Pension Reforms

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Table of Contents **Pages**

LIST OF TABLES

LIST OF FIGURES

List of Abbreviations

AU	-	African Union
DB	–	Defined Benefit
DC	–	Defined Contribution
EU	-	European Union
ICESCR	–	International Covenant on Economic, Social and Cultural Rights
ILO	-	International Labour Organization
ISSA	-	International Social Security Association
NPRA	-	National Pensions Regulatory Authority of Ghana
OECD	-	Organization for Economic Co-operation and Development
SSNIT	–	Social Security and National Insurance Trust of Ghana
UDHR	–	Universal Declaration of Human Rights
UN	–	United Nations
WB	-	World Bank
NRCD	-	National Redemption Council Decree
SMCD	-	Supreme Military Council Decree
PNDCL	-	provisional National Defence Council Law
ECOWAS	-	Economic Community of West African States.
CAP 3	-	Chapter 30 of the 1950 British Colonial Ordinances
PCP	-	Presidential Commission on Pensions
LEAP	-	Livelihood Empowerment against Poverty
NHIA	-	National Health Insurance Authority.
NHIS	-	National Health Insurance Scheme
TB Rate	-	Treasury Bill Interest Rate
GSE	-	Ghana Stock Exchange

Abstract

Pension reforms have become a global phenomenon. Many countries have gone through it. Implementation of some of the reforms was on the advice of international financial institutions and other experts. Despite the collaboration, further reforms after the first reform in some of the same countries continue, and in some cases, reform reversals have occurred.

There are many reasons why pension systems go through reforms, just as every country has varied socio-economic, political, environmental, and technological circumstances.

However, adequacy of benefits, the extent of coverage of the population, and the pension system's financial sustainability seem to be dominant causes of pension reforms. Throughout the various reform regimes worldwide, there appears to be further pressure for reform anytime implementation of pension reform occurs without much attention to good pension benefits. The issue is whether pension reform leads to improved pension benefits or does pension reform guarantee improved pension benefits.

In this study, the Republic of Ghana, South of the Sahara, undertook seven pension reforms between 1940 and 2010. Each of the reforms followed further pressure for reform after implementing the previous reform. The central pressure for the reform and further reforms was the inadequacy of benefits.

The study tested whether pension reform necessarily leads to improved pension benefits. With a qualitative exploration complemented by a quantitative approach with the Republic of Ghana as a case study, the outcome revealed that pension system reform does not guarantee improved pension benefits.

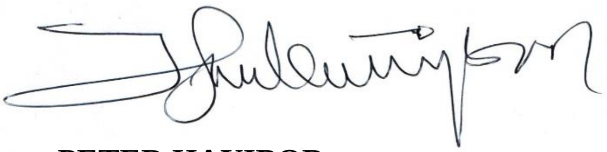
The conclusions and recommendations suggested planning and implementation approaches to pension reforms to avoid repetitive reforms or reform of reversal.

Statement of original Authorship

I, PETER HAYIBOR declare that this thesis is an independent work of my research.

I declare that this thesis has not been presented either in whole or in part for any award in any other institution. I have made full acknowledgement of all references cited and ideas from works of other people.

I accept full responsibility for any error that may be included in this report.



PETER HAYIBOR

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Chapter 1 Introduction

1.1 Background of the study

The economic security of people against events of life and changes in the stages of life continues to be an indispensable concern worldwide (Parkel, 2002)[1]. Pension or social security is widely acknowledged as a vehicle for sustainable development (Koutronas, 2017). The vast majority of developed and developing societies around the world have employed various levels of welfare mechanisms to avert, administer and surmount situations that inimically affect people's well-being (ILO, 1999; Pieters, 1998).

Efforts by man to provide for the present and future economic security needs have always been a dynamic phenomenon ranging from the early agricultural traditional system to the present advanced technological era (Dei, 1997). The core objectives of an income security scheme are to alleviate poverty and maintain income over the life cycle (Podger et al, 2014).

Among the contingencies that must be provided for is old age. In old age one cannot work to earn income to meet the basic necessities of life and that is when pension or retirement income becomes relevant. Other contingencies include healthcare, death, invalidity, unemployment, sickness, work injury, maternity and family assistance (ILO, 1952).

