *et al.* (2011) and Birkeland (2013) that precautionary motive is the most important saving motive and bequests as well as transactionary motives are less important in China and Netherlands respectively.

Table 30: Coefficients of Regressed Latent Variables of Motives of Saving

Motive for Saving Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.418	0.046		30.798	0.000
Precuationary	0.016	0.033	0.03	0.474	0.636
Transactionary	0.072	0.038	0.123	1.875	0.062*
Bequest	-0.081	0.034	-0.138	-2.416	0.016**
Retirement	0.056	0.032	0.096	1.737	0.083*
Self-actualization	-0.007	0.033	-0.011	-0.205	0.838

Dependent Variable: logamtsave; *** <0.01; ** <0.05; * <0.10
Source: Field Survey (2019)

The extracted variables for the motives of saving together with the socio-demographic characterisitics of the informal workers produced an adequate regression model (F-statistics = 18.881, p-value = 0.000). Even though the model is improved by the inclusion of the socio-demographic variables, all of the variables for the motives of saving were found not to be significant at the 0.05 level.

Table 31: Model Summary for Motives of Saving together with Demographic Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.240	0.058	0.043	0.57460
2	0.597	0.352	0.342	0.47947
Both	0.616	0.378	0.359	0.47014

Dependent Variable: logamtsave
Source: Field Survey (2019)

In the joint model, males were found to save less compared to females ($\beta = -0466$, t = -7.227, p-value = 0.000). Similarly, married informal workers were found to save less compared to other categories of marital status, as Adzawla *et al.* (2015) observed. The study also found that informal workers with at least basic education, as Curley *et al.* (2009) opine, save more compared to those without education. Finally, like Collins-Sowah *et al.* (2013) argued, informal workers with more dependents were found to save less for MPS. Table 32 shows the estimated coefficients of both the motives for saving variables and the socio-demographic variables. Many of these socio-demographic characteristics have shown similar relationships with pension saving in other previous studies by Sane and Thomas (2013), Lee *et al.* (2016) and Agunga *et al.* (2017).

Table 32: Coefficients of the Motives of Saving Variables and Socio-Demographic Variables

Combined Variables in the Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
(Constant)	1.418	0.046		30.798	0.000
Precuationary	0.016	0.033	0.03	0.474	0.636
Transactionary	0.072	0.038	0.123	1.875	0.062*
Bequest	-0.081	0.034	-0.138	-2.416	0.016**
Retirement	0.056	0.032	0.096	1.737	0.083*
Self-actualization	-0.007	0.033	-0.011	-0.205	0.838
(Constant)	1.081	0.175		6.185	0.000
Precuationary	0.019	0.027	0.037	0.712	0.477
Transactionary	0.044	0.032	0.076	1.404	0.161
Bequest	-0.051	0.028	-0.087	-1.843	0.066*
Retirement	0.011	0.027	0.019	0.409	0.683
Self-actualization	0.019	0.027	0.031	0.685	0.494
Sex (Male)	-0.466	0.064	-0.349	-7.227	0.000***
Level of education (at least basic)	0.703	0.106	0.322	6.662	0.000***
Marrital status (Married)	-0.232	0.1	-0.108	-2.309	0.022**
Dependents	-0.046	0.022	-0.097	-2.139	0.033**
Age	-0.001	0.003	-0.022	-0.479	0.632

Dependent Variable: logamtsave; *** <0.01; ** <0.05; * <0.10
Source: Field Survey (2019)

The reiduals of the entire regression model satisfies the nomarlility assumption with mean of 0.0001760 and standard deviation of 1.002. Likewise, the assumption of linearity and constant variance is shown in the figure at Appendix D. Finally, there appear to be no problem of multi-collinearity among the explanatory variables as indicated by the values of the VIF presented in Table D5 at Appendix D.

On the part of the key informants, they generally reported that informal workers have a fair understanding of pension schemes. However, the report indicated that some of the informal workers harbor the misconception that pension investment is for unforeseen circumstances as is the case when a person proceeds on early pension due to an accident. Furthermore, key informants reported that informal workers are made to understand that a pension scheme is different from the education packages sold to them by financial companies. However, the key informants indicated that some informal workers understand that the contribution to a pension scheme is a supporting asset for them when they are older and retired. The key informants, therefore, emphasised that informal workers may contribute to pension saving when they know they cannot be sure to rely on their children for support.

Another set of informal workers distinguished between the concepts of pension and savings. According to one service provider who participated in the study, to allay such confusion, contributors' monies are divided into two, where one part goes into savings and the other for pensions. This is to ensure that contributors only access the savings account when in need. Key informants also clarified what they felt were the informal workers' motive for saving in the scheme. The dominant motive was that people save for emergency purposes, either in the short- or long-term. According to the key informants, some informal workers were intrigued by the scheme, and thus were happy that there was a structure to help them save towards pensions.

The informants further indicated that informal workers felt the need to start the scheme due to unforeseen circumstances and were convinced to stay for the long term. According to the key informants, some contributors see the pension scheme as an opportunity to invest for their retirement. They explained that there are informal workers who enroll with a short-term mentality and after two years, demand a claim to their savings. Such clients, as reported by the key informants, are made to understand that pensions are for retirement which is 20 or 30 years. However, they explained that some informal workers take advantage of the pension law where claims can be made after a minimum of five years.

The accounts given by the key informants largely corroborate the finding in the quantitative analysis. First, informal economy workers joined MPS scheme primarily to accumulate funds for unforeseen circumstances and future emergencies. Similar conclusions were drawn by scholars like Weil (1994), Fisher and Montalto (2010) and Kumarasinghe and Munasinghe (2016) who observed that people save primarily for emergency purposes. Davies (1981), Canova, *et al.* (2005) and Yao *et al.* (2011) noted that saving for unforeseen circumstances and future emergencies are the main motives that drive saving schemes. Retirement saving motive from their account revealed that informal workers save in support of building asset for old age which is consistent with the LCH noted by Modigliani (1986), and also the conceptual framework maps the accumulated savings as a source of income.

Finally, from the interviewing of the key informants, there is some misconception about the MPS scheme concerning its two accounts and the general understanding of the scheme. The perception was that informal workers who invested tend to withdraw their savings within five years thereby defeating the long term saving instituted for MPS schemes. Ping (2013) made a similar finding that there is low knowledge about the component of the tier-three scheme. This, Adzawla *et al*. (2015) found to be the lack of understanding of the scheme on the part of informal economy workers.

Channels of Micro Pension Saving

Having identified the motives for pension saving among informal workers, the study embarked on finding out which channels of saving they adopted to accumulate their savings. The study found multiple channels through which informal workers set money aside for micro pension saving. The study found that most of the respondents have more than one channel of saving or transacting with a corporate pension trustee. Some of the identified channels of pension saving are mobile money account (70%), "susu" collection (57%), microfinance institutions (38%), bank/investment account (12%), savings & loan company (8%), storing earnings at home (8%) and family members/friends (7%). Table 33 gives an overview of the channels used to accumulate pension funds.

The finding points to the new emerging role of mobile money accounts as a channel of pension saving for informal economy workers. Other countries like Kenya and Tanzania have set the pace through mobile money systems to provide MPS schemes for informal workers (Kwena & Turner, 2013; Njuguna, 2012).

Table 33: Channels of Pension Saving Funds and Accumulated Savings in Gh¢

Instrument	No.	Mean accumulated amount	Median accumulated amount	Std. Dev of accumulated amount	Minimum accumulated amount	Maximum accumulated amount
Corporate Pension Trustee	321	1406.21	600.00	2488.96	10.00	34000.00
Micro Finance Institution	121	1077.09	500.00	2059.79	10.00	10000.00
Savings & Loan Company	25	964.72	450.00	982.10	190.00	3450.00
Mobile Money Account	225	392.18	200.00	664.18	0.00	5000.00
Bank/ Investment account	38	2227.41	670.00	5345.87	20.00	34329.00
Susu Collection	182	747.21	500.00	1190.03	13.00	6545.00
Family Member/Friend	22	895.18	533.00	757.56	21.00	2500.00
Storing in house or other place	25	1136.32	709.00	1109.10	28.00	4500.00

Source: Field Survey (2019)

The issue of accumulated pension savings and its use was examined. With respect to the accumulated pension savings, out of the 321 respondents who saved with corporate pension trustees, it emerged that as at the time of the interview, they had accumulated a median pension savings of about Gh¢600.00 (mean = 1,406.21; std. deviation = 2,488.96; skewness = 7.656) with an associated quartile deviation of GH¢840.00. The minimum accumulated pension savings was GH¢10.00 while the maximum was GH¢34,000.

In order to obtain more information about the accumulated pension savings, a frequency distribution was contructed using quintiles of the data as class boundaries. About 20 percent of the respondents had accumulated a pension savings of about GH¢0.00 to GH¢237. The next 20 percent have accumulated GH¢238 to GH¢500. This range of figures is lower than the median accumulated pension savings of GH¢600. This, thus, suggests a lower accumulated pension savings among the 40th percentile of the sampled population. This notwithstanding, the statistics (Tables 34) suggest that many informal workers are able to put extra money aside for their future upkeep.

Table 34: Frequency Distribution of Accumulated Pension Savings

Accumulated Savings	Number	Percent	Cumulative Percent
Gh¢0 to Gh¢237	64	19.9	19.9
Gh¢238 to Gh¢500	82	25.5	45.5
Gh¢501 to Gh¢602	50	15.6	61.1
Gh¢603 to Gh¢2,354	80	24.9	86.0
Gh¢2,355 to Gh¢34,000	45	14.0	100.0
Total	321	100.0	

Source: Field Survey (2019)

While it is already established that many of the respondents do not save regularly (45.2%), some of them are able to put aside a median of GH¢5.00 at a time as pension savings (mean = 66.9315; std. deviation = 117.6149; skewness = 4.019). Also, many of the contributors have been on their chosen MPS scheme for a median of two years (mean = 3.04; std. deviation = 1.714; skewness = 0.650). The implication is that, after almost 10 years of the establishment of the tier-three MPS scheme for informal workers in Ghana, most workers are recent subscribers. The minimum number of years on the scheme is one year whereas the maximum is nine years.

Furthermore, many contributors have made at least one withdrawal on their pension savings account (mean = 2.04; std. deviation = 1.444; skewness =

0.429). These withdrawals affirm the saving motive of informal workers to be for transactionary purpose and emergency. These motives constitute the mindset that most contributors have prior to their enrolment onto the scheme. Table 35 presents the descriptive statistics of the average amount saved, duration of saving and the frequency of withdrawal of pension funds.

Table 35: Descriptive Statistics of Average Amount Saved, Duration of Saving and Frequency of Withdrawal

Variables	Count	Mean	Mode	Minimum	Maximum
Amount saved at a time in GH¢	321	66.9315	5.00	1.00	900.00
Years of pension saving	321	3.0000	2.00	1.00	9.00
Withdrawals	321	2.0000	1.00	0.00	5.00

Source: Field Survey (2019)

Table 36 contains a frequency distribution of use of withdrawn funds from accumulated savings. Those who withdrew funds from their accumulated savings, spent them on acquiring land and residential properties (67.1%), reinvestment into business (19.47%) and unexpected expenses (example: food, clothing, rent, healthcare) (11.62%). Others spent their funds on education finance and on special ceremonies like funerals and weddings. These expenses were possible because of the precautionary motive of saving that informs participation in the MPS schemes.

Table 36: Use of Withdrawn Funds from Accumulated Savings

Uses of Accumulated Savings	Number	Percent
Land & residential properties	255	67.10
Business related purchases/repair (land, vehicle, pay employees)	74	19.47
Education/training	9	2.37
Ceremonies (weddings, funeral)	3	0.79
Emergency household support (food, clothing, health)	39	11.62
Total	380	100

Source: Field Survey (2019)

According to the key informants, the amount in contributors' savings varied from a minimum of GH¢25.00 to a maximum of GH¢200.00. The frequencies varied from daily, weekly, monthly to even annually, but most of the informants confirmed that payments were usually consistent. The only exception was cash crop farmers such as cocoa farmers who paid after every season, and were, therefore, not very consistent. A similar finding was made in Chile as OECD (2013) reports indicated that the seasonal nature of informal work makes MPS most preferable, especially for its contribution and withdrawl terms. These views are consistent with Institutional Theory of Saving. As espoused in the theory, Uthira and Manohar (2009) argue that institutions increase access by making flexible arrangement for contribution and payment.

Beside the variations in the savings, a number of informants explained that contributors frequently withdrew their contributions due to the nature of their businesses. Such withdrawals were to finance their businesses. These observations made by the key informants concord with Bernheim's (1994) and

Dulleman and Brujin's (2011) findings that fluctuations in income or high-income uncertainty due to reliance on informal employment account for the inconsistency in their savings. Particularly for informal economy workers, Hu and Stewert (2009) and Onyango (2014) assert that the uncertainties surrounding their work limit their avenue to create retirement income. The inconsistency in savings as a result of income fluctuation is divergent to the LCH. As expressed by Modibliani (2001) and Njunge (2013), the LCH assumes that income continues until retirement and diminishes to zero thereafter.

Also, the key informants stated that some contributors only withdraw just to test the security of the system, and hence the safety of their monies. One informant is quoted as:

> "*It is normal. They don't think that they should leave their money there for a long time before they can access it. There are those who do not need the money but want to come for it just to test the system because they want to be sure if their money is safe. Withdrawal is not up to 15%. In fact, formal workers withdraw more than the informal workers*" (CEO, PPT, Accra, 29th April 2019)

The view of this key informant confirms the doubts about the Institutional Theory of Saving that suggest that financial security is guaranteed by financial institutions. This finding concords with PWC's (2019) report that some institutions are incapable of releasing savings of contributors on time because they might be insolvent. Therefore, based on the key informant's assertion, it can be explained that contributors want to know their financial security by ensuring that their monies are safe with the trustees. This may account for the withdrawals of funds from their savings schemes at certain intervals to know whether there is trust in the system or not. The PWC report further indicated that recent financial happenings, with a good number of banks having been consolidated in Ghana, are also fueling contributors' fear of losing their investment.

The key informants also mentioned that informal workers save with the notion that their pension savings may serve as capital for their businesses. However, when they are presented with challenges such as claim payments, they become disinterested in contributing. These observations are similar to challenges that have been enumerated in previous studies like Adzawla *et al.* (2015) and Onyango (2012) that pension schemes are plaqued with the perception of mistrust, corrupt employees embezzling the funds or pension companies becoming insolvent resulting in scheme members losing their money.

Furthermore, the key informants compared formal and informal withdrawals and concluded that there were more withdrawals with formal sector workers as compared to informal sector workers. This occurrence of withdrawals on pension savings is linked to the motive behind the saving. This is what Cagetti (2003) found out from his studies and consequently argued that when individuals are confronted with several risks such as fluctuations in income, ill health and other life-threatening circumstances, often with limited or no market to insure themselves against these risks, they may fall on their savings to self-insure against these risks.

Similarly, Chudzian, Anioła-Mikołajczak and Pataraia (2015) found out that, quite often, prople's chosen saving motives were related to daily functioning, making reserves for everyday needs, purchase of durable needs or regulating fees. Yao and Xioo (2014) also found that most withdrawals on pension funds were for children's education finance. None of the studies like Yao and Xioo (2014) and Chudzian, Anioła-Mikołajczak and Pataraia (2015) categorized their findings in terms of the types of employment sector.

Attrition levels were specific to service providers. A few of the service providers mentioned that they had had no attrition. However, in some instances, investors may usually pause for some time. A key informant was quoted as, "*So far for those on our scheme we have no attrition*" (Business Development Office, PT, Accra, 6th May, 2019). Another indicated that, "*We do not experience people leaving the scheme; they only suspend their contribution for a while.*" (Head of Cooperate Relationship Office, OM, Accra, 7th May, 2019)

It can be interpreted from the various service providers that none of them has ever experienced contributors exiting the scheme, but most people usually halt their contributions due to several reasons such as health issues, educational issues and fluctuation in income. This explains that savings in MPS schemes are generally driven by the precautionary motive of saving. The pause in saving is the opportunity cost of meeting other contingency needs with income as indicated by Cagetti (2003), Yao and Xioo (2014), and Chudzian et al. (2015).

In addition, the key informants were asked on whether saving for retirement was a necessary thing for informal workers to do. These key informants explained that contributors' accumulated savings will become the source of income after retirement. This reason is consistent with the logic of the LCH. It emphasises saving for consumption smoothening when one retires and is unable to work (Jappelli, 2005; Modigliani & Brumberg, 1954). A key informant was quoted as, "…*is a form of generating income when retire*" (Secretary, UNIWA, Accra, 10th May, 2019).

The key informants indicated that pension saving was necessary for informal workers because it will enable informal workers to have a better life in the future. They concluded that the benefits received from retirement savings help informal workers to continue providing for themselves as though they were still in active service. The informants perceived informal workers having access to retirement benefits as a venture that makes it possible for them to live their dream lives, cater for their families and have income to rely on in times of uncertainties after retirement. These observations of informants are consistent with the LCH which states pension wealth accumulation as enabling comfortable life after retirement (Mpofu, 2014). The ATA, noted by Moody (2012) and Novak (2012), also supports a similar view that involvement in pension saving activity over time guarantees a satisfying late.