The pension amount paid to a retiree must be sufficient to meet the basic needs of life (Gyasi, 2008). From the very inception of the development of formal pension, it was not meant for the masses of people as a social benefit (George, 2014). It was a deferred benefit reserved for civil servants.

So the masses of people have to claim the establishment of pension systems for their benefit through agitation and collective bargaining (George, 2014). Moreover, the design of pension plan or scheme differ in terms of scope, coverage, benefit packages and its sustainability.

Further, economic pressures, changes in demography and other environmental factors including improvement in technology affect the performance of pension schemes. These factors among others continue to create the need for pension reforms globally in order to improve or make pension schemes better.

Thus, pension reform is an ongoing current or a topical issue globally. The study of pension reform necessarily entails the study and understanding of everything about pension from pension design, implementation and administration, pension regulation and supervision, investment of pension funds and administration of pension benefits.

Without such an understanding, one cannot identify challenges of the pension system and be able to prescribe solutions through pension reforms. Thus, the study of pension reforms is an opportunity to become an expert in the area.

1

In addition, pension and issues about pension reform are ongoing developments or topical issues of public policy in many countries around the world. These issues are major concerns for workers, governments, pension administrators, policy makers and international organisations such as the World Bank and the United Nations and its agencies like the International Labour Organisation (Holzmann, 1988; World Bank, 1994).

It is the same when it comes to regional and sub-regional organisations such as the European Union, African Union, OECD, and many more. The Revised European Social Charter for instance provides that state parties must progressively raise the system of social security to a higher level. In 1990 the Council of Europe further increased the right to social security protection by enacting the European Code of Social Security.

The foregoing is indeed the motivation to undertake this study. Pensions and pension reforms have become prominent and dynamic as well as a topical public policy subjects in many countries in the world. The expectations of workers and potential pension beneficiaries continue to change. There are calls for an increase in coverage to ensure all persons including all workers in the informal economy are included in the pension system (UN, 2015). All these can only be achieved through an understanding of pension and pension reforms.

One of the most important expectations of every worker during working life is to have income security through the life cycle. This is because it gives a sense of security that the worker would be able to satisfy basic needs and wants both at present and in the future (Allen et al, 1992).

Moody (2000) states that retirement is the withdrawal of individuals from work during the later period of life. It is associated with reliance on pension income instead of salary as the main source of income.

The determination of pension systems worldwide whether in developed or developing countries is aimed at helping the aged to attain the apportionment of income through a life cycle in their working lives (Modigliani & Muralidhar, 2004). Pension plans or strategies or policies are put in place to ensure that workers during working life put in contingency measures to insure themselves for future uncertainties in relation to retirement income.

It is believed that these measures are necessary to create a better retirement incentive (Modigliani & Muralidhar, 2004). Thus, pension provision is one of the most vital avenues used to provide retirement income security for workers (Mitchell & Fields, 1996).

In this regard, Maslow (1954) described pension as one of the components of safety needs in his ‘Five Hierarchy of Needs Theory.’ According to Maslow, after physical needs are met, the need and desire for a sense of safety become a worker’s concern and retirement benefits offer such a long-term security for workers and their families.

However, income security after retirement across the globe has not been satisfactory since its formal introduction in the 19^{th} century (Whitehouse et al, 2009). Its aim is to reduce the rate of poverty among retirees or older people or social insurance against contingencies of life.

On the contrary, Podger et al (2014) have argued that many pension systems were first established in first world countries in the late 19th or early 20th centuries. The different designs chosen were influenced by each country's prevailing culture and social priorities and its economic capacity at the time but they were real choices.

They further assert that once the pension system is first established it becomes very difficult to redesign. This is because expectations are locked in and major changes to the system become difficult and risky to manage due to the rights that have accrued to persons covered by the system. However, it must be emphasized that the spread of pension benefits to the masses of people around the world was a result of the struggles of workers through historical processes including collective bargaining and political movements (George, 2014).

The unsatisfactory trend of pension benefits has been attributed to several factors. Among them are difficulties beyond the control of pension administrators such as changes in demography, mismanagement and weaknesses in the design of pension systems and policies.

Quartey et al (2016) observed that the existing social security schemes in many African countries for instance are rife with numerous structural and policy setbacks due to lack of understanding of pension administration and absence of comprehensive pension schemes. Thus, these schemes ought to go through various transformations (Costa, 1998; Kpessa, 2011).

To improve income security for workers, pension systems have gone through transformation globally (Holzmann, 2012). The interests of workers have ignited several changes to existing pension systems aimed at enhancing retirement income security.

Pension reforms are often undertaken for several reasons. These include to making pension schemes sustainable, simple and to providing the needed income security during retirement (Dumman, 2008).

Thus, from the 1990s to the present, pension systems in various countries around the world continue to undergo various types of reforms. Some of these reforms have been championed by the international financial institutions such as the World Bank and IMF and in some cases supported by other continental development financial institutions to privately manage pension schemes (World Bank, 1994).

These reform policies ignited general enthusiasm and optimism for a market and financial intermediation in pension administration instead of public interventions. In other words , the World Bank interventions sought to make the individuals responsible for their own pension instead of total reliance on government.

This WB approval led many countries within the past two decades to embark on pension reforms. Chile started it with a systematic reform by the establishment of one main-funded pension pillar. This was followed by over 29 other countries (Holzmann, 2012).

The rapid economic, environmental, social and technological changes around the world have had major impacts on economic security arrangements for people (ISSA Academy – June

2017). Increased longevity has also created the need to ensure that adequate future income security is provided to meet the basic needs of sustenance to cover the fortunately long life (ISSA, 2002).

Further, there change in characteristics of the younger generation about retirement. They view retirement as more of a lifestyle transition rather than a complete cessation or stoppage of work (Parker, 2010). This trend is in contrast to the view that considers retirement as a period of rest from active work (MacBean, 2007) and that of Mitchell (1988) who argues that retirement is a freedom from exertion of work, stress, task and time constraints.

Again, old assumptions that underline what constitutes adequate income or economic security have proven over time not to be reliable (ISSA Report, 2000). This has been largely due to changing expectations and demands of life which include basic necessities of life such as food, shelter, clothing, healthcare , and other common expenses which are required to live a fortunately long life as a result of increasing longevity.

Moreover, the disparity of incomes of people coupled with increasing fiscal burden on governments may not bring about much change in the likely future destitution of many old people. Therefore, calls for building an inclusive society for all based on more equitable access to adequate income protection, resources and, economic development may not necessarily be achieved (Konkolewsky, 2014). Therefore pension system reform is necessary.

In addition, fast changing demographics and the rapidly changing nature of jobs and unemployment are huge challenges to the labour markets and social security or income security systems (ILO, 2014). These challenges directly affect the future financial sustainability of income security schemes that directly rely on contributions of workers or tax revenue of the state as the main source of finance for the income security systems (Lunga, 2019).

The global financial crises which affected major economies of the world led to job losses. It affected the capacities of many enterprises to continue to exist to produce or employ workers or retain them. The overall effect was the negative impact on the economic growth of these countries as well as adverse consequences for funded and unfunded pension systems (Holzmann, 2012). These developments had major impacts on income security systems and their capacity in the future.

Also, the effects of social, political and environmental crises such as drought, civil war and desertification in developing and poor countries are also major factors that affect income or economic security arrangements for victims of such events or disasters. In some cases, economic protection for such victims assumes migration policy dimensions where aliens have to be provided for in another country (AU, 2018).

The recent pandemic, Covid-19 that affected the larger part of the world from the later part of 2019 and continues, has also introduced a different dimension to the issue of redefining income security to cover such situations. The effects of this pandemic exposed weaknesses of various hitherto well-established economic and social systems.

Many suffered hardships in terms of health, death, loss of jobs and many more. A contingency of a major pandemic like Covid-19 had not been directly provided for in many income security systems. Its occurrence has thus become a wakeup call for action by governments, policy makers, international development institutions such as the World Bank and the IMF, the United Nations and other development partners to assist alleviate economic interruptions and the hardships (IMF Executive Board Release, 28 Oct. 2020; World Bank Executive Board, 3 March 2020 and 2 April 2020).

Under these arrangements, the World Bank Group for instance provided fast-tracked financial facilities to the tune of over $1.90 billion to over 25 countries. This support was to alleviate the health, economic and social shocks that affected these countries as a result of the Covid-19 pandemic (World Bank Executive Board, 3 March 2020).