The study further enquired from key informants how non-contributor informal workers intended or planned to keep up with their quality of life after retirement. Some ideas were put forward by the key informants. One idea was that non-contributors have the intentions to take good care of their kids and grandchildren with the hope that when they retired, the children would also be able to take care of them. This reported view is supported by the Activity Theory of Aging. The theory, as espoused by Havighurst *et al.* (1963), contends that the activities a person engages in and the roles played are related to a satisfying late life. According to Lemon *et al.* (1972), the implication of this is that the greater the investment made in dependents (financial or social), the greater the satisfaction to be derived from their reciprocity in late life.

According to the key informants, other non-contributors hoped to depend on their investments to keep up with their lives after retirement. Some non-contributors as explained by a number of key informants intended to establish small scale businesses and employ others with the hope that the income will support them after they retire from active work. Another idea is to train the young people to succeed them in their line of business after retirement. Many non-contributors plan on acquiring non-financial assets like land, houses, cars, farm, which can serve as investments to depend on after they retire from work. The conceptual framework of the study presents many of these assets as non-MPS wealth which one accumulates over the course of life as espoused by the Activity Theory of Aging (Amaike, 2016). Informal workers may, therefore, fall on these assets for income security when they retire.

From the key informants' perspective as to whether informal workers consider retirement savings a priority, they explained that the key priority is the need to save. They therefore make education of informal workers a priority on the need to save towards retirement. This view of the informants can be explained by the institutional theory of saving. As espoused in the theory, according to OECD (2005), financial information and education by institution increases knowledge and understanding of investors about pension saving.

Finally, other key informants also painted a picture of the quality of life of retired pension contributors compared to non-contributors to prospective informal workers. Upon realising the fate that befell known non-contributors, they reconsidered membership in a scheme. Nonetheless, a number of key informants gave contrary responses. They mentioned that some informal workers may assume that they might make enough money and not have to think about retirement contributions. Some informal workers are ignorant of the different MPS packages whereas others just think about the present and not necessarily their future livelihoods as reported by an informant.

CHAPTER SEVEN

EFFECT OF FINANCIAL ATTITUDE ON PENSION SAVINGS

Introduction

This chapter entails analysis of the third research objective of the study. The discussions border on the financial attitudes of informal economy workers towards pension saving. The financial attitudes include financial knowledge, financial planning towards retirement and financial risk tolerance. The theoretical foundation of the chapter is based on the Theory of Planned Behaviour (TPB). TPB, as Ajzen (2002) and Armitage and Conner (2001) observe, argues that behaviour which people have incomplete volitional control over are predictable with measures among others like attitude. Specifically, independent attitudes such as financial risk tolerance, financial planning and financial knowledge are hypothesised to influence behaviour towards pension savings. These propositions serve as the framework for examining the effect of financial attitudes of informal workers in shaping their retirement income.

Key themes covered in the analysis are financial knowledge towards retirement saving, financial planning towards retirement and financial risk tolerance. These were analysed using index construction, logistic regression analysis and thematic analysis. These methods of analysis, according to Magendans *et al.* (2016) and Agunga *et al.* (2017), were adequate because the data were mainly captured on the ratio and norminal scales. The analysis is based on varied sample sizes per the key themes because of inapplicable items.

Financial Attitude of Informal Economy Workers

In examining informal workers' attitudes that predict the likelihood of saving in MPS schemes, a binary logistic regression analysis was conducted. The analysis was needed to assess how well financial attitude variables such as financial knowledge, financial planning and financial risk tolerance explain a workers' status as an MPS contributor or otherwise. In addition, the analysis enabled us to determine the relative importance of each predictor variable in a model. The financial knowledge construct consisted of statements concerning financial attitudes derived from past research as well as those developed by the present researcher. The financial knowledge attitude was measured by computation capability (CC) (4 items, Cronbach Alpha = 0.764, minimum inter-item total correlation = 4.62) and emotional loads balance (ELB) (4 items, Cronbach Alpha = 0.708, minimum inter-item total correlation = 5.21).

The two other measures of financial knowledge attitude are trust in pension scheme (TPS) (5 items, Cronbach Alpha = 0.831, minimum inter-item total correlation = 6.40) and personal competence (PC) (9 items, Cronbach Alpha = 0.882, minimum inter-item total correlation = 0.689). These constructs are hypothesised to motivate pension saving in the same manner as the findings of Lusardi and Mitchell (2011), Van Rooij, Lusardi and Alessie (2011), Balaz (2012) and Bacova and Kostovicova (2018).

According to Van Rooij *et al*. (2011), the computational capability scale emphasises one's competencies of financial calculations like interest, risk and investment return. Bacova and Kostovicova (2018) are of the view that the emotional load scale concerns the stress and anxiety which accompanies retirement financial planning and decision making along with a possible lack of financial resources. Trust refers to the trust in MPS schemes. This scale captures the participant's attitude concerning the idea that savings in MPS scheme will result in improvements in one's standard of living in retirement. The personal competence scale represents the participant's belief in their own abilities in relation to their self-rated knowledge of possibilities for saving towards retirement.

The study constructed an index for each of the financial knowledge constructs. The index was computed using respondents' scores representing their level of agreement with statements about their financial knowledge towards retirement. The statements were grouped under their respective financial knowledge constructs and the scores varied from 1 to 5. Per the scale, 1 is least agreement and 5 represented strong agreement with a statement. The index scores for each respondent level were calculated by the sum of score from each statement divided by the total maximum sum of the scores just as Grootaert, Narayan, Jones and Woolcock (2004) and Heenkenda, (2017) observed. A higher score in the scale means a higher level in terms of the attitude being assessed. The scales are found in the interview schedule in Appendix A.

Similar indexes were constructed for financial planning for retirement. These indexes comprised personal engagement (PE), retirement planning activity (RPA), retirement goal clarity (RGC), self-rated knowledge about financial planning for retirement (SKFPR) and future time perspective (FTP). The personal engagement scale focused on the perceived need for an early start to financial planning towards retirement. It involved eight-scaled items with a Cronbach alpha of 0.854 and a minimum item-total correlation of 0.522.

The planning measure scale of Stawski *et al.* (2007) was used to measure retirement planning activity levels. The six-item scale was designed to tap the frequency of both information-seeking and instrumental planning activities that had occurred over the past 12 months. Coefficient alpha for the scale was 0.776, and the minimum item-total correlation was 0.621. The items in the retirement goal clarity reflect the act of thinking about, discussing or settling goals for the future, particularly, in relation to retirement quality of life. The study used Stawski *et al.*'s (2007) five-item scale to measure retirement goal clarity. The Cronbach's alpha for the scale was 0.711 and the minimum item-total correlation was 0.535.

Furthermore, self-rated knowledge of financial planning for retirement was also measured based on six items designed to assess individuals' perceptions of their general knowledge of financial planning towards MPS and retirement. The scale achieved a Cronbach Alpha of 0.761 and the minimum item-total correlation was 0.562. The future time perspective constructs assessed the extent to which individuals enjoyed thinking about and planning for the future. The scale for this personality construct was obtained from Hershey and Mowen (2000). The scale recorded a Cronbach alpha of 0.721 and the minimum item-total correlation value of 0.475.

The last financial attitude index was the financial risk tolerance index (FRT). Grable and Lytton's (1999) financial risk tolerance scale was used to measure the financial risk tolerance attitudes of respondents. Financial risk tolerance indicates the amount of financial uncertainty someone is willing to accept. The scale included four modified statements. A Cronbach alpha of 0.791 was recorded for the scale and the minimum inter-item total correlation was 0.565. The study also added demographic variables such as sex, age, marital status, educational level and number of dependents in a later block to determine their additional influence on the likelihood of pension saving by informal economy workers.

The study used 655 completed responses on all the variables under consideration. The dependent variable was dichotomised based on each respondent's status as a contributor to MPS or a non-contributor. Contributors were coded as "1" while non-contributors were coded as "0" (reference category). At the first stage, when no independent variables were added to the model, the overall percentage of correctly classified cases was 51.0 percent. This percentage suggests that most of the respondents contribute to MPS because they truly indicated so. The model was improved in the first stage when financial attitude variables were included. As a result, the model correctly classified 67.0 percent of the overall responses for MPS contributors. This represented an improvement over the 51.0 percent observed previously.

A "goodness of fit" test of the model at the first stage revealed a better performance compared to the initial classification when no predictors were added (Chi-square value = 111.356, d.f =10, p-value = 0.000). In addition, a Hosmer and Lemeshow test supported the model as being robust in the first block with Chi-square value of 15.071 with 8 degrees of freedom and a corresponding p-value of 0.058 greater than the significance level of 0.05. This is a justification that the logistic model was a good fit at the first block, and therefore supports the robustness of the model.

Furthermore, the analysis showed Cox and Snell R-square and Ngelkerke R-square values of 0.156 and 0.208 respectively. These values indicate that 15.6 and 20.8 percent of the variability in MPS contribution is explained by the set of financial attitude variables under study. A similar study that included psychological variables to predict retirement saving like Carr, Sage, Fernatt, Nabashima and Grable (2015) could explain approximately two percent of the variance in the model. However, the explained variance in the model improved when demographic variables were included.

At the final block where demographic variables were included in the model, the correctly classified cases of contributors rose to 84.3 percent. This percentage figure showed an improvement of the 67.0 percent in the first block. The overall model was found to be adequate and robust (Chi-square value = 417.276, d.f =20, p-value = 0.000). The Hosmer and Lemeshow test also supported the model (Chi- square value = 4.858, d.f =8, p-value = 0.773). Additionally, the overall Cox and Snell R-square and Ngelkerke R-square values were 0.471 and 0.628 respectively. The R-square values infer that the entire predictors included in the model explain between 47.1 and 62.8 percent of the variations in MPS contributions respectively.

Effect of Financial Attitude on Pension Saving

Table 37 shows the empirical results from the logistic analysis. The odds ratios provide a measure of association between predictors and probability of workers contributing to an MPS. It should also be highlighted that a negative sign of a parameter indicates that high value of the variable tends to decrease the probability of workers contributing to MPS. According to Litwin and Sapir (2009), a positive sign implies that high value of the variable will increase the probability of workers contributing to MPS compared to non-contributors of MPS.

Table 37: Variables in the Binary Logistic Model

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	CC index	-1.824	1.000	3.326	1	0.068*	0.161
	ELB index	-2.106	.972	4.696	1	0.030**	0.122
	TPS index	-2.043	1.180	2.998	1	0.083*	0.130
	PC index	-5.667	1.226	21.361	1	0.000***	0.003
	PE index	2.236	1.123	3.965	1	0.046**	9.359
	FPRAL index	.661	.954	.481	1	0.488	1.938
	RGC index	-.634	1.129	.315	1	0.575	0.531
	FRSK index	1.229	1.213	1.028	1	0.311	3.419
	FTP index	-.210	1.022	.042	1	0.837	0.810
	FRT index	-1.240	.930	1.779	1	0.182	0.289
	Number of Depts.	.443	.065	45.902	1	0.000***	1.558
	Marital status			69.040	4	0.000***	
	Married	2.727	.458	35.514	1	0.000***	15.285
	Single	.407	.443	.840	1	0.359	1.502
	Separated	-1.676	.362	21.495	1	0.000***	0.187
	Loose union	.933	.406	5.279	1	0.022**	2.543
	Others (Divorced, Widowed)[R]						
	Educational level			90.534	3	0.000***	
	No education	1.266	.320	15.694	1	0.000***	3.547
	Basic Education	2.493	.365	46.583	1	0.000***	12.097
	Secondary/vocational	-1.060	.432	6.010	1	0.014**	0.346
	Tertiary & Higher [R]						
	Sex – male	.463	.259	3.197	1	0.074*	1.589
	Age	-.021	.013	2.501	1	0.114	0.979
	Constant	3.511	1.133	9.612	1	0.002**	33.485

a. Variable(s) entered on step 1: number of dependents, Marital status, educational level, Sex, Age: R denotes reference category; *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

Source: Field Survey (2019)

Results from Table 37 show that all the constructs for financial knowledge towards retirement (CC, ELB, TPS and PC) indicated varied levels of statistical significance. Their parameter coefficients imply that an increased level of financial knowledge towards retirement yields a decreased probability of an informal worker contributing to the MPS scheme. For instance, the parameter estimate for personal competence (PC), shows that an increased number of workers with the PC attitude have a reduced probability of contributing to an

MPS scheme (β = 5.667, Wald= 21.361, d.f. = 1, p-value<0.01). Also, the odds (Exp (β)) for all the financial knowledge constructs are less than one. These means that odds of a worker contributing to MPS decreases for every unit gain in the financial knowledge constructs.

This finding that the odds of a worker contributing to MPS decreases for every unit gain in the financial knowledge constructs is at variance with Gathergood and Disney's (2013) and Clark, Matsukura and Ogawa's (2013) findings. They established that financial knowledge has a positive effect on actual behaviour that can improve retirement resources. Other empirical studies such as Chou *et al.* (2014) and Bacava and Kostovicova (2018) gave evidence to support the positive relationship between financial knowledge attitude and pension saving. In addition, as noted by Babiarz and Robb (2013) and Mahdzan and Tabiani (2013), the finding defies the logic of the TPB that a person's subjective financial knowledge predicts financial attitude which, in turn, relates to more savings.

However, other scholars like Kidwell and Turrisi (2004), Xiao *et al.* (2011) and Croy *et al.* (2012) found that people with subjective knowledge about a behaviour have a less probability of performing that behaviour as found in this study. Consequently, the subjective financial knowledge of informal workers is likely to affect their retirement saving behaviour negatively. In the occurrence of such inverse relationship between financial knowledge attitude and pension saving, the conceptual framework of the study by Moody (2012) and Novak (2012.) illustrates that informal workers are likely to be investing in non-financial assets leading to the accumulation of non-MPS wealth as postulated by the ATA. This may provide income security and a quality of life in retirement for informal economy workers.

The study also found personal engagement (PE), a construct for financial planning for retirement, statistically significant in predicting the chances of contributing to a MPS scheme (β =2.236, Wald = 3.965, d.f = 1, p-value<0.05). The coefficient of the PE construct reveals that workers with high level of personal engagement will increase the probability of contributing to an MPS compared to those with less of that attitude. This implies that the odds of contributing to MPS by a worker with PE are over 9 times more than that of a worker with low or no PE. The finding is in accordance with the TPB which, according to Ajzen (1991) and Conner and Armitage (1998), states that a person's behavioural intention predicts his or her actual behaviour. This means that a person's attitude of engaging in financial planning is shaped by his or her behavoral intentions which lead to the performance of the actual behaviour.

In addition, the finding is consistent with other literatures like Ameriks *et al.* (2004), Devlin (2012) and Lee and Kim (2016). The findings of these literatures reaffirm the assumption that the more positive of an attitude (example personal engagement) a person exhibits towards financial planning, the more likely is the individual able to allocate resources effectively to finance retirement consumption. As illustrated in the conceptual framework of the study, informal workers contributing to MPS are assumed to engage in financial planning attitude. This enables them to save enough to accumulate MPS wealth for later-life income security. The other constructs for measuring financial attitude towards retirement were found not to be statistically significant as shown in Table 36. These include FPRAL, RGC, FRSK, FTP and FRT.

The demographic variables of number of dependants (β = 0.443, Wald = 45.902, d.f = 1, p-value<0.01), marital status (reference category – divorced/widow) (Wald = 69.040, d.f = 4, p-value<0.01), educational level (tertiary& higher – reference category) (Wald = 90.534, d.f = 3, p-value<0.01) and sex (female – reference category) (β = 0.463, Wald = 3.197, d.f = 1, p-value<0.1) show statistical significance in predicting the probability of informal workers contributing to a MPS.

The odd for a worker contributing to an MPS is about two times more likely for every additional dependant. Similar evidence is found in other existing literatures such as Sane and Thomas (2013) and Adzawla *et al.* (2015). They established that the number of children per worker is positively significant to participation in MPS scheme. Heenkenda's (2017) finding showed a contradiction which indicated that the higher number of household dependents has a negative contribution to pension saving.

With respect to the level of education, the study found that the odd of contributing to MPS by a worker with basic education is 12 times higher compared to a worker with tertiary or higher education. Similarly, the odd is also 4 timers higher for those with no education compared to people with tertiary or higher education. By way of explanation, Lusardi and Mitchell (2011) argue that individuals with higher formal education have both greater earning potential and are more able to understand the need for engagement in their retirement preparation. Hence, they are more likely to financially plan for retirement. The inconsistency may, however, be as a result of alternative use of money or investment avenues available to the more educated as explained by Ahmad and

Asghar (2004) and Tin (2000) which may account for the negative relationship between pension savings and education.

It also came to light that married workers as well as those in loose unions have greater odds of contributing to MPS compared to widows and divorced persons. Only those in the separated category showed a negative relationship with the probability of contributing to MPS (β = -1.676, Wald = 21.495, d.f = 1, p-value<0.01). Thus, workers who are separated exhibit a decreased odd ratio of contributing to an MPS as compared to any of the marital status categories. These findings are consistent just as, Collins-Sowah, *et al.* (2013), Adzawla, *et al.* (2015) and Lee, *et al.* (2016).

Finally, the odd of being a contributor of an MPS is about two times higher for males compared to females. This finding is common in other empirical studies like Disney *et al.* (2001), McKay and Kempson (2003), Mayhew (2003) and Phipps and Woolley (2008), in which women are less likely to save for retirement than men. Bucher-Koenen and Lusardi (2011) explained in their work that women were found to be less financially literate and less secured about their ability to make financial decisions. Noone, Alpass and Stephens (2010) also clarified that women were economically disadvantaged compared to men and this negatively affected their financial preparation towards retirement.

Key informants provided their opinions on the general attitude of informal workers towards the pension scheme. They noted that on the whole responses were quite negative with contributors' attitude being attributed to lack of education. Skepticism was another negative attitude recounted by key informants. The non-saving culture, which a key informant termed "a Ghanaian attitude", also was evident in the responses. This was expatiated with the argument that there were about 30 percent enrolled contributors who had not made any contribution since they enrolled.

However, there were some positive rejoinders. Contributors were said to be happy and satisfied with the service experience, especially, upon receipt of their account statements. Other prospects enrolled after having been educated. On the other hand, there were other willing prospects, but their economic situation was a constraint to them. Contributors' knowledge of pension saving according to the key informants were very low due to the lack of education and understanding. The key informants, however, projected that embarking on an active education campaign will increase the number of informal economy prospects accessing pension schemes within the next 2 to 3 years. A key informant was quoted as:

> "*... not so good currently. However, a new act has been enacted. We are now educating prospects and knowledge is improving so by 2 or 3 years it will be good.*" (Contribution Administrator, EPT, Accra, 13th May, 2019).

The views of the informant can be explained by the Institutional Theory of Saving. As espoused in the theory, according to Sherraden (1991) and Beverly and Sherraden (1999), financial information through education offered by instituions has positive outcomes for pension savings accumulation. The views of the informant as well as the theory converge, as similar views are expressed by Goyal (2010) and Heenkenda (2017) in the Partner Agent model and the Grameen model respectively. The view that education is improving prospects of saving for retirement is illustrated in the conceptual framework of the study. The concept linked education provided by instituions to informal economy workers to

MPS wealth accumulation. The objective is to rely on the accumulated wealth for income security in later life.

According to the key informants, informal workers' attitude towards financial planning for retirement was described as unplanned with contributors only enrolling when they are prompted to do so. Other key informants responded that contributors understood investment but had issues with where and whom to save with. In describing contributors' attitude towards risk-taking for long-term investment, the key informants explained that contributors are initially skeptical but usually endured once they were enrolled and understood that the saving is long term.

A number of key informants also reported that some informal workers have little faith in the financial system especially due to past experiences, and therefore could not differentiate between insurance and microfinance. According to the key informants, whereas some contributors are risk-takers, others hardly took risks paying no attention to their retirements. MPS was, therefore, more attractive to risk-takers who were security conscious as compared to those less conscious about security.

Key informants further gave insight into what their clients were unhappy about and would like to be done differently. Three main issues were pointed out, namely accessible payment channels, higher returns and straitjacket processes involved in withdrawals. According to key informants, contributors needed easy and accessible payment channels. Most stated their payment preferences to be through ezwich and mobile money platforms. Others preferred mobile banking where service providers are called to their shops and homes for the collection of contributions.

The key informants reported that there were complaints of insufficient outlets and cumbersome processes by contributors. One such process involved the contributors effecting payment at a custodian bank or presenting a copy of a payment receipt to the service provider for validation. Though service providers were only adhering to the Pension Act, contributors found this process stressful. A key informant stated that:

> "*First, we need to validate whatever they are doing. They do not understand why they need to pay at a custodian bank and present the statement to the office because per the Pension Act, we are not supposed to receive funds.*" (Head of Cooperate Relationship Office, OM, Accra, 7th May, 2019)

The Institutional Theory of Saving provides explanation to the view expressed by the key informant. According to the theory, as Ssewamala and Sherraden (2004) and Sherraden *et al.* (2005) concur, institutions create restrictions or rules aimed at shaping the financial assets of savers. Moore *et al.* (2001) provided evidence to the effect that restrictions impelemented in pension schemes enhance savings for retirement. While the rules are in the interest of the contributors, if the processes are not well communicated, they may serve as a disincentive to save. The conceptual frame work of the study presents the connection between retrictions instituted by financial institutions to MPS wealth accumulation for income security during retirement.

According to the key informants, other contributors wanted higher returns, but the lack of financial education was sighted for such a demand. Others were not conversant with the whole process, and therefore panicked when there were hiccups. There were different perceptions on restrictions. According to the key informants, majority of the contributors understood the concept of restriction after being educated. However, they were quite unhappy about their monies being locked up for 10 to 15 years.

The key informants further reported that, usually, contributors would like to access their monies 2 to 3 years after enrolment, and, such short-term options are provided. According to the key informants, most of the contributors opt for the post-tax version of the tier three schemes where they can make contributions and withdrawals without restrictions. However, motivated and convinced prospects retain their monies over the long term once they enroll. Other contributors, as indicated by the key informants, understand that the restriction enables them to save more for their future. Therefore, they save the little they can without being severely affected by it. The key informants revealed that contributors complained about the channels of communication employed by service providers. Usually, mails or text messages are the means used to reach out to them, but they prefer to be visited regularly.

Finally, the key informants further indicated that some informal workers complained about the stress encountered in accessing their statement. In this instance, contributors must physically visit the office of the service for printed copies which they see as a waste of time. Others found the length of time for which their contributions were kept unfavourable. However, that perception changed for the better after being educated.

CHAPTER EIGHT

PENSION SAVINGS, INCOME ADEQUACY, AND QUALITY OF LIFE OF SAVERS AND NON-SAVERS AFTER RETIREMENT

Introduction

This chapter is the final part of the results and discussion of the thesis. The chapter is divided into three parts. The first part focuses on the fourth objective of the study. It examines the differences in perceived retirement income adequacy of micro pension savers and non-pension savers. The second part examines the relationship between income levels and pension savings of informal workers as the fifth objective. Specifically, the discussion in this part centres on income levels, pension savings, accumulated savings, effect of household shocks on income levels and pension savings as well as the effect of business shocks on income levels and pension savings of informal workers. The final part of the chapter deals with the sixth objective. This centres on the impact of pension wealth on perceived quality of life after retirement of informal economy workers.

The arguments from the chapter are mainly based on the LCH and the Activity Theory of Aging. As already indicated, the LCH, Modigliani and Brumberg (1954) and Jappelli (2005) affirm, maintains that the core motivation for saving is to accumulate enough wealth for later expenditure, specifically, to support consumption at the habitual standard during retirement. According to Moody (2012) and Novak (2012), the Activity Theory of Aging contends that life after retirement is enhanced when one engages in income-earning activities in the course of one's active life, and making conscious effort to save for retirement. These propositions serve as the basis for evaluating the fourth, fifth and sixth objectives of this study.

Issues raised in this chapter such as income levels, pension savings, accumulated savings, household shocks, business shocks, perceived income adequacy and perceived quality of life after retirement were analysed using descriptive statistics, non-parametric tests, correlation analysis, Chi-square test of independent, principal component analysis and thematic analysis. These methods of analysis are justified as the data collected are on nominal and ratio scales. Income levels were analysed using the Mann-Whitney U test. This method of analysis was appropriate because the data violated the assumption of normal distribution. Variables for perceived income adequacy and perceived quality of life were derived using principal component analysis. The analysis per issue relied on varied sample sizes because of multiple responses and inapplicable items.

Retirement Income Adequacy

The perceived inadequacy of retirement income from pension schemes propelled the current study to evaluate this perception. Consequently, the fourth objective of the study was framed to examine differences in perceived retirement income adequacy of micro pension savers and non-pension savers. In this regard, respondents were asked to scale their perceived income adequacy in retirement judging from their present situations. Respondents indicated the extent to which they agreed to 14 items that measured perceived income adequacy. A scale of 1 implied least agreement and 5 implied strong agreement with the items. The analysis employed the principal component analysis to extract a combination of items that best defines income adequacy in retirement.

Prior to the analysis, a reliability test of the instrument was conducted. The result yielded a Cronbach alpha of 0.788 far in excess of the minimum of 0.5 to indicate that the instrument was adequate in measuring the construct under investigation, as Sekaran (2003) reveals. In addition, the inter-item-total correlations all exceeded the minimum of 0.3, meaning that the items measuring the construct fairly correlate with each other. But seven out of the 14 items which failed to meet the minimum requirement were discarded (Table 38). Furthermore, a validity test to justify PCA for the seven items showed linearity through the Bartlett's Test of Sphericity (X^2 = 2120.976, df = 21, sig. = 0.000). The sampling adequacy measure was also greater than the acceptable minimum of 0.6 for PCA (KMO = 0.666). Table 38 present the results of the reliability test.

Table 38: Reliability Test for Retirement Income Adequacy

Items	Item total Correlation	Alpha if Item is deleted
Your livelihood earning would be adequate in meeting your basic needs after stopping work	0.496	0.766
You will have access to enough income (pension) during your retirement	0.647	0.736
You will have regular cash flow (income/pension) to meet your basic needs in retirement	0.483	0.767
The purchasing power of your income (accumulated savings) would be strong to take you through retirement	0.744	0.717
You have a guaranteed income (Savings) to improve your wellbeing in retirement	0.394	0.781
You are assured of an adequate retirement income till end of life	0.404	0.783
Your living condition will be excellent when you retire	0.478	0.767

Source: Field Survey (2019)

The PCA extracted three different components from the items measuring income adequacy (Scree plot is presented at Appendix D). They cumulatively accounted for 82.21 percent of the total variation in the responses of the perceived income adequacy. The first component combined strongly positive correlated items such as the adequacy of livelihood in meeting basic needs, access to enough income during retirement as well as purchasing power of income throughout retirement.

Veenhoven (1988) emphasized that income is adequate once it can meet certain universal needs, just as Rennie and Singh's (1996) claim that livelihood earning provides the means of gaining access to adequate stocks and flows of resources to meet basic needs. Subsequently, the items in component one are renamed livelihood income. This assertion, noted by Moody (2012) and Novak (2012), is supported by the ATA that implied that involvement in livelihood activities was necessary to having adequate income for a quality and satisfying late-life.

The second component comprises a guaranteed income to improve well-being in retirement, regular cash flow to meet basic needs in retirement and a strong purchasing power of income to last throughout retirement. The items in this second component are deduced from the LCH. According to Modigliani and Brumberg (1954), Jappelli (2005) and Castel (2006), the theory espouses that an individual's decision to continuously earn income after retirement depended on the quantum of savings accumulated and labour income during working years. From this preposition, the second component is named guaranteed income. The third component combines assurance of an adequate retirement income till end of life and excellent living condition when one retired. These items are both supported by the LCH and the ATA and thus, named perceived retirement income. The factor loadings are presented in Table 39.

Table 39: Results from Principal Component Analysis – Retirement Income Adequacy (Factor loading)

	Extracted Components		
Items	Compt 1	Compt 2	Compt 3
Your livelihood earning would be adequate in meeting your basic needs after stopping work	0.911		
You will have access to enough income during your retirement	0.895		
The purchasing power of your income would be strong to take you through retirement	0.644	0.622	
You will have regular cash flow to meet your basic needs in retirement		0.861	
You have a guaranteed income to improve your wellbeing in retirement		0.856	
You are assured of an adequate retirement income till end of life			0.902
Your living condition will be excellent when you retire			0.873

Source: Field Survey (2019)

The foundation of the argument set forth in this section, as Lloyd (2015) observes, is that perceived level of income adequacy affects subjective well-being in retirement. This is guided by the social standard approach for adequacy. In the social standard approach, Haveman *et al*. (2007) and Caminada *et al*. (2012) concur that retirement income is considered adequate when it is equal to or greater than poverty levels of income and to Netuveli *et al*. (2006), this is where the subjective poverty line is based on respondents' answers to questions regarding what they consider to be an adequate standard of living.

Previous studies such as Banks *et al*. (1998), Bloom *et al*. (2007), Mason and Lee (2013) and MacDonald *et al*. (2016) found a positive association between level of perceived retirement income and satisfaction about quality of life after retirement. For instance, MacDonald *et al.* (2016) used purchasing power of income, excellent living condition when retired; access to enough income during retirement, guaranteed income to improve well-being in retirement, among other subjective measures to measure perceived income adequacy in retirement. The items in the livelihood income, guaranteed income and perceived retirement income constructs in the present study are similar to the items used by Banks *et al.* (1998) and Mason and Lee (2013).

Each of the extracted constructs for income adequacy was used to test the hypothesis that retirement income adequacy between MPS savers and non MPS savers were not significantly different. Results of the test emerged that with the exception of the perceived retirement income, the livelihood income ($Z= -1.913$, sig. = 0.055) and guaranteed income ($Z= -1.426$, sig. = 0.154) latent constructs of the retirement income adequacy measured showed no statistical difference between savers and non-savers of micro-pension in a Mann-Whitney U test. The extracted perceived-retirement income construct showed that there is a significant difference between savers and non-savers of micro-pension at the five percent level in the same test ($Z = -2.540$, sig. = 0.011).

The explanation is that savers and non-savers of micro pension expressed significant difference in their perceived retirement income adequacy measured by linear combination of perception scaled items such as assurance of an adequate retirement income till end of life and excellent living condition when retired. The study further found that savers of MP have higher perceived retirement income based on the third extracted measure of retirement income adequacy (Mean rank of component score = 347.47; N=320). The non-savers have lower perceived retirement income adequacy with a mean rank of the component score equal to 306.29 for 232 non-savers. Disney (1996) and Barrientos (2007) had similar findings, emphasizing that for many, contributory pension schemes provided income security in old age and helped prevent workers from falling or remaining in poverty.

The finding affirms the proponents of the Activity Theory of Aging and the LCH noted by Modigliani and Brumberg (1954), Moody (2012) and Novak (2012) that livelihood income accumulated in the course of life through savings guarantees income after retirement which is necessary to having a quality and satisfying late-life. The conceptual framework of the study also illustrates that informal economy workers contributing to MPS were in a position to amass MPS wealth, having satisfied the assumptions of the LCH and ATA. This may enable the informal workers to have a secured income and live better quality of life when retired.

The key informants were asked, based on their experiences, of the chances of contributors or savers in the tier-three scheme having income adequacy during retirement. Responses were either based on contributors' efforts or information accessed. The key informants explained that it depended on the amount of the client's contribution and frequency. Different economic classes determined both the amount and the frequency of contribution. The key informants pointed out further that the law requires savers to contribute 35 percent of their income frequently. Those who adhered to that will accrue adequate funds during their retirement. For instance, a key informant remarked that:

> *"The law requires that they contribute 35 percent of their income. Contributing 35 percent is a good amount. The informal sector can also*

decide to contribute 35 percent of their income. If they do so for the long term, it's good money but if they contribute for the short-term, it will not take care of their needs. It started just about 8 years so the first batch of pensions will be in 2020/2021. Some of them will have some good money and some will not. It is good if you start early. If you are older you must contribute more and vice versa. Also, if you contribute more, you will earn more during retirements. Let us say if a person is saving GH₵50 a month with 20 percent interest, the person is able to accumulate about GH₵77000 in 15 years! The person's lifestyle will determine the adequacy!" (CEO, Prestige PT, Accra, 2nd May, 2019).

The views of the informant can be explained by the LCH, the Theory of Planned Behaviour as well as the Institutional Theory of Saving. According to Castel (2006), the individual's decision to attain that maximum satisfaction asserted by the LCH is dependent on the amount set aside for pension. Similarly, the logic of the TPB implies that attitudes and beliefs affect actual and intended behaviour (Macleod *et al*., 2012). Based on this, Chou *et al.* (2014) found that frequent engagement in retirement saving and the amount saved are positively related financial knowledge while Babiarz and Robb (2013) and Mahdzan and Tabiani (2013) linked financial knowledge to financial attitude which, in turn, relates to more savings. Finally, Turner and Manturuk (2012) professed that institutional arrangement such as tax incentives increase individuals' motivation for saving in MPS schemes.

From the key informant's explanations, the scheme is advantageous for informal sector workers since they get a tax evasion of up to 35 percent. This tax evasion should motivate informal sector workers to contribute to the scheme since it has many benefits to them as individuals and their dependents. The key informant also suggests that the earlier informal workers start contributing, the more adequate income they may secure for retirement. This is based on the assumption that one must have a good lifestyle as well as education on saving so as to achieve adequate retirement income.

The key informant's views confirm the assumptions of the various theories mentioned. In addition, the conceptual framework of the study illustrates this that an MPS contributor who saves a portion of income and commited to a financial attitude of saving frequently as stipulated by the LCH and TPB respectively, may lead to MPS wealth creation. Tax incentives from institutions may complement the build up of this wealth to be used in later life for income security.

The key informants also explained that generally, retirement income adequacy would be challenging for non-contributing informal workers. They, however, pointed out that non-contributors had better chances at income adequacy if they invested elsewhere execpt those who usually do not invest elsewhere and do not have reliable social capital. Others who do fixed capital investment like land and houses are also not very income adequate during retirement. This is especially so when these properties do not generate income. For example, a key informant stated that:

> *"If they do not have an investment elsewhere, then the future will be terrible. They rely on society or family. Even food to eat becomes a problem and their health also deteriorates. Cash flow at retirement is very key. Let us say if you have a land or a house and you do not have cash flow it becomes a problem. Unless you rent it out, it does not*

become an asset. You might have a property but if you are not generating income from it, it becomes a liability to you." (CEO, Prestige PT, Accra, 2nd May, 2019).

"*They won't have anything to rely on in the future. If you are not contributing towards pension and there is no other investment, then you have no future. It will be bad*" (Sales & Marketing Officer, UP, Accra, 3rd May, 2019).

The views of the informant collaborate the views of Agravate and Kaplelach (2017) that informal workers risk entering into poverty after retiring and in old age if they have not saved for thir retirement. A related study by Onyango (2014) in Kenya reported a contradicting view by informal workers. They felt that life after retirement will be fairly comfortable since current financial commitments, such as paying house rent, school fees or supporting a family, would not be applicable once they reached retirement. Onyango further reported that informal workers imagined that they would socialise far less during retirement as older people were perceived to have fewer social opportunities and activities. Thus, the proportion of income spent on social activities would also reduce in comparison to their current spending. Others mentioned that it would be likely that they would have children and grandchildren and would want to assist them financially, which would also impact on the amount of disposable income they would have.