Income security arrangements for people thus continue to be very dynamic and fluid as a result of rapid economic, social and environmental changes around the globe. Some of these changes leading to a total or partial loss of income and other hardships to individuals occur suddenly or unexpectedly.

The foregoing discussions clearly revealed that multiple factors and circumstances affect the existence and smooth operation of income security systems. Thus, the reform of income security systems to meet the challenges will continue.

Income security systems must therefore continue to be evaluated and made financially and operationally sustainable and resilient. They can then overcome economic, social and environmental shocks and continue to deliver services to meet the expectations of all stakeholders.

However, the extent to which these pension reforms address or focus on the sufficiency of pensions benefits remains a gap that must be studied. Therefore, the purpose of the thesis is to research how pension reform affects the sufficiency or adequacy of pension benefits. The findings and conclusions in this regard will then be my contribution to the literature and also create the opportunity for any further research in this area.

1.2 Research problem and hypothesis

The literature on income security scheme reforms is full of information about the need for reforms, review of reforms, and nature of reforms, proposal and recommendations for reforms and in some cases approaches to reforms of income security.

The March – June 2017 release of ISSA Academy, Turin, Italy observed that to be able to manage income security in a world of rapid economic, social and technological changes, social security institutions need to access new knowledge and innovative solutions.

In contrast, the US Social Security Administration in 2002 commissioned a survey on expectations of workers among others from the social security system. In the report which focused on pensions 50 years and above and titled ‘Beyond 50’, it was revealed that the younger generation of workers has a high and also a rapidly changing expectation from income security systems.

Given the overview in the background of the study, no one can have control over the ever-changing economic, social, environmental and, technological factors. So these factors will continue to necessitate reforms and reviews of pension or income security systems in the world.

However, there is a pertinent issue to investigate as part of a more coherent and comprehensive understanding of the ongoing pension reforms. It is necessary to examine the impact of the pension system reforms on the ever-increasing and changing expectations of workers from income security systems.

The necessity for sufficient or adequate pension benefits to meet the financial needs of the worker in retirement is a major concern for every worker (Schwarz, 2006; Aaron, 1999). Consequently, the impact of any pension reform on pension benefits is extremely important. Therefore, is the central research question to be addressed in this study is: 'the extent to which pension reform leads to improved pension benefits'.

In order to answer the above research question, two stages will be undertaken in the study. First, a comprehensive conceptual framework that assesses pension reform based on relevant theories and the literature will be developed and second, it will be tested.

The specific objective of the study is to investigate the impact of income security or pension reforms on income security benefits paid to workers as direct beneficiaries. This objective has been conceptualized into a hypothesis which will be tested in Chapter 4 of the study.

1.3 Justification for the research

The research is significant in a number of ways. This section discusses the significance of the study from theoretical and practical perspectives.

First, workers or persons covered by the various income protection systems are the direct beneficiaries of income security products and services. Second, the final product of income security schemes is the pension benefits they offer.

The increasing and changing expectations of income security beneficiaries cannot be overemphasized. Therefore, there will always be a link between pension reforms or reviews and pension benefits.

This linkage appears not to be the focus of many pension reforms. As will be noted later in Chapter 2, a number of countries went through pension reforms arising out of concern for inadequacy of benefits but the reforms were implemented yet further reforms have continued to be undertaken on the basis of the same concerns.

Furthermore, many theoretical dimensions had influenced pension reforms and the approaches that had been recommended as revealed in Chapter 2 of the study. However, reform of pensions appears to have become an ongoing phenomenon in the wake of high expectations from beneficiaries and changing economic, social, environmental and technological factors.

An investigation into how to ensure that there is always a direct linkage between these reforms and the ultimate output, namely pension benefits is important. This is because where the expectations of the beneficiaries of an income security system are met; they will exert less pressure that will call for further reforms or reviews.

Third, income security has become a universal human right of every human being (UNDHR, 1948; Konkolewsky, Feb 2014). It has also been described as an instrument for income stabilization over the life course and for poverty eradication during old age (George, 2014; Palacios & Slunchynsky, 2006; Ove, Moene & Wallerstein, 2003). In addition, various international instruments have acknowledged the importance and need for income security for all human beings (UN SDG, 2015).