The Link between Income Levels and Pension Savings

According to Chikoko *et al.* (2013) and Hussein and Thirwall (1999), income has been found to be an important variable in shaping pension wealth and the economic condition of an individual. It is on this basis that the study investigated the income levels of informal workers and the data relating to respondents' average monthly income is presented in Table 40. The frequency distribution of the monthly average income showed that approximately 30 percent of informal workers contributing to pension earned below GHȻ500. It is also evident that the first 25 percent of all the sample respondents earned below GHȻ450 a month (or US$ 2.88 per day). This amount is noted to be above the poverty wage of US$2.00 a day, as Anuwa-Amarh (2015) observes.

Table 40: Frequency Distribution of Average Monthly Income in (GH¢)

	Contributors		Non-contributors		Both	
Income group	N	%	N	%	N	%
0 < 500	139	43.3	59	17.3	191	29.2
500 < 1,000	75	23.4	56	16.4	131	20.0
1,000 < 1,500	41	12.8	42	12.3	83	12.7
1,500 < 2,000	26	8.1	20	5.9	46	7.0
2,000 < 2,500	14	4.4	51	15.0	65	9.9
2,500 < 3,000	6	1.9	11	3.2	17	2.6
3,000 < 3,500	1	0.3	57	16.7	58	8.9
3,500 < 4,000	5	1.6	17	5.0	22	3.4
4,000 < 4,500	3	0.9	18	5.3	21	3.2
4,500 < 5,000	0	0.0	0	0.0	0	0.0
5,000 < 5,500	3	0.9	10	2.9	13	2.0
5,500 < 6,000	7	2.2	0	0.0	7	1.1
6,000 < 6,500	1	0.3	0	0.0	1	0.2
Total	321	100.0	341	100.0	655	100.0

Source: Field Survey (2019)

However, the first 25 percent of informal workers contributing to MPS earned up to GHȻ288.67 a month (equivalent to US$ 1.85 per day). According to Bank of Ghana (June, 2019), this amount falls a little below the poverty line of

US$2 a day based on exchange rate of US$1 to GH₵5.30. The figure for the first 25 percent of non-contributors' income was GH₵600 a month. The finding points to some traces of poverty among informal workers contributing to MPS. However, the poverty gap, as Asante (2016) and Kumah *et al*. (2017) make clear, seems to be reducing as observed in successive studies. The implication is that monthly income earned seems inadequate for some group of informal workers to enable them save adequately for a meaningful life after retirement.

Based on the assumptions of the LCH and as elaborated in neoclassic economic theory, Friedman (1957) observes there exist a positive relationship between income and savings. Therefore, for rational individuals, Modigliani & Brumberg (1954) posit it is expected that they will save more when their income exceeds consumption. The LCH, as Kankaanranta (2006) argues, further assumes that consumption remain constant throughout a person's lifetime. Subsequently, this will lead to accumulated savings during the earning periods to maintain consumption during retirement (Mpofu, 2014). By this explanation, it implies that inadequate income or fall in income of informal workers may reduce their chances of accumulating savings for retirement income security.

Furthermore, as Duesenberry (1949) and Friedman (1957) expound, the study compared the monthly income earned by contributors and non-contributors in order to contribute to the debate about income being the main economic factor that motivates saving. In this respect, Mann-Whitney U test was performed to compare the income earned by the two categories of workers under study. The descriptive statistics showed that contributors to MPS earn a monthly median income of GH₵580.00 (mean = 992.10; std. dev = 1178.38; min= 31.00; max = 6220; skewness = 2.61) with an associated quartile deviation of GH₵440.00 On the other hand, the monthly median income for non-contributors was GH₵1550.00 (mean=1,807.45; std. dev=1,319.17; min=0.00; max=5,200; skewness = 0.499) with the quartile deviation of GH₵1200.00. The results show that respondents who do not contribute to MPS had quite higher median income.

The mean rank for those who do not save for MPS was 397.30 which is higher than the mean rank of 255.89 for those who save for MPS. The results indicate a significant difference at the five percent level (Z=-9.566, p-value=0.000) and illustrates that non-contributors to MPS have higher income compared to their counterparts who contribute to MPS. According to Abdelkhalek et al. (2010), this is possible in populations where there are low average incomes and high dependency ratios for contributors of MPS. The study concords with similar observations made by Lihiku (2006) and Issahaku (2011) on the grounds that income of participants in saving schemes are negatively related with the income of non-participants of the schemes.

Also, a Spearman's rho correlation analysis of contributors' income levels and pension saving status was conducted. This was done to test the hypothesis that there is no significant relationship between income levels and pension savings. The test results yielded a positive relationship which was not statistically significant at the 0.05 level (Spearman's rho = 0.101, p-value = 0.070). This is inconsistent with the claim by Sameroynina (2005) and Kibet *et al.* (2009) that income generally has a positive influence on pension savings. The finding is also inconsistent with the LCH which implies that as income increases, enough savings will be accumulated for later expenditure, and more specifically, to secure income during retirement years, as Modigliani and Brumberg (1954) and Jappelli (2005) clearly observed.

Implications from the income-pension saving relationship illustrates that informal workers can contribute to pension savings irrespective of the income earned. The poor can save as much as those who earn higher income. Conversely, the rich can save less as those in the lowest income group. This finding contradicts McKay and Kempson's (2003) finding that in comparison to the middle-income quintile, the top income quintile was more likely to be saving for retirement than the bottom two quintiles. Other studies such as Mayhew (2003), Sane and Thomas (2013), Adzawla, *et al*. (2015), Lee *et al*. (2016) and Bacova and Kostovico (2018) found that most people on low incomes do not contribute to pension savings.

While the finding defeats common logic, it is important to note that different group of people make different choices and have different uses for money (Baker, 2009). For instance, people in higher income group may have alternative use for their money than to invest in pension saving schemes, therefore saving less. Similarly, those in the lower income group may save larger portions of income in order to avert falling into poverty in the future.

Key informants lacked the capacity to determine the actual income, and by extension, the accruing average incomes of contributing informal workers due to the structure of the informal sector. One factor, amongst others, accounting for this is the variety of products sold whose respective margins informed the amount of money saved. The amount they save, however, could not be said to be the true reflection of their income as explained in the following quotes of the key informants:

> *"Some people save as low as GH₵15 and others as high as GH₵1500 depending on what they sell so it could be that they earn between*

GH₵450 - GH₵1500 (Head, Corporate Relationship Office, OM, Accra, 7th May, 2019).

In terms of income, there is a wide range because some earn as low as the minimum wage (GH₵10.65) and some earn so high. As low as GH₵10 per day to GH₵5000. They control a lot of money especially the spare parts dealers (CEO, Prestige PT, Accra, 6th May, 2019).

Some save as low as GH₵1.00 whilst some save as much as GH₵1000 depending on the nature of business. Some earn GH₵1200 monthly and most earn GH₵500 to GH₵1000 daily". (Sales & Marketing Officer, UPT, Accra, 3rd May, 2019).

"*Their contributions may not give you their income levels because the sophisticated ones will say, let me pay GH₵100 a month, the unsophisticated ones will say, let me pay GH₵10 a day. You realise that the one paying GH₵10 daily will contribute more than the one contributing GH₵100 monthly. Those at the upper end think they do not need pensions because they are well to do*" (CEO, PPT, Accra, 29th April 2019).

"*We have those who do GH₵1.00 / GH₵5.00 a day. They contribute GH₵5.00 to GH₵10.00 a day. I cannot tell how much they earn monthly because this is not like the TIER 2. This is voluntary. One person can contribute GH₵5.00 today and contribute GH₵2.00 another day*" (Contribution Administrator, EPT, Accra, 13th May, 2019).

These observations from key informants confirm the quantitative aspect of the study that MPS contributors may be earning a median income of about GH₵580 per month. The evidence presented by the key informants emphasizes the importnat effect of income on savings. Consequently, by the LCH, as noted by Hussein and Thirwall (1999) and Chikoko *et al.* (2013), an individual's pension savings increases or is accumulated when he/she maintains average consumption with increasing income during working years. The implication, according to Hu and Stewert (2009) and Onyango (2014), is that informal workers due to the nature of their work earn large variance of income. This may account for the varied savings of the workers as recounted by the key informants.

Choi *et al.* (2016) similarly found that in societies where borrowing constraints and higher levels of income variance are common, saving rates are likely to be higher. Conversely, Onyango (2014) found that in societies where there is high income uncertainty due to reliance on informal employments coupled with political and economic uncertainties, higher savings rates are unlikely. The conceptual framework of the study anticipated that income is an important factor for MPS wealth accumulation. Therefore, for informal economy workers, fluctuating income in addition to institutional arrangements and positive financial attitude could lead to the build up of MPS wealth for income security in later life.

Key informants attempted to describe the social class of MPS beneficiaries based on their contributions. A number of key informants considered informal economy contributors as belonging to the middle class because of the amounts they pay. One indicated that due to their ability to save an average of GH₵300.00 at a time, they could be considered as middle class.

Two other key informants expressed similar opinions. They indicated that some save as much as GH₵1500.00 at a time. By this the informal worker may be described as rich compared to the formal worker, according to a key informant. One of the informants best describes the social class of the contributors in the quotation below:

> "*On the average, they fall in the middle-income bracket even though they do not dress as such. Most of them earn better than those in the formal sector. Most of them have subscribed to other schemes and they put in a lot. They have enough to contribute just that education on pension is low that is why.*" (Sales & Marketing Officer, UPT, Accra, 3rd May, 2019).

The views of the informant are inconsistent with the ILO's (2005) definition of informal sector workers as generally those with low incomes or wages. This notwithstanding, the informant's views follow from the logic of the LCH, confirming that income earners save a fraction of their income for later consumption and for contingency moments, just as the studies of Modigliani (2001) and Chipote and Tsegaye (2014) reveal. Mody *et al.* (2012) and Zandberg (2015) made similar findings that informal workers earn good income and likely to save more in the present than to borrow at a high interest rate in the future to smoothen consumption when income ceases during difficult times.

Income and MPS shocks

According to Chaudhuri (2000) and Dercon (2001) informal businesses are often confronted with challenges which negatively affect their income. Consequently, pension savings of informal workers may be affected as a result of these income shocks. Assumptions under the LCH emphasized the direct relationship between income and savings, as Modigliani (2001) and Kankaanranta (2006) expound. The study, therefore, assessed two broad types of shocks which have repercussion on informal businesses. These are household and business shocks. Household shocks include scarcity of food, utility bills, housing, unusual high cost of necessities and illness of household members. The findings on household shocks are listed in Table 41.

Table 41: Informal Workers Experience of Household Shocks

	Experience of Shocks					
	Experienced shock		Did not experience shock		Total	
Household Shocks	N	%	N	%	N	%
Major food item consumed	96	29.9	225	70.1	321	100.0
Housing	70	21.8	251	78.2	321	100.0
Utility bills	91	28.3	230	71.7	321	100.0
Unusual high cost of other necessities	63	19.6	258	80.4	321	100.0
Destruction or theft of household property	39	12.1	282	87.9	321	100.0
Loss of a regular job of a household member	37	11.5	284	88.5	321	100.0
Increase in household size	46	14.3	275	85.7	321	100.0
Divorce, separation or Abandonment	42	13.1	279	86.9	321	100.0
Illness of a household member	60	18.7	261	81.3	321	100.0
Death of a household member	39	12.1	182	87.9	321	100.0

Source: Field Survey (2019)

With respect to the contributors of MPS, approximately 30 percent of the research population indicated that they have experienced food consumption shock. Shocks from utility bills and housing were cited by 28.3 percent and 21.8 percent of the contributors respectively. The statisitics showed that there was no difference in proportions of the household shocks experienced by the contributors of MPS. A Chi-square test of independence was performed to test the hypothesis that the experience of shocks does not affect MPS saving. Shock was treated as a composit variable with its response categories being shock experienced and shock not experienced. The other nominal variable being pension saving status with categories being yes or no.

Drawing conclusion on this test, the study rejected the hypothesis for housing, destruction or theft of household property as well as illness of a household member (χ^2=6.346, d.f = 1, p-value = 0.012; χ^2= 7.959, d.f = 1, p-value = 0.005; χ^2= 4.267, d.f = 1, p-value = 0.039). Housing, destruction or theft to household property and illness showed statistical significance at the 5 percent level. This illustrates that housing problems, destruction or theft of household property and illness of a member of the household have an association with MPS saving.

Table 42 shows the Phi-statistics of 0.301, 0.452 and 0.267 with corresponding p-values of 0.012, 0.005 and 0.039 respectively which confirms the association between household shocks experienced (housing, destruction or theft of household property and illness of a household member) and MPS saving. The values indicate a fairly weak association between the three pair of variables. Günther and Harttgen (2009), Dhanaraj (2016), Ahmad and Aggarwal (2017) have provided evidence to the effect that shocks reduce income levels of informal workers and by extension, savings. Like the present study, Günther and Harttgen (2009) and Dhanaraj (2016) found that health shocks were significant in reducing income and savings of informal workers. However, Mehortra (2009) attributes economic shocks as a significant factor affecting income levels of informal workers.

Table 42: Chi-Square Test of Independence – Household Shocks Versus MPS Saving

	Chi-square Test			Symmetric Measure	
Household Shocks	Chi-square	d.f	sig.	Phi statistic	sig.
Major food item consumed	0.142	1	0.707	0.038	0.707
Housing	6.346	1	0.012**	0.301	0.012**
Utility bills	0.802	1	0.371	0.094	0.371
Unusual high cost of other necessities	2.625	1	0.105	0.204	0.105
Destruction or theft of household property	7.959	1	0.005**	0.452	0.005**
Loss of a regular job of a household member	1.442	1	0.230	0.197	0.23
Increase in household size	3.582	1	0.058*	0.279	0.058*
Divorce, separation or abandonment	2.036	1	0.154	0.22	0.154
Illness of a household member	4.267	1	0.039**	0.267	0.039**
Death of a household member	0.676	1	0.411	0.132	0.411

Source: Field Survey (2019); *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1

The study also found that the sampled informal workers experience some business shocks of some sort. Forced relocation of business premises (42.1%), destruction or theft of business property including equipment and premises (29.6%), destruction or theft of inputs or inventory (29.6%), illness (29.6) and unusual large falls in sale prices of business goods or services (29.3%) are some of the business shocks listed in Table 43. It can be noted from the statistics presented in Table 43 that there were no significant differences in proportion among the various business shocks except shocks coming from forced relocation of business premises which made most of the difference (Z = 2.61, p-value = 0.0089). This may be due to the large proportion of MPS contributors afftected by such a shock.

Table 43: Informal Workers Experience of Business Shocks

Business Shocks	Experience of Shocks: Experienced shock N	%	Did not Experience shock N	%	Total N	%
Unusual high prices for business inputs	78	24.3	243	75.7	321	100.0
Unusual large fall in sale prices of business goods or services	94	29.3	227	70.7	321	100.0
Unusually large fall in the demand for your business goods or services	69	21.5	252	78.5	321	100.0
Destruction or theft of business property including equipment and premises	95	29.6	226	70.4	321	100.0
Theft of money from business	69	21.5	252	78.5	321	100.0
Destruction or theft of inputs or inventory	95	29.6	226	70.4	321	100.0
Forced relocation of business premises	135	42.1	186	57.9	321	100.0
Scam by supplier or buyer	8	2.5	313	97.5	321	100.0
Illness	95	29.6	226	70.4	321	100.0

Source: Field Survey (2019)

Similar to the household shocks, a Chi-square test of independence was performed to test the hypothesis that the experience of business shocks does not affect MPS saving. The test revealed that unusual large falls in sale prices of business goods or services showed statistical significance association with pension saving and among the other business shocks (χ^2=4.451, d.f = 1, p-value = 0.035; Phi statistic = 0.219, p-value = 0.035). It means that pension savings are affected by unusual large falls in sale prices of business goods or services. This finding is consistent with Mehortra's (2009) that global economic crisis affected income levels and business in the informal sector as a result of high export dependency, thereby affecting savings. Changes in prices therefore have significant association with income and savings. The statistics for the Chi square test of independence between business shocks and responses of MPS savings are presented in Table 44 with their corresponding symmetric measures.

Table 44: Chi-Square Test of Independence - Business Shocks Versus MPS Saving

	Chi-square Test			Symmetric Measure	
Business Shocks	Chi-square	d.f	sig.	Phi statistic	sig.
Unusual high prices for business inputs	0.285	1	0.594	0.06	0.594
Unusual large fall in sale prices of business goods or services	4.451	1	0.035**	0.219	0.035**
Unusually large fall in the demand for your business goods or services	0.104	1	0.747	0.043	0.747
Destruction or theft of business property including equipment and premises	1.324	1	0.250	0.147	0.25
Theft of money from business	0.283	1	0.595	0.078	0.595
Destruction or theft of inputs or inventory	3.253	1	0.071*	0.266	0.071*
Forced relocation of business premises	2.312	1	0.128	0.15	0.128
Scam by supplier or buyer	-	-	-	-	-
Illness	0.455	1	0.500	0.078	0.500

Source: Field Survey (2019); *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1

The finding of significant shocks such as unusual large falls in sale prices, housing, destruction or theft of household property and illness of a household member were not anticipated by the LCH. Under the assumptions of the LCH, Modigliani (2001) postulated that income is continuous until retirement. However, according to Gǘnther and Harttgen (2009), Dhanaraj (2016) and Ahmad and Aggarwal (2017), these schocks invariably disrupts the flow of income of informal sector workers which further reduces their saving rates. The conceptual framework of the study provides that informal workers from varied socioeconomic background could still accumulate MPS wealth through the complementary provisions of the ITS, the LCH and the TPB to forstal any income insecurity in retirement.

Perceived Satisfaction in Quality of Life

The final objective of the study assessed the perceived level of satisfaction with the quality of life after retirement. The respondents indicated how much they agreed with seven items measuring perceived satisfaction in quality of life after retirement. The assessment was done on a scale that varies from 5 (strong agreement) to 1 (least agreement) based on items that were similar to Diener *et al.*'s (1985). According to Nunnaly (1978) and Sekaran (2003), reliability test for the items produced a Cronbach's coefficient of 0.702 which indicates a moderate internal consistency of the measurers. The responses were analysed by summing up scores on each item divided by the total maximum sum of the scores to obtain an index for satisfaction in quality of life, as Grootaert *et al.* (2004) and Heenkenda (2017) expound. An index value close to 1 implies a strongly perceived satisfaction in quality of life after retirement.

Descriptive statistics of the perceived satisfaction with quality of life index are presented in Table 45. Both contributors of MPS and non-contributors jointly scored a median index value of 0.4857 (mean = 0.5091; std. dev = 0.1411; min = 0.200; max = 1.000) with an associated quartile deviation of 0.07857. This can be decribed as a fairly strong level of perceived satisfaction about quality of life in retirement.

Table 45: Descriptive Statistics for Perceived Satisfaction in Quality of Life Index

Statistics	Contributors	Non-contributors	Both
Count	321	334	655
Mean	0.5157	0.5025	0.5091
Std. Deviation	0.1409	0.1413	0.1411
Median	0.4857	0.4857	0.4857
Mode	0.4285	0.4571	0.4571
Minimum	0.2000	0.2000	0.2000
Maximum	1.0000	1.0000	1.0000
Skewness	0.5620	0.4360	0.4942
Interquartile	0.1714	0.1500	0.1571
Quartile Dev.	0.0857	0.0750	0.0786

Source: Field Survey (2019)

Furthermore, a Mann – Whitney U test was performend to compare contributors and non-contributors with respect to the perceived satisfaction with quality of life index. The use of this non-paramentric tool became necessary because the issues of perceived satisfaction with quality of life were based on ranks and also due to the presence of extreme values in the data as shown in Table 45. Comparatively, the mean rank for contributors of MPS was 335.41 which is higher than the mean rank of non-contributors of MPS (320.88). However, the test shows that there is no significant difference between the two populations at the five percent level (Z= -0.986, p – value = 0.324). This illustrates that respondents' perception about satisfaction with quality of life in retirement is the same irrespective of weather one is a contributor or non-contributor of MPS.

This finding aligns with Easterlin's (1974) relativist perspective about the relationship between perceived income and satisfaction about quality of life. The implication from the present study is that irrespective of one's income level or pension saving status, satisfaction about quality of life in retirement may not necessarily be dependent on income accrued from previous earning. However, one's satisfaction, according to Lloyd (2015), may relatively depend on other changeable factors such as expectation, adaptation levels and social factors. Consequently, informal workers may be dissatisfied about the quality of life in retirement when judged with income levels or pension saving status. Lewis (2014) made a similar observation in the case of households. He pointed out that higher household income is not significantly related to people's sense of satisfaction about their quality of life in retirement.

These observations notwithstanding, Panis (2004), Bender (2012), Nyce and Quade (2012) and Boodoo *et al.* (2014) posit that majority of the empirical studies established positive association between retirement income level and satisfaction about quality of life in retirement for contributors as compared to non-contributors of the MPS. The conceptual framework of the study also point out that it is possible for both contributors and non-contributors to attain satisfaction in retirement with respect to the "quality of life" in later years. Both MPS wealth and non-MPS wealth accumulated over the course of life may play significant roles. The LCH, TPB, ITS and the ATA, together made this outcome possible.

CHAPTER NINE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The chapter presents a summary of the research processes, key findings and conclusions drawn from these findings. It also makes recommendations based on the findings and conclusions that would make the delivery of MPS to informal economy workers efficient to reduce old age poverty and income insecurity. Finally, the chapter prescribes how the study contributes to knowledge, and presents limitations of the study as well as offer suggestions for further research.

Summary

The study investigated Micro Pension Saving (MPS) in shaping retirement income of informal economy workers in the Greater Accra Region of Ghana. Six objectives were outlined to guide the study. They bordered on institutional mechanisms for saving, motives for saving, financial attitude towards saving, retirement income adequacy, income-pension-saving relationship and satisfaction with quality of life after retiment.

The study employed the cross-sectional survey design under the mixed method research design with a quantitative bias to navigate through the research process. The sample size comprised 321 Informal Worker Contributors (IWC) chosen via multi-stage sampling approach and 334 Informal Worker Non-contributors (IWN) chosen via the quota sampling approach. Ten key informants, comprising, representatives from NPRA, UNIWA of Trades Union Congres (TUC) of Ghana and corporate trustees were selected using purposive sampling. Data collection was via an interview schedule and interview guide.

The instruments contain items such as sociodemographic characteristics of the respondents, livelihood activites, institutional arrangement to encourage saving, motives for saving in the tier-three pension schemes, financial knowledge and planning, amount saved, uses of savings, income earned, income shocks, perception about adequate retirement income as well as satisfaction with quality of life after retirement. The measurements of these variables were based on the nominal and ratio sacles. The analysis of data encompassed varid analytical techniques. Descriptive statistics were mainly used to describe the data. The Chi-square test of independence was used to determine associations between two nominal variables.

The principal component analysis was used to extract measures of institutional mechanisms, saving motives, and retirement income adequacy. The multiple regression analysis was to identify the contribution of each motive of saving to the total variability in the amount saved for pension. Similar analysis was performed for the institutional arrangements. Logistic regression analysis was conducted to examine the likelihood of contributing to MPS or otherwise given the financial attitude of the informal worker. Mann-Whitney U test was used to compare the differences between MPS savers and non-savers with respect to income earned, perceived retirement income adequacy and perceived satisfaction with quality of life after retirement. Correlation analysis was used to determine the relationship between income levels and pension saving status. Finally, all the quantitative analyses were buttressed with a thematic analysis.

The principal findings about the target population of the study are presented based on the order of the listed objectives of the study. Objective one examined how institutional mechanisms of MPS schemes extended coverage to informal workers. The main findings are as follows:

i. Five extracted latent variables of institutional mechanisms, namely access provision, institutional incentives, general financial information, financial institution security and economy wide security were found to be statistically significant at the five percent level in explaining changes in the amount saved for MPS. Jointly, they produced a robust model (F statistic = 6.764, p-value = 0.000) that explains 10 percent of the total variations in the amount saved for MPS.

ii. The model for the amount saved for MPS was strengthened by the inclusion of the demographic variables such as sex, level of education, marital status and number of dependents (F-value of 18.804, p-value of 0.000). They explained 35.2 percent of the total variation in the amount saved for MPS. They reduce significantly the predictive powers of the institutional constructs. The change in R square was 3.3 percent.

iii. General financial information ($\beta = -0.073,\ t = -2.244,\ p - value = 0.026$), exhibited a significant inverse relationship with pension saving. It means that the more general financial information (financial information, financial calculation, pension and contribution education) given to informal economy workers, the more unwilling they are to save for retirement.

iv. The estimated coefficient for financial institutions security ($\beta = -0.073$, $t = -2.167,\ p - value = 0.031$) inferred that the less confident informal workers feel about financial institutions and integrity in financial markets, the more willing they are to save.

v. Specific arrangements such as education and training, effective communication, flexible and attractive packages, and mobile and accessible banking were found to increase informal sector workers' access to the MPS schemes.

The second objective of the study sought to analyse informal economy workers' motives for saving in MPS schemes. The principal findings were as follows:

i. Five latent variables, namely precautionary, transactionary, bequest, retirement and self-actualization were found to inform the motive for saving in the tier-three MPS scheme. Together, the variables explained 5.8 percent of the total variation in the amount saved for MPS (F – statistic = 3.851; p-value = 0.002).

ii. The dominant saving motive was bequest and the least was the retirement motive. The bequest saving motive comprising, desire to leave inheritance, love for spouse and children and to leave a good name for generations to come had a negative relationship with the amount saved for MPS ($\beta = -0.081$, t = -2.416, p-value = 0.016).

iii. The latent variables for motive of saving together with some socio-demographic variables produced an adequate regression model for the amount saved for MPS (F-statistics = 18.881, p-value = 0.000). Though the model improved, the inclusion of the socio-demographic variables (R-square = 0.352) reduced significantly the predictive powers of the motive of saving variables. The change in R-square was 2.7 percent.

iv. Seventy-two percent of informal workers were able to keep or save money. Of this proportion, 38.0 percent did not save at regular intervals whereas, 17.0 percent, 11.0 percent and 19.0 percent saved every day, every week and every month respectively. The main reason why informal workers were unable to save was due to the small amount of income they earned (32.8%).

v. Mobile money account (70%) was found to be the main channel through which informal workers set money aside for micro pension saving.

vi. Majority (72%) of informal workers were able to put aside at least GH¢5.00 at a time as pension savings (mean = GH¢66.9315; std. deviation = GH¢117.6149; skewness = GH¢4.019). They have accumulated a median pension savings of about GH¢600.00 (mean = GH¢1,406.21; std. deviation = GH¢2,488.96; skewness = GH¢7.656; QD = GH¢840.00), having saved for a period of two years (mean = 3.04; std. deviation = 1.714; skewness = 0.650).

vii. Many contributors had made at least one withdrawal on their pension savings account (mean = 2.04; std. deviation = 1.444; skewness = 0.429) and were mainly used to acquire land and residential properties (67.1%).

Objective three investigated the effect of financial attitude of informal economy workers towards pension saving. The main findings were the following:

i. Financial knowledge attitude, comprising personal competence (β=-5.667, Wald = 21.361, d.f = 1, p-value=0.000, Exp(β)=0.003) and emotional loads balance (β= -2.106, Wald = 4.696, d.f = 1, p-value=0.000, Exp(β)=0.161) were found to be statistically significant at the 0.05 level. This means that workers with increased level of financial knowledge attitude have a reduced probability of contributing to an MPS scheme. For such workers, the odds of contributing to MPS decreases for every unit gain in the financial knowledge constructs.

ii. Personal engagement (PE), a construct for financial planning for retirement, was statistically significant in predicting the chances of contributing to a MPS scheme (β=2.236, Wald = 3.965, d.f = 1, p-value=0.046, Exp(β)=9.359), meaning that workers with high level of personal engagement would increase the probability of contributing to MPS compared to those with less of that attitude. This implies that the odds of contributing to MPS by a worker with PE are 9 times more than that of a worker with low or no PE.

iii. The odds for a worker contributing to an MPS is about two times more likely for every additional dependant (β =0.443, Wald = 45.902, d.f = 1, p-value=0.000, Exp(β)=1.558).

iv. The odd of contributing to MPS by a worker with basic education is 12 times higher compared to a worker with tertiary or higher education. Similarly, the odd is also 4 timers higher for those with no education compared with people with tertiary or higher education.

v. The odds of contributing to MPS were 15 times higher for married workers compared to workers who are widowed or divorced. Similarly, the odd of being a contributor of an MPS is about two times higher for males compared to females.

vi. The general attitude of the informal workers towards pension saving was found to be negative. This was attributed to lack of education, scepticism, non-saving culture, unplanned lives and lack of trust.

The fourth objective investigated perceived retirement income adequacy. The following were the noteworthy findings:

i. Livelihood income, guaranteed income and perceived retirement income were latent variables extracted using PCA to measure retirement income adequacy. Cumulatively, they accounted for about 82.21 percent of the total variability in the responses regarding retirement income adequacy.

ii. Based on the perceived retirement income construct, there were significant differences in how contributors and non-contributors perceived their retirement income adequacy at the five percent level (Z = -2.540, sig. = 0.011).

iii. Savers in MPS had higher retirement income adequacy based on the perceived retirement income construct (Mean rank of component score = 347.47; N=320). The non-savers exhibited a lower perceived retirement income adequacy with a mean rank component score of 306.29 for 332 non-savers respondents.

iv. Retirement income adequacy depended on the amount contributed and the frequency of contribution.

v. Retirement income adequacy would be a challenge for non contributors.

Objective five addressed the income-pension savings relationship. The main findings were as follows:

i. Approximately 40 percent of informal workers contributing to pension earned below GH₵500.

ii. Non-contributors of MPS had higher monthly median income of GH₵1550.00 (mean=1,807.45; std. dev=1,319.17; min=0.00; max=5,200; skewness = 0.499) and associated quartile deviation of GH₵1200.00 compared to contributors, with a monthly median income of GH₵580.00 (mean = 992.10; std. dev = 1178.38; min= 31.00; max = 6220; skewness

= 2.61) and an associated quartile deviation of GH₵440.00. Significant difference in income was observed (Z=-9.566, p-value=0.000).

iii. There was no significant relationship between income levels and amount saved for MPS at the 0.05 level (Spearman's rho = 0.101, p-value = 0.070).

iv. Informal workers experience of household shocks such as housing (χ^2=6.346, d.f = 1, p-value = 0.012), destruction or theft of household property (χ^2= 7.959, d.f = 1, p-value = 0.005) as well as illness of a household member (χ^2= 4.267, d.f = 1, p-value = 0.039) reduces their pension savings.

v. Informal workers complained about forced relocation of business premises (42.1%) as the main business shock experienced. Proportion of workers who experienced forced relocation of business premises were significantly different from other kinds of business shocks (Z = 2.61, p-value = 0.0089).

vi. Pension savings are affected by unusually large falls in sale prices of business goods or services (χ^2=4.451, d.f = 1, p-value = 0.035; Phi statistic = 0.219, p-value = 0.035)

The final objective explored the perceived satisfaction about quality of life after retirement. The principal findings are as follows:

i. Both contributors and non-contributors of MPS have a fairly strong level of perceived satisfaction about quality of life in retirement. A median index values of 0.4857 was observed (mean = 0.5091; std. dev = 0.1411; min = 0.200; max = 1.000).

ii. The mean rank for contributors of MPS with respect to perceived satisfaction with quality of life in retirement was 335.41, which is higher than that of non-contributors of MPS (320.88).

iii. There was no significant difference between contributors and non-contributors of MPS at the five percent level with respect to their perception about satisfaction with quality of life in retirement ($Z = -0.986$, p – value = 0.324).

Conclusions

The institutional mechanisms that were used in extending MPS schemes to informal economy workers such as access provision, incentives, general financial information, security by financial institutions and economy-wide security were found to be important. Institutions' provision of access, incentives and economy-wide security in forms of proximity to institutions, lower charges, awareness creation, returns on investment, tax exemptions and sound economic management were found to motivate informal economy workers to contribute to MPS. General financial information and security from financial institutions were further found to demotivate enrolment and subsequent contributions to the scheme.

Informal economy workers displayed several motives for enrolling in MPS. The dominant motive was bequest saving motive, followed by transaction, precautionary and retirement saving motives. It was evidenced that informal workers' love for their spouses and children, desire to leave inheritance and good name for posterity prevented them from enrolling, while others enrolled to save themselves from emergency or unexpected expenses, the cost of home repairs and rent, education finance and cost of borrowing. Those who did not enrol cited meagre amount of income earned as their main reason. This may have accounted for the small amounts saved for MPS, which are mainly paid through the mobile money system.

Furthermore, informal economy workers with financial attitudes such as financial knowledge and financial planning exhibited different probabilities of contributing to MPS compared to those who have less or no financial attitudes. Specifically, workers with personal competence and personal engagement attitudes are either likely or unlikely to contribute to MPS schemes compared to theose who do not have such financial knowledge attitudes. On the whole, informal economy workers' attitude towards pension saving was cited to be negative. The reasons for such attitudes have been attributed to lack or defective education, non-saving culture, unplanned and mistrust of financial institutions.

Contributors of MPS were found to have higher retirement income adequacy compared to non-contributing informal economy workers. The reasons were attributed to assurance of adequate retirement income and excellent living conditions guaranteed in MPS schemes till end of life as well as frequent contributions to the scheme. Those who do not contribute to retirement income adequacy would be faced with the challenge and risk of entering into poverty in later life.

The income levels of informal economy workers did not have any bearing on their pension savings. Those who earned low incomes saved just as much as their conterparts who earned higher incomes. Issues that explained the general low savings were shocks such as housing, destruction or theft of household property, illness of a household member and unusual large fall in sales prices of business goods and services.

Largely, there exists a perceived satisfaction with the quality of life after retirement amongst informal economy workers. Even though contributors of MPS were ranked as having higher perceived satisfaction with quality of life after retirement, statistically, this perception was the same irrespective of one being an MPS contributor or otherwise.

Overall, the tier-three MPS scheme has paved the way for informal economy workers to save during their productive age and consume later when old. This has been possible through the provision of institutional mechanisms such as access, incentives, information and security. In addition, with the right financial attitude, engagement in livelihood activities and the roles played in the course of life, informal economy workers are able to build both financial and non-financial wealth over time. The accumulated wealth becomes the main source of income during retirement days. This wealth guarantees income security and a quality late life.