It follows that pension benefits cannot be ignored or treated as trivial in any approach to undertake pension reforms. The study therefore seeks to bridge the existing gap in the literature about the need for a direct linkage between pension reform and pension benefit. It will then recommend the need for a clear direction in every approach to pension reform on how the reform will directly impact on the final output or the benefits paid out to scheme members.

1.4 Methodology

In order to conduct an effective research investigation into the effect of pension reforms on the adequacy or sufficiency of pension benefits and test the research framework, qualitative and quantitative approaches were used. These are described in detail in Chapter 3 of the study.

As descriptive research, field or primary data and desk information or secondary researches were undertaken. The secondary or desk research took the form of examining publicly available data from the databases of national, governmental as well as reliable private and international organisations.

The field study took the form of a case study of the pension reforms carried out in the Republic of Ghana. The reforms took place in 1965, 1972, 1975, and 1991 and in 2010. References were also made to reforms in some other parts of the world.

The exploratory nature of the research requires the use of the case study method. This offers an opportunity for an in-depth exploration and results in a rich understanding of the research issue (Rowley, 2002).

The qualitative research approach was used in the form of surveys in which 200 pensioners or retirees responded to written questions distributed through their pensioners' associations. Interviews were also conducted where questions were administered to pension administrators, policymakers and personnel of the pension regulatory authority in Ghana.

The interview questions were generated from the research question and were meant to aid the testing of the hypothesis. The respondents were drawn from across the various sectors of jobs. The desk research also made use of relevant newspaper articles revealing the disappointment and expectations of pensioners or retirees and the intentions of the government.

The cases and information extracted have been categorized and grouped together which enabled comparison, discussion and interpretation of the phenomena. The result has been presented in the study as a report and in some cases using tables and graphs to illustrate and explain.

1.5 Definition of Keywords

It is essential at the very onset of the thesis to explain the uniform and consistent use of the term ‘pension’.

Many dictionaries such as Oxford, Collins Longman, Merriam-Webster and https://www.dictionary.com define pension as a periodic payment of an amount of money usually to a person who has retired from work. This periodic payment is referred to in the thesis as “pension benefit”.

Pensions are payments made to workers who have reached the end of their active working life. Pensions are therefore terminal benefits that provide support to the worker after retirement (Cowdell, 2000). In other words, pension forms the most important part of a worker’s benefits package and provides lifelong economic security to the worker in retirement (Cowdell, 2000).

The Pension contribution is paid from salaries by way of compulsory deductions at source from formal employment of a worker in the formal sector or paid voluntarily by an informal sector worker during working life to a government-sponsored scheme or a private scheme. The aim is to gain some future financial backup during retirement (Cowdell, 2000).

Out of these contributions, an amount is paid to the worker during retirement on a regular basis such as monthly. This enables the worker to have a meaningful standard of living during retirement. This in effect averts old age poverty and serves as retirement income security.

The use of pension in this thesis is much broader than the dictionary definitions. In this thesis, a pension is a retirement plan for an employee paid into by the employer and employee or both with the employer usually covering the largest percentage of contribution. On retirement, the retired employee is paid an annuity or periodic amount calculated based on the terms of the pension plan. (www.bankrate.com).

Investopedia (www.investopedia.com, Oct, 2020) defined a pension as a retirement plan that requires an employer to make contributions to a pool of funds set aside for workers’ future benefit. The pool of funds is invested on the employee’s behalf and the earnings on the investments generate income to the worker upon retirement.

This definition also identifies the two main types of pension plans, the defined benefit plan where a worker receives a guaranteed amount on retirement. The benefit could be a flat rate where all those who meet the set conditions get paid the same benefit or earnings related where benefits are determined as a ratio of a set salary such as final salary, average lifetime salary or an intermediate figure on which contributions were paid (George, 2014).

The other is a defined contribution arrangement where the worker is paid a lump sum or one time money when the worker retires. Under this, the benefit is the accumulation of the worker's / workers' contributions plus returns on investment of the contributions.

Pension systems inherently incorporate contributory and noncontributory components. Benefits are provided to low-income earners or those with no or limited employment histories who have reached old age but have not met eligibility conditions and survivors left behind by dependants without any financial support. Pension plan designs vary considerably with respect to objectives, scope, coverage and benefits (Palacios & Pallares- Millares, 2000).