Recommendations

Based on the findings and conclusions drawn from this study, the following recommendations were made

Corporate pension trustees should:

a. appeal to the NPRA to review the National Pension Act 766 (2008) to fully address the retirement needs of informal economy workers. Specifically, the amount accrued in the MPS funds must be credited unequally into the two mandated accounts (retirement account and personal savings account) with the biggest proportion going to the retirement account. Sections 109 and 110 of the Act only mandate withdrawal of accrued benefit on the retirement account after five years of the date of first contribution for informal workers. Most corporate trustees would split the contribution amount into two equal parts for each account. A situation which does not impose enough restriction for the accumulation of adequate pension fund for quality of life after retirement. This recommendation is particularly so as informal workers' motive for saving is precautionary and short-term in nature.

b. engage with telecommunication companies since they have become key stakeholders in the delivery of MPS to the informal workforce. Issues such as registration, service charge and payments are major concerns in the service delivery chain. For instance, high service charges and network failures are among barriers limiting some corporate trustees to adopt the mobile money system to enrol the large informal population. An instant service code from telecommunication companies should be generated for corporate trustees so as to help their clients in saving directly from their mobile money account. This reduces the issue of fraud and difficulty in accessing the pension savings. It is also evident from countries such as Kenya and Tanzania where similar sytems are being run and have yielded positive returns.

c. embark on:

   i. Specific financial retirement literacy campaigns through the National Commmission for Civic Eduction (NCCE) to educate informal economy workers on the need to subscribe to MPS schemes and save for a better quality of life after retiring from work. The use of mediums such as TV programmes, radio shows, news papers, group meetings and posters are useful for pension knowledge dissemination. This can be done through adverts that portray the idea of people who failed to save during their working years, living a miserable life after retirement compared to a worker who saved and hence having an enjoyable life after retirement as captured by the Best Pension Savings Television and radio adverts.

ii. Campaigns to promote unionization of the informal workforce to strengthen its voice in advocacy for pension saving and to encourage them to develop relations with other affiliates. These corporate trustees should collaborate with the various unions and the ministry of employment and labour relations on how to make their association robust since imformal sector workers contribute more to the Gross Domestic Product and job creation in Ghana.

iii. Revival of the role of institutions, and creation of more successful institutional mechanisms to promote pension saving and asset accumulation among populations that generally do not have access to institutionalized saving mechanisms. This would address the rate of low enrolment and pension contributions of informal economy workers. This can be done by increasing security, incentives and providing specific financial information on retirement savings.

Informal economy workers should make conscious effort to:

a. Build a saving culture by opening and operating at least a mobile money account. Such an account will facilitate their contribution to MPS schemes because most informal sector workers are not saving for retirement.

b. Improve their knowledge in retirement finance literacy. This may build their self-efficacy, self-confidence and improve their financial management and other dimensions of psychological preparedness for financial retirement planning. This can be done by collaborating with corporate trustees to provide specific financial education to them through seminars, durbars, market meetings and radio/television education.

c. Acquire an attitude of financial planning for retirement at an early stage when they enter the labour market. This is because most informal economy workers who have financial planning attitude tend to save more for the future. This can be done by enroling on financial planning education programmes on retirement savings through the corporate trustees.

The informal economy workers and the corporate pension trustees should suggest to the state to provide at least a basic old-age safety net which can be partially financed by the general budget of the state. This provision is to prevent poverty among the poorest in the informal sector that do not have the means to contribute to social security. The reason is that extending coverage by requiring low income informal sector workers to contribute to social security would not be in their best interests as they struggle to meet their basic needs

Contribution to Knowledge

Following the evidence found in this study, the study contributes to knowledge as it challenges the logic of the LCH that the primary motive for saving is to smoothen consumption during retirement. This logic of the theory is partially faulted because many informal economy workers save first and foremost with precautionary and bequest motives. In addition, the study contributes to knowledge as it discovers that the income-pension saving relationship is not always direct as the LCH claims. This is because informal economy workers in the lower end of the income bracket who face fluctuations in income save as much as those in the upper end of the income bracket and vice-versa. Whilst this finding defies rationality, it suggests that low income informal workers are willing to save to get out of poverty.

Further knowledge is contributed by the study as it adds to the debate of how financial attitude determinants shape the decision to save for retirement. The findings of this study provide quantitative evidence on the determinants of the individuals' financial attitudes and effect on pension saving. The result show that individual financial attitude constructs in the form of computational capability, emotional loads, trust, personal competence and personal engagement are particularly relevant in shaping informal economy workers' financial behaviour and choices towards pension saving.

Furthermore, few previous studies have examined how institutional mechanisms of MPS extend coverage to informal sector workers. Those studies only indicate inaccessibility of pension schemes as well as inadequate information and lack of incentives as the cause of the low enrolment in MPS schemes in Ghana. They failed to define what constitute access, information and incentive as well as their respective impact on pension saving enrolment.

This study filled this grey area as it finds that access defined as the combination of easiness in account opening without any transaction charges, eligibility criteria and awareness creation have a significance relationship with pension saving. Offering incentives in the form of a mortgage facility and tax exemption to informal workers motivate them to save for retirement. The study found that the provision of general information rather than specific education on returns of investment calculation and pension saving benefits reduces the desire to save for retirement. Finally, financial institutions' provision of security in forms such as confidence and integrity people have in financial institutions and markets were found to result in low savings. These make informal workers feel unwilling to enrol in pension schemes.

Limitations

The study encountered a few challenges. First, the results of the study were based on a cross-section of data that shows different segments of informal work groups at the same time. This could have introduced bias in the general conclusion of the entire informal workforce because of differences in group characteristics and size. Due to inadequate data, the study could not perform the analysis separately for different cohorts of informal sector work groups.

Secondly, the coverage area of Greater Accra Region could not be used as a conclusive point for the issues raised (institutional mechanism in shaping MPS, motives for saving in MPS schemes; financial attitude towards MPS schemes, retirement income adequacy in MPS schemes; income-pension saving relationship and satisfaction with quality of life) among the informal economy workforce in Ghana unless sampling of informal workers is done to cover other regions as well in another study. Moreover, the various factors used in the study were not exhaustive, and therefore further factors could be undertaken to probe more into pension saving among the informal sector workforce in Ghana.

Suggestions for Further Research

Based on the findings, conclusions and limitations of the study, the following are suggested for research in the future:

i. Analysis of the data from different cohorts of informal economy work groups. A comparative analysis of the data would be of great interest for policy targeting.

ii. The study can be expanded to cover other regions in Ghana. In addition, other psychological and institutional variables such as regulatory focus, perceived saving barriers and governance could be examined on how they shape pension saving amongst informal economy workers.

iii. A future study should also consider the contribution of the state and its agencies in relation to micropension savings in addition to supplementary contribution or subsidies through a defined funding source as it is done with employer contribution to the formal sector pension scheme.

iv. An improved and different model is suggested to investigage micro pension savings and retirement income of informal ecnomy workers. Such a model should aim at increasing the effect size of the study.

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APPENDIX A

INTERVIEW SCHEDULE FOR INFORMAL ECONOMYWORKERS

Hello Sir/Madam,

INTRODUCTION AND CONSENT

I am a student of the Institute of Development Studies (IDS), University of Cape Coast (UCC). I am conducting a research on "Micro Pension Savings and Informal Economy Workers in Greater Accra Region of Ghana". The purpose of this interview schedule is to solicit information concerning factors that shape your pension savings and other related issues about pensions for informal economy workers. I would be very pleased if you could assist me in undertaking this exercise by providing relevant responses to the questions that follow. Please be assured that all responses provided will be preserved with strong confidentiality, anonymised and used for research purposes and follow up only. Hopefully, this interview will take less than one hour to complete. May I also inform you that your participation in this interview is voluntary, so if there is anything you want to know or any question you do not understand, kindly let me know. Thank you in advance for your cooperation.

Respondent agrees to be interviewed:

[1]Yes (Proceed with the Interview) [2] No. (End Interview)

Signature: ______________________ Date: ______________________

Serial Number	Name of Interviewer	Respondent Status	
		IWC [ ]	IWN [ ]

*IWC – means Informal Worker Contributing to any kind of voluntary pension scheme

IWN – means Informal Worker Non-contributor

SECTION A: SOCIOECONOMIC BACKGROUND

A1.Indicate your sex: [1] Male [2] Female

A2. Kindly indicate your age as at your last birthday? ______________

A3. What is your marital status?

[1] Married [2] Single [3] Separated [4] Divorced [5] Others

A4. What is your last educational qualification attained?

[1] No qualification [2] Basic Education [3] Secondary/Technical/vocational [4] Diploma/Degree/Higher

A5. How many dependents do you have? ______________

SECTION B: LIVELIHOOD ACTIVITY

B1. How many informal activity/business do you run?

[1] One Only (skip B1c & B1d), [2] More than One

B1a. Main business type:

[1] Manufacturing [2] Wholesale & Retail [3] Construction/Building
[4]Service [5]Transportation [6]Food & Food related service
[7] Agric, Forestry & Fishing

B1b. How long have you been doing this main business? ____________

B1c. Minor business type: (if you have more than one business)

[1] Manufacturing [2] Wholesale & Retail [3]Construction/Building
[4]Service [5]Transportation [6]Food & Food related service [7] Agric, Forestry & Fishing

B1d. How long have you been doing this minor business? ____________

B2. What is the type of ownership of your business?

[1]Sole owner [2] Family(Relative & Non-Relative)
[3]Partnership [4]Cooperative [5] Other (specify) ____________________

B3. Is your business registered? [1]Yes [2] No [3] Don't know

B3a. If **Yes to B3**, which of the following institution is it registered with? (Multiple answers possible)

[1] Registrar general department [2] Tax administration [3] SSNIT [4] District Assembly [5] Social welfare [6] Don't know

B3b. If **No to B3**, what is the main reason for not registering your business?

[1] In the process of being registered
[2]Too many requirements to complete registration
[3] I have to pay too much to register
[4]State will ask for tax and accounting practices
[5]It could be bad for my business
[6]I do not think I need to register my business
[7] Others (specify): ______________________________

B4. What was your main reason for engaging in this business? (Multiple answers possible)______________________________

List A (for interviewer use)
Could not get formal work=1, I need additional income=2, Business provide good income opportunity=3, I could not get other work=4, It is a family tradition=5, I prefer to be my own boss=6, Business does not require much capital=7, Trained at school or in workplace especially for this job=8, Retired from another job=9, Can combine business with household or family responsibility=10, None=96
B4a. Others (specify): ______________________________

B5. What type of Bookkeeping / accounting practice do you keep for this business? (Single answer only).______________________________

List B (for interviewer use)
Detailed formal accounts=1, Simplified accounting format required for tax=2, Payment=3, Informal record for own use=4, No written records are kept=5

List C (for interviewer use)

No money needed=1, Business was inherited=2, Own savings=3, Loans from Friend and relatives=4, Contribution from other partner=5, Sale of assets=6, Loans from commercial bank/other financial institutions=7, Government lending agencies and programs=8, B6a. Other (please specify): ____________________

SECTION C: INSTITUTIONAL MECHANISMS

The following statements relate to your perception about how institutional arrangements shape your savings. Using the 1 - 5 scale, with 1 showing your least agreement and 5 showing your strongest agreement, kindly indicate the extent to which you agree with each item by ticking the appropriate box.

CA. Access	**1**	**2**	**3**	**4**	**5**	**Not applicable**
Ca1. Your proximity to financial institution motivate you to save						
Ca2.Financial institutions create awareness of pension products to encourage savings						
Ca3. The flexibility in the amount that can be saved/contributed, motivate you to save						
Ca4. Favorable transaction charges help you to save						
Ca5.The mode of collecting money/savings encouraged you to join saving schemes						
Ca6. The ease in opening account motivated you to join a saving scheme						
Ca7. You easily satisfy the eligibility criteria to a saving scheme						
Ca8.Travelling time and cost favored your consideration to enroll in a saving scheme						

Section C Continue:

CI. Incentives	1	2	3	4	5	Not applicable
Ci1.The interest rate earned on savings is acceptable						
Ci2.The tax exemption component on saving scheme is motivating						
Ci3. Entitlement to a mortgage facility encourages saving						
Ci4.Enjoying complimentary services like health insurance and access to loans motivates saving						
Ci5. Having a better investment return fosters saving						
CF. Facilitation						
Cf1. Pension saving providers are appealing especially, staff treatment, supports and "automatic" enrollment.						
Cf2. Your contributions are secured						
Cf3. The rules regarding withdrawals are acceptable						
Cf4. You save more because the claim payment procedure are simple						
Cf5. Prompt feedbacks from financial institutions make you save more						
CIN .Information						
Cin1.You receive pension education which inspires saving						
Cin2. Periodic financial statements offered motivates your savings						
Cin3. Tutorials on simple financial calculations help you to save						
Cin4. The financial information you received enabled you to choose an appropriate pension plan						
Cin5. Education on how to make contribution inspired your saving						
Cin6. Education on how to compute the return on your investment motivates you to save						
Cin7. Information on the benefit of pension savings encourages you to saving						

Section C Continue:

CE. Expectation	1	2	3	4	5	Not applicable
Ce1.You had a reward after meeting a saving target						
Ce2. Promotional rewards/prizes motivate saving						
Ce3.You are encourage to save because of monetary incentive from institution						
Ce4. Gifts from institutions entice you to open account						
CR. Restriction						
Cr1. Restrictions impose on withdrawal helps saving						
Cr2. The 5 years or more restriction to access savings is acceptable						
Cr3. Easy to resist temptations to spend money						
Cr4. The minimum number of transactions to be executed motivate your participation						
Cr5. The entry and exit cost charges are acceptable						
Cr6.Rules regarding borrowing/loans are acceptable						
CS. Security						
Cs1.Your institution is the safe place to keep money						
Cs2.You trust your institution with your savings						
Cs3.You are confidence your institution will manage all kinds of investment risks						
Cs4.The regulatory authorities are competent to handle any fraudulent schemes						
Cs5.There is integrity in the political system						
Cs6.There is integrity in the financial market						
Cs7. Sound management of the economy boost my confidence to save						

C2. What are the main source(s) of your knowledge about pensions?
[1] Family & Friends [2] Newspaper [3] TV Programmes
[4] Group meetings [5] Others, specify________________

C3. On a scale of one to five where one is no knowledge and five is well informed, how would you rate your knowledge of pensions?
None 1 2 3 4 5 Very well informed

C4.Please state anything that serves as a support or a barrier to you contributing to pension savings:
____

SECTION D: MOTIVE FOR SAVING

D1. Do you keep / save money? [1] Yes [2] No

***If No, move to C11.**

D2. How often do you put money aside?
[1] Everyday [2] Every week [3] Every month
[4] I don't save at regular interval

D3. What is the average amount you are able to save at a time?
____

C4. The following statements relate to why you save or put money aside. Using a 1 - 5 scale, with 1 showing your least agreement and 5 showing your strongest agreement, kindly indicate the extent to which you agree with each item by ticking the appropriate box.

Why do you save?	**1**	**2**	**3**	**4**	**5**
Da. Precautionary Savings Motive					
1. Emergency/ unexpected expenses (example, illness and other life threatening circumstances)					
2. Home repairs and Rent					
3. Fluctuations in income or high income uncertainty due to reliance on informal employment					
4. Education finance for children and yoursel					
5. Political uncertainties (examples: governance, regulation)					
6. Economic uncertainties (examples: inflation, exchange rate)					
7. The cost of borrowing (interest rate) is high and uncertain					
8. Reserve for necessities					
Db. Bequest Savings Motive					
1. Leave inheritance					
2. The love for spouse & children					
3. Children's growth					
4. Leave a good name for generations to					

	1	2	3	4	5
come					
Dc. Transaction Savings Motive					
1. Saving for daily functioning/expenses					
2. Making reserves for everyday needs					
3. Funerals, weddings and special events of family & friends					
4. The enterprise/business (expansion) motives					
Dd. Retirement Savings Motive					
1. To smoothen consumption in retirement					
2. To maintain income security when retire					
3. Old-age expenses					
4. Perpetuation of the span of life					
5. Earn decent pension (income) when retire					
Why do you save?	**1**	**2**	**3**	**4**	**5**
De. Self-actualisation					
1. Self esteem					
2. Luxurious/extravagant living					
3. Self-gratification					
4. Holidays					
5. Money availability					
Df. Purchase of assets (examples, vehicles, land, house clothing, television, etc)					
Dg. Uncertainty concerning time of death					

D5. I would like to ask you about your choice of saving vehicle/institution.

	D5.In the **past months/years,** have you, personally, saved or set aside money by using a:	Yes=1, No=2, None=3,**If None (3), skip to C5i.**	D6. How long have you been saving?	D7. Total amount of savings as of today in GH¢	D8. Number of times you have withdrawn funds from account
D5a.	C5a.Corporate Pension Trustee or Voluntary Pension Scheme				
D5b.	C5b. Micro Finance Institution				
D5c.	C5c. Savings & Loan Company				
D5d.	C5d. Mobile Money Account				
D5e.	C5e.Bank/ Investment account				
D5f.	C5f. Susu Collection				
D5g.	C5g.Family Member/Friend				
D5h.	C5h.By storing in your house or any other place				
D5i.	**C5i. If None (3), why don't you save?** Continue at C11:				

D9. What is/are the planned use of the savings you currently have? (Refer from list A). Multiple answers possible: ______________________________

come					
Dc. Transaction Savings Motive					
1. Saving for daily functioning/expenses					
2. Making reserves for everyday needs					
3. Funerals, weddings and special events of family & friends					
4. The enterprise/business (expansion) motives					
Dd. Retirement Savings Motive					
1. To smoothen consumption in retirement					
2. To maintain income security when retire					
3. Old-age expenses					
4. Perpetuation of the span of life					
5. Earn decent pension (income) when retire					
Why do you save?	**1**	**2**	**3**	**4**	**5**
De. Self-actualisation					
1. Self esteem					
2. Luxurious/extravagant living					
3. Self-gratification					
4. Holidays					
5. Money availability					
Df. Purchase of assets (examples, vehicles, land, house clothing, television, etc)					
Dg. Uncertainty concerning time of death					

D5. I would like to ask you about your choice of saving vehicle/institution.

			D6.	D7.	D8.
	D5.In the **past months/years**, have you, personally, saved or set aside money by using a:	Yes=1, No=2, None=3,**If None (3), skip to C5i.**	How long have you been saving?	Total amount of savings as of today in GH¢	Number of times you have withdrawn funds from account
D5a.	C5a.Corporate Pension Trustee or Voluntary Pension Scheme				
D5b.	C5b. Micro Finance Institution				
D5c.	C5c. Savings & Loan Company				
D5d.	C5d. Mobile Money Account				
D5e.	C5e.Bank/ Investment account				
D5f.	C5f. Susu Collection				
D5g.	C5g.Family Member/Friend				
D5h.	C5h.By storing in your house or any other place				
D5i.	**C5i. If None (3),** why don't you save? Continue at C11:				

D9. What is/are the planned use of the savings you currently have? (Refer from list A). Multiple answers possible:

____

List D (for interviewer use)

Land/property- agriculture = 1, land/property –residential =2, land/property- business =3, agriculture input/equipment - business =4, input/equipment =5, business – pay employees =6, housing repair/ purchases =7, education/training =8, routine health expenditure = 9, emergency health expenditure =10, ceremonies(weddings, funeral)=11, vehicle purchase or repairs =12, food = 13, clothing =14, retirement =15, other expenditure =16, repay other loan =17, regular household support =18, don't know=99,
other (specify):

D11. Would you consider saving for retirement a necessary thing to do?
[1] Yes [2] No

D12. Explain your response to C11:

____

D13. How do you intend/plan to keep up with your quality of life when you retire from work?

____

SECTION E: FINANCIAL ATTITUDE

The following statements relate to your financial attitude, in terms of financial knowledge, risk tolerance and planning for retirement and how they generally shape your pension savings. Using the 1 - 5 scale, with 1 showing your least agreement and 5 showing your strongest agreement, kindly indicate the extent to which you agree with each item by ticking the appropriate box.

EA: FINANCIAL KNOWLEDGE TOWARDS RETIREMENT

CC. Computation Capability	**1**	**2**	**3**	**4**	**5**	**Not applicable**
Cc1.You have knowledge about how much is needed at retirement						
Cc2. You have knowledge about how much to save monthly to retire comfortably						
Cc3.You have knowledge about calculations done to estimate savings for retirement						
Cc4. You have knowledge about calculations of benefits due on retirement						
ELB. Emotional Loads						
Fel1.Daily decisions about money are a great burden for you.						
Fel2.You do not have sufficient income that is why you could not save for your retirement.						
Fel3.Thinking about retirement makes you nervous.						

Fel4.In the domain of your personal finances, you live from day to day.						

Table EA continues:

TPS. Trust in Pension Scheme	1	2	3	4	5	Not applicable
Ftps1.Saving in the tier-three scheme will improve your standard of living in retirement.						
Ftps2. The decision to participate in the tier-three scheme required less effort.						
Ftps3. Participation in the tier-three scheme requires tracking legislative changes.						
Ftps4.Entering the tier-three scheme seems to you as difficult paperwork.						
Ftps5. Saving in the tier-three scheme is discouraging, as it requires more knowledge about investing than you know now.						
PC. Personal Competence						
Fpc1. You understand the information about saving for retirement, available to you.						
Fpc2.You know how to plan your personal finances to secure your pension very well.						
Fpc3.You know more than your peers about how to financially prepare for retirement.						
Fpc4. In financial matters, you are confident enough to prepare yourself adequately for retirement.						
Fpc5. You know how to calculate interest on your investment very well						
Fpc6. You understand investment options for pension schemes						
Fpc7. You are knowledgeable about Investment						
Fpc8. You are able to use financial knowledge to make personal financial decisions						
Fpc9. You understand economic matters such as interest, inflation, mortgage and the likes						

EB: FINANCIAL PLANNING FOR RETIREMENT (FPR)

Using the 1 - 5 scale, with 1 showing your least agreement and 5 showing your strongest agreement, kindly indicate the extent to which you agree with each item by ticking the appropriate box.

PE. Personal Engagement	1	2	3	4	5	Not applicable
Fpe1.Financial planning for retirement is necessary since entering your first business						
Fpe2.It is enough to start financial preparation for retirement in middle age.						
Fpe3. If you do not initiate your financial preparation for retirement now, you will waste your chance for a decent pension						
Fpe4. It is still too late for you to address the issues of financial preparation for retirement.						
Fpe5. You are working on what you can do now to financially secure yourself for retirement.						
Fpe6.You engage in financial preparation for retirement, because you now have very few problems to deal with.						
Fpe7. You are quick in deciding on financial preparation for retirement						
Fpe8. Choosing from the options of financial preparation for retirement is very easy for you						
RPAL. Retirement Planning Activity Level	**1**	**2**	**3**	**4**	**5**	**Not applicable**
Frpal1.You frequently read articles/brochures on investment or financial planning.						
Frpal2.You regularly tuned into television/radio shows on investment or financial planning.						
Frpal3.You often conduct a thorough assessment of your net worth						
Frpal4.You are able to identify specific spending plans for the future.						
Frpal5. Discussed financial planning goals with a professional(s) in the field.						

Frpal6. Discussed retirement plans with a knowledgeable friend or acquaintance						

Table EB continues:
Using the 1 - 5 scale, with 1 showing your least agreement and 5 showing your strongest agreement, kindly indicate the extent to which you agree with each item by ticking the appropriate box.

RGC. Retirement Goal Clarity	**1**	**2**	**3**	**4**	**5**	**Not applicable**
Frgc1.Set clear goals for gaining information about retirement.						
Frgc2. Thought a great deal about quality of life in retirement.						
Frgc3. Set specific goals for how much will need to be saved for retirement.						
Frgc4. Have a clear vision of how life will be in retirement.						
Frgc5. Discussed retirement plans with a spouse, friend, or significant persons						
SKFPR. Self-Rated Knowledge About (FPR)	**1**	**2**	**3**	**4**	**5**	**Not applicable**
Fsrk1. You are very knowledgeable about financial planning for retirement						
Fsrk2. You know more than most people about retirement planning						
Fsrk3. You are very confident in your ability to do retirement planning						
Fsrk4. When you have a need for financial service, you know exactly where to obtain information on what to do						
Fsrk5. You are knowledgeable about how Social Security works.						
Fsrk6.You are knowledgeable about how private investment plans work.						
FTP. Future Time Perspective	**1**	**2**	**3**	**4**	**5**	**Not applicable**
Fftp1. You follow the advice to save for a rainy day						
Fftp2. You enjoy thinking about how you will live years from now in the future						
Fftp3. The distant future is too certain						

to plan for.						
Fftp4.The future seems very clear and certain to you.						
Fftp5. You pretty much live on a day-to-day basis.						
Fftp6.You enjoy living for the moment and knowing what tomorrow will bring.						

EC: FINANCIAL RISK TOLERANCE

FRT. FINANCIAL RISK TOLERANCE	1	2	3	4	5	Not applicable
Ffrt1. You easily undertake risky investment						
Ffrt2. You undertake investments even when the chance of making a loss is high.						
Ffrt3. So long as the returns are high, you do not mind if the investment scheme is unregistered and unregulated.						
Ffrt4. Long-term investments make you nervous.						

SECTION F: PERCEIVE RETIREMENT INCOME ADEQUACY

F1. At what age do you plan to retire from working?

____

F1a. Do you know of any close relation who has retired?
[1] Yes [2] No ***If No, move to F2.***
F1b. How would you describe their living condition?
[1] Worst [2]Bad [3]Normal [4] Good [5] Excellent

F2. Below are statements about your perceived income adequacy in retirement. Using the 1 - 5 scale, with 1 showing your least agreement and 5 showing your strongest agreement, kindly indicate the extent to which you agree with each item by ticking the appropriate box.

F2a. Income Adequacy in Retirement	1	2	3	4	5
F2a1. Your livelihood earning would be adequate in meeting your basic needs after stopping work					
F2a2. You will have access to enough income (pension) during your retirement					
F2a3. You will have regular cash flow (income/pension) to meet your basic needs in retirement					
F2a4. The purchasing power of your income (accumulated savings) would be strong to take you					

through retirement					
F2a5. You have a guaranteed income (Savings) to improve your wellbeing in retirement					
F2a6. You are assured of an adequate retirement income till end of life					
F2a7. Your living condition will be excellent when you retire					
F2a8. You are confident your accumulated savings would cater for your basic needs in retirement					
F2a9. With your current accumulated savings, you perceive having a satisfied retirement in the future					
F2a10. There is the likelihood that at some point in the future, you will not have enough financial resource to meet your needs.					
F2a11. You are unable to buy or do particular things you need because of income constraints.					
F2a12. You often feel you have too little money to spend on your needs					
F2a13. You perceive chances in the future that you will not have enough money to meet my needs					
F2a14. Shortage of money stops you from doing things you want to do					

Section F Continue:

F2b. Satisfaction in Quality of life	**1**	**2**	**3**	**4**	**5**
F2b1. You feel satisfied with the way your life has turned out					
F2b2. You look into the future of your life with a sense of happiness					
F2b3. You perceive yourself having better retirement life compared with other retirees you know					
F2b4. In most ways your life is close to your ideal					
F2b5. The conditions of your life are excellent					
F2b6. So far you have the important things you want in life					
F2b7. If you could live your life over, you would change almost nothing					

SECTION G: PENSION SAVINGS-INCOME RELATIONSHIP

List all income generating activities that you have been involved within the past week ("Income" refers to the amount that the respondent can allocate to personal use/household expenses/savings. Whenever this activity is a business, this is the same as profit).

			G2	G3
	In a typical workweek, how many days do you spend on this activity?	Write	Income generated in a day(GH¢)	Income generated in a typical month(GH¢)
G1a	Main Business:			
G1b	Minor Business:			

G4. Beside your usual income earned in your businesses, do you have any additional source of income?

	G4a. Additional source of income	Tick	D4b. Amount (GH¢ per month)
1.	Rental income		
2.	Gifts		
3.	Interest		
4.	Royalty		
5.	Government remittance		
6.	Other, specify:		

G5. I would like to ask you about some adverse household shocks and how they affected your income as well as your savings:

		G5a	G5b(1-10)	G5c(1-10)	G5d(1-10)	G5e(1-10)
	Household shocks	Over the past few months, was your business/household affected negatively by any of the following events? 1= Yes 2 = No	Did [shock] cause a reduction in your income? 1= Yes 2 = No	What was the monetary value of the reduction in your income caused by shock?	Did [shock] cause a reduction in your saving rate? 1= Yes 2 = No	What was the number of days/weeks you were unable to save because of the shock?
HH_Shock1	Major food item consumed					
HH_Shock2	Housing					
HH_Shock3	Utility bills					
HH_Shock4	Unusual high cost of other necessities: ________					
HH_Shock5	Destruction or theft of household property					
HH_Shock6	Loss of a regular job of a household member					

HH_Shock7	Increase in household size					
HH_Shock8	Divorce, separation or abandonmen t					
HH_Shock9	Illness of a household member					
HH_Shock10	Death of a household member					

G6. I would like to ask you about some adverse business shocks and how they affected your income as well as your savings:

		G6a.	G6b.	G6c.	G6d.	G6e.
	Business shocks	Over the past few months, was your business/household affected negatively by any of the following events? 1= Yes 2 = No	Did [shock] cause a reduction in your income? 1= Yes 2 = No	What was the monetary value of the reduction in your income caused by shock?	Did [shock] cause a reduction in your saving rate? 1= Yes 2 = No	What was the number of days/weeks you were unable to save because of the shock?
B_Shock1	Unusual high prices for business inputs					
B_Shock2	Unusual large fall in sale prices of business goods or services					
B_Shock3	Unusually large fall in the demand for your business goods or services					
B_Shock4	Destruction or theft of business property including equipment and premises					
B_Shock5	Theft of money from business					
B_Shock6	Destruction or theft of inputs or inventory					
B_Shock7	Forced relocation of business premises					
B_Shock8	Scam by supplier or buyer					
B_Shock9	Illness					
B_Shock10	Other major setbacks? specify					

G7. Rank three of the most significant shocks your household and businesses experienced in D5& D6 respectively?

	G7. Three most severe household shocks	
	G7a.Household shocks	G7b.Business shocks
1 = most severe		
2 = second most severe		
3 = third most severe		

G9. What did you do in response to the severest shocks in G7a and G7b to help your business recover?

____

APPENDIX B

INTERVIEW GUIDE FOR KEY INFORMANTS

SECTION A: INTRODUCTION

1. Introduces self and explain the purpose of the interview. Giving assurance of confidentiality, candid answers and ensuring cordial atmosphere.
2. Introduce recorder and ask interviewee to introduce self
   Probe into: years of employment with the service provider, position, age bracket and educational background.

SECTION B: INSTITUTIONAL MECHANISMS IN SHAPING PENSION SAVINGS

3. What specific arrangements does your company put in place to increase access to the scheme by informal economy workers?
4. Can you mention any type of information the company provide to informal investor that motivate them to save for pension.
5. Does the scheme have any kind of incentives that motivate pension savings for informal investors?
   (Probe same for facilitation, expectation, restriction and security)

SECTION C: INFORMAL WORKERS AND MOTIVES FOR SAVING WITH THE SCHEME

6. How familiar are you with informal workers investing in your scheme?
7. Approximately how many people/what percentage of people has registered with the scheme?
   Probe: groups of informal work; income bracket/social class, average amount saved, frequency of saving, frequency of withdrawal, age bracket and gender.
8. In your opinion, how can you explain these numbers?
9. In your opinion, do they understand the concept behind the scheme?
10. How do you perceive their understanding of the pension saving scheme?
11. Can you clarify what you feel is their motive for saving in the scheme?
12. What is the attrition level?
13. Do you think informal workers consider retirement savings a priority? Why?
14. For those who are unwilling to join the scheme, what do you think maybe their reason?
15. How else do you think they save/invest for retirement?

SECTION D: FINANCIAL ATTITUDE TOWARD PENSION SAVING

16. What is the general attitude of these workers towards the scheme?
17. How do you describe their knowledge about pension saving?
18. How do you describe their attitude towards financial planning for retirement?
19. How do you describe the attitude towards risk taking for long term investment?
20. What are they not happy about/that they would like to be done differently?
21. Are there any particular complaints that these workers have concerning the scheme?

SECTION E: RETIREMENT INCOME ADEQUACY FROM THE SCHEME

22. With your experience, do you feel savers in the tier-three scheme stand to have adequate income during retirement?
23. What do you think about retirement income adequacy for non-contributors informal workers?

Thank you!

APPENDIX C

INTRODUCTRY LETTER

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

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C/O Directorate of Research, Innovation and Consultancy

10TH JUNE, 2019

Mr. Dominic Buer Boyetey
Department of Integrated Development Studies
University of Cape Coast

Dear Mr. Boyetey,

ETHICAL CLEARANCE – ID: (UCCIRB/CHLS/2019/19)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for the implementation of your research protocol titled **Micro pension savings and informal economy workers in the Greater Accra Region of Ghana.** This approval requires that you submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

Please note that any modification of the project must be submitted to the UCCIRB for review and approval before its implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Samuel Asiedu Owusu, PhD
UCCIRB Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST
Date: 11/06/19

APPENDIX D

ADDITIONAL RESULTS

Table D1 Institutional Mechanisms Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Your proximity to financial institution motivate you to save	89.38	292.209	0.241	0.821
Financial institutions create awareness of pension products to encourage savings	89.65	292.69	0.219	0.822
Favorable transaction charges help you to save	89.27	293.572	0.224	0.822
The ease in opening account motivated you to join a saving scheme	89.14	294.175	0.213	0.822
You easily satisfy the eligibility criteria to a saving scheme	89.57	291.436	0.291	0.82
Travelling time and cost favored your consideration to enroll in a saving scheme	89.1	283.691	0.403	0.816
The interest rate earned on savings is acceptable	89.73	287.804	0.376	0.817
The tax exemption component on saving scheme is motivating	89.41	285.406	0.431	0.815
Entitlement to a mortgage facility encourages saving	89.21	287.841	0.306	0.819
Enjoying complimentary services like health insurance and access to loans motivates saving	89.7	284.917	0.421	0.815
Having a better investment return fosters saving	89	287.611	0.369	0.817
Pension saving providers are appealing especially, staff treatment, supports and "automatic" enrollment	89.31	288.233	0.348	0.818
Your contributions are secured	89.27	286.479	0.368	0.817
The rules regarding withdrawals are acceptable	89.28	287.83	0.315	0.819
You save more because the claim payment procedure are simple	89.23	285.189	0.412	0.816
Prompt feedbacks from financial institutions make you save more	89.67	295.688	0.181	0.823
You receive pension education which inspires saving	89.24	296.439	0.199	0.822
Periodic financial statements offered motivates your savings	89.21	286.196	0.361	0.817

Table D1 Continued

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Tutorials on simple financial calculations help you to save	89.55	289.277	0.314	0.819
The financial information you received enabled you to choose an appropriate pension plan	89.55	283.122	0.471	0.814
Education on how to make contribution inspired your saving	89.1	284.836	0.396	0.816
Education on how to compute the return on your investment motivates you to save	89.49	287.531	0.357	0.817
Information on the benefit of pension savings encourages you to saving	89.14	286.758	0.373	0.817
You had a reward after meeting a saving target	89.32	288.983	0.309	0.819
Promotional rewards/prizes motivate saving	89.24	287.309	0.355	0.817
You are encourage to save because of monetary incentive from institution	89.47	288.674	0.313	0.819
Gifts from institutions entice you to open account	89.27	287.934	0.38	0.817
Rules regarding borrowing/loans are acceptable	89.37	292.106	0.243	0.821
Your institution is the safe place to keep money	89.66	292.913	0.214	0.822
You are confidence your institution will manage all kinds of investment risks	89.27	293.683	0.221	0.822
There is integrity in the political system	89.15	294.287	0.211	0.822
There is integrity in the financial market	89.57	291.436	0.291	0.82
Sound management of the economy boost my confidence to save	89.1	283.691	0.403	0.816

Source: Field Survey (2019)

Table D2 Descriptive Statistics for Institutional Mechanisms Variables

	Mean	Std. Deviation	N
log of amt save	1.4304	0.59103	311
Access provision	-0.00554	0.998752	311
Institutional incentives	0	0.999	311
Gen. financial information	0.004859	1.003302	311
Fin. Institution security	-0.00753	0.995654	311
Economy-wide security	0.004967	1.01125	311

Source: Field Survey (2019)

Table D3 Correlation Results of Institutional Mechanisms Variables

		Log amt save	Access provision	Inst. Incentives	Gen. fin. Info.	Fin. Inst. security	Eco-security
Pearson Correlation	Log amt save	1	0.161	0.132	-0.124	-0.175	0.168
	Access provision	0.161	1	0.026	-0.004	0.024	0.043
	Inst. incentives	0.132	0.026	1	0.157	-0.08	0.012
	Gen. fin. Info.	-0.124	-0.004	0.157	1	0.104	-0.064
	Fin. Inst. security	-0.175	0.024	-0.08	0.104	1	-0.265
	Eco-security	0.168	0.043	0.012	-0.064	-0.265	1
Sig. (1-tailed)	logamtsave	.	0.002	0.01	0.014	0.001	0.001
	Access provision	0.002	.	0.321	0.469	0.336	0.227
	Inst. incentives	0.01	0.321	.	0.003	0.079	0.417
	Gen. fin. Info.	0.014	0.469	0.003	.	0.034	0.129
	Fin. Inst. security	0.001	0.336	0.079	0.034	.	0
	Eco-security	0.001	0.227	0.417	0.129	0	.
N	logamtsave	311	311	311	311	311	311
	Access provision	311	311	311	311	311	311
	Inst. incentives	311	311	311	311	311	311
	Gen. fin. Info.	311	311	311	311	311	311
	Fin. Inst. security	311	311	311	311	311	311
	Eco-security	311	311	311	311	311	311

Source: Field Survey (2019)

Table D4: Results of Reliability Test for Motives for Pension saving

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Emergency/ unexpected expenses	33.37	61.846	0.414	0.684
Home repairs and Rent	33.62	63.535	0.454	0.681
Fluctuations in income	33.89	62.731	0.416	0.684
Education finance	33.65	60.153	0.649	0.658
Political uncertainties	34.27	66.12	0.373	0.691
Economic uncertainties	33.81	64.809	0.39	0.688
The cost of borrowing	33.9	64.492	0.42	0.685
Reserve for necessities	33.98	66.006	0.345	0.694
Leave inheritance	33.43	64.847	0.306	0.698
The love for spouse & children	33.22	67.63	0.215	0.708
leave a good name for generation to come	33.62	63.535	0.454	0.681
C4d1. To smoothen consumption in retirement	33.79	69.6	0.147	0.714
Perpetuation of the span of life	33.84	68.734	0.181	0.711
Earn decent pension when retire	32.98	69.871	0.134	0.716
Self esteem	33.43	64.847	0.306	0.698
Luxurious/extravagant living	33.38	67.397	0.236	0.706
Self-gratification	33.09	69.734	0.1	0.723
Holidays	33.22	67.63	0.215	0.708

Table D5: Collinearity Diagnostics for Motives for Pension saving

Model		Collinearity Statistics	
		Tolerance	VIF
1	Precautionary	0.742	1.348
	Transaction	0.702	1.424
	Bequest	0.915	1.093
	Retirement	0.989	1.011
	Self-actualization	0.983	1.018
2	Precautionary	0.725	1.379
	Transaction	0.692	1.446
	Bequest	0.902	1.109
	Retirement	0.932	1.073
	Self-actualization	0.959	1.043
	Sex	0.86	1.163
	Education	0.86	1.162
	Marital Status	0.919	1.088
	Dependents	0.967	1.034
	Age	0.955	1.047

Table D6: Summaries of the Sociodemographic Variables in the Multiple Regression

	Sex	Education	Marital Status	Dependents	Age
Count	321	321	321	321	321
Mean	0.26	0.92	0.08	3.49	38.89
Sample variance	0.19	0.07	0.07	3.94	87.71
Sample standard deviation	0.44	0.27	0.27	1.98	9.37
Minimum	0	0	0	0	20
Maximum	1	1	1	9	68
Range	1	1	1	9	48
First quartile	0.00	1.00	0.00	2.00	32.00
Median	0.00	1.00	0.00	3.00	38.00
Third quartile	1.00	1.00	0.00	4.00	44.00
Interquartile range	1.00	0.00	0.00	2.00	12.00
Mode	0.00	1.00	0.00	4.00	35.00
Low extremes	0	0	0	0	0
Low outliers	0	0	0	0	0
High outliers	0	0	0	12	4
High extremes	0	0	0	0	0

Table D7: List of Districts and Communities from which sampling units were taken

SN	Districts	Communities	IWC	IWN	Total
1	Accra Metropolis	Morkola	25	20	45
		Kaneshie	27	18	45
		Abossay Okai	15	8	23
		Sakaman	21	25	46
		Circle	10	15	25
		Abeka	21	10	31
		Dansoman	8	15	23
		Darkuman	4	8	12
2	Ada West	Sege	2	4	6
3	Adenta Municipality	Adenta	4	10	14
4	Ashaiman Municipality	Ashaiman	5	10	15
5	Dangme East	Ada Junction	1	3	4
6	Ga Central	Sowutuom	6	10	16
		Anyaa	2	10	12
		Santa Marie	5	10	15
7	Ga East	Abokobi	24	20	44
		Haatso	9	15	24
		Dome - Kwabenya	13	18	31
8	Ga South Municipality	Mallam Market	25	28	53
		Gbawe	12	7	19
		Weija	7	5	12
9	Ga West Municipal	Amasaman	4	5	9
		Pokuase	2	4	6
10	Kpone Katamanso	Kpone Junction	6	4	10
		Gbetsile	2	4	6
11	La Dade-Kotopon Municipal	La Maami	23	18	41
12	La-Nkwantantanang-Madina	Madina	25	28	53
13	Ledzokuku-Krowor Municipal	Teshie	30	20	50
		Nungua	21	15	36
14	Ningo-Prampram	Dawherenya	8	5	13
15	Shai-Osudoku	Dodowa	3	5	8
16	Tema Metropolitan Assembly	Tema	20	23	43
	Total		390	400	790

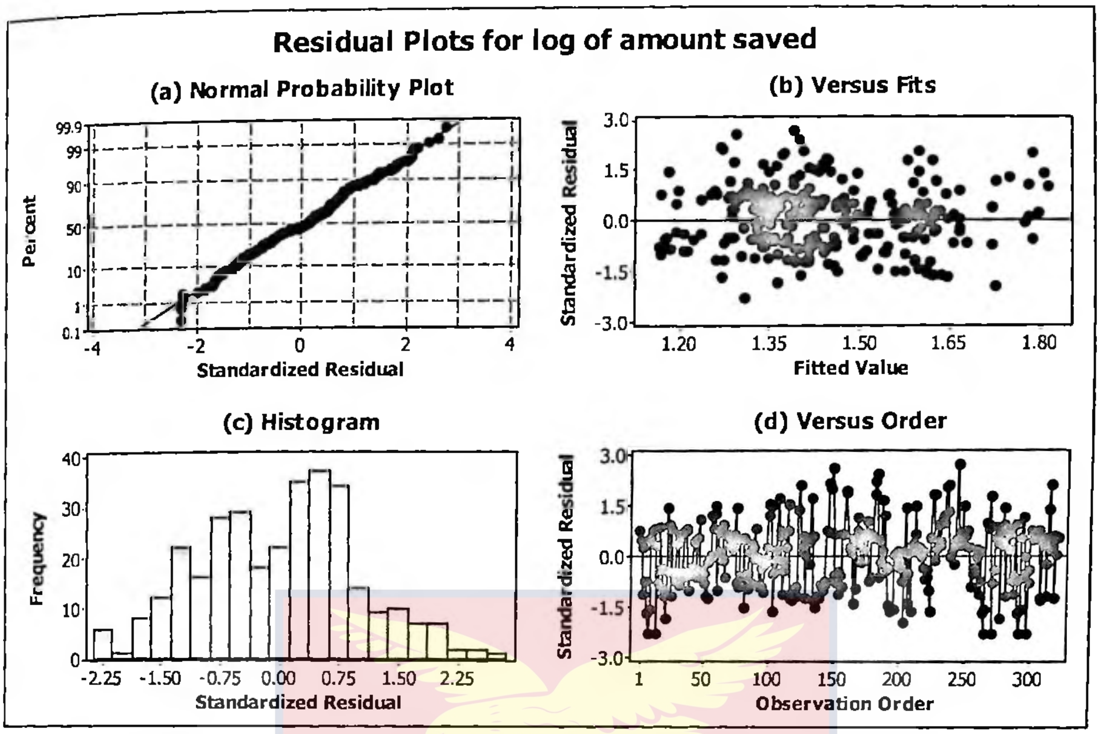

Figure D1: Graph of Residuals diagnosing assumption underlying the regression model for the motives of saving

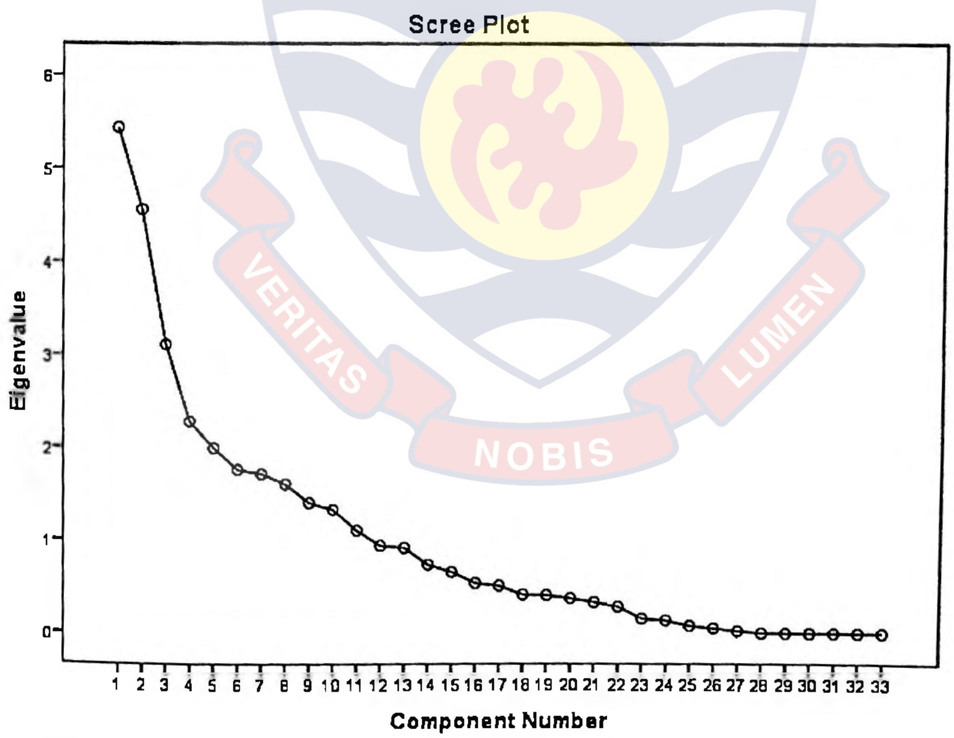

Figure D2: Scree plot showing the number of latent variables for institutional mechanisms

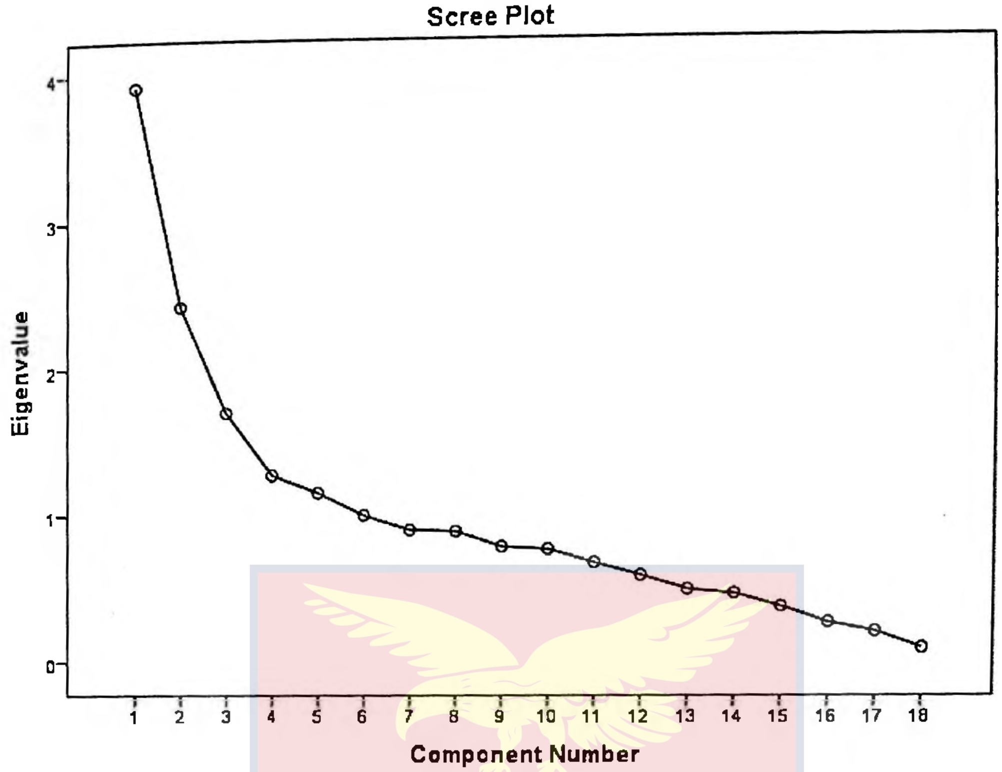

Figure D3: Scree plot showing the number of latent variables for motive of saving

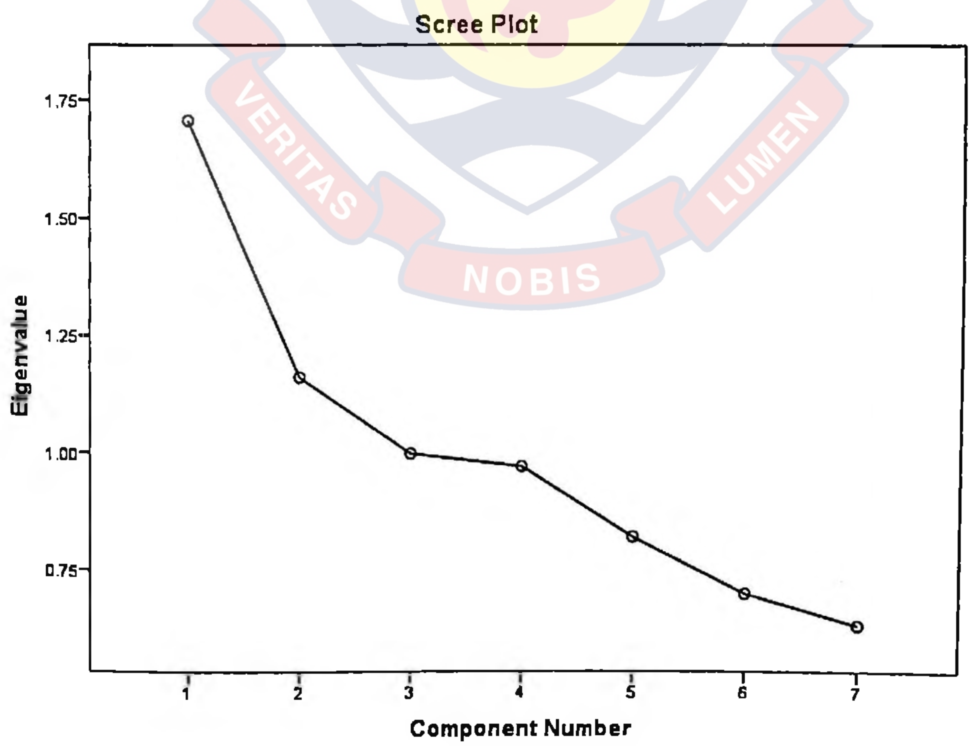

Figure D4: Scree plot showing the number of latent variables for Retirement income Adequacy