1.6 Delimitations of the scope of the study

The research combines the basis of theoretical considerations of instituting pension systems and their practical operations. There are vulnerabilities or factors that tend to unfavorably affect pension systems. The vulnerabilities are varied in degree and dimension depending on the demographic structure, level of economic development and the level and strength of especially financial market institutions.

Responses to address the challenges through deliberate policy and legislative interventions in some cases had led to many pension reforms around the world. Every pension reform has a purpose and these also vary as well as the approaches in implementing the reforms.

The focus of this thesis is to find out whether these reforms and for whatever purpose they are meant to address ultimately lead to improvement in pension benefits. For, pension benefits are the very reason pension systems exist.

Chapter 2 extensively reviewed the pertinent conceptual and theoretical literature of pension reforms. An attempt is made to identify the gap of not making improved pension benefits as one of the central aims of every pension reform.

The focus of the study is therefore to identify, analyze, evaluate and draw appropriate conclusions from the effect of pension reforms on the sufficiency or adequacy of pension benefits. These are based on a qualitative and quantitative investigation as to the effect of pension reform on the adequacy of pension benefits and determine whether or not adequacy or sufficiency of pension benefits always ought to be one of the central aims of pension reforms.

As a limitation, a study of this nature will require broader primary investigation into pension reforms in many countries around the world. However, resources and time constraints would not permit such a wider endeavour.

The approach adopted is therefore a case study of the pension reforms undertaken by the Republic of Ghana, a middle- income country in West Africa, South of the Sahara. The country has implemented reforms in 1965,1972,1975,1991 and 2010.

The reforms had occurred but have continued due to pressure from workers and beneficiaries about the adequacy of benefits. The literature or evaluation reports and researches about several other pension system reforms also abound as secondary sources. A careful desk study analysis and evaluation of these sources will also help in providing the appropriate answers to the research question.

Thus, despite the limitations identified, the findings of this study could still be reliable. It will also provide the requisite guide for future reforms and research.

1.7 Outline of the thesis

The presentation of this report follows a five -chapter doctoral thesis. The study commences by outlining a broad view of pension reform that leads to a focus of the research problem.

The overall outline as well as the organizational patterns of the thesis are discussed in this section. It comprises five chapters and each chapter is introduced hereunder.

Chapter 1 deals with the introduction to the study. It explores the concept of pensions and pension reforms, the importance of pensions, and the causes of pension reforms around the world as well as the motivation for the study as a general background of the study in a field study approach. Further, the research problem and hypothesis, justification for the research and the methodology used for the study are discussed. Definitions, delimitations of scope, and COMMAkey assumptions are also explored in this chapter.

Chapter 2 on literature review aims to locate the contribution of this study. It focuses on various dimensions of pension reform and approaches that consolidate the review of the theories and assumptions. General focuses on pension reform in different types of studies which are both broad and prolific in subject matter are contained in this chapter.

Reviews of some identified antecedents in pension reform have also been discussed. The main motivation is to point out the gap in the literature about improved pension benefits which must constitute the central aim of any transformation of a pension system.

Chapter 3 discusses the methodology used for the study. This covers all the relevant issues of the research approaches and the justification for the selected approaches. Qualitative and quantitative approaches were used in the study.

The population and sample size, response rate, and selection of key informants were discussed. Research instruments, survey data, unit of analysis, analytical tools of quantitative data, qualitative data collection, protocol, and analytical approach of qualitative data are also covered.

Chapter 4 deals with results and discussions. The chapter presents the data collected from various sources. A detailed analysis of the data with appropriate figures, tables, and graphs as well as the discussion of results of the hypothesis testing are contained in the chapter.

Chapter 5 deals with, conclusions, implications and recommendations of the study. The chapter reviews the main arguments of each chapter and discusses the contribution of the study to the relevant literature.

It combines the overall findings which follow the research and the implication for researchers, policy-makers and practitioners of pension systems. A number of research directions are suggested. The limitations of the study are also addressed.

1.8 Conclusion

By way of a concluding remark, this chapter of the study provided an overview of the thesis. The background information identified the research gap in the literature.

The research problem, research question and hypothesis, and objectives and justification of the study clearly indicate the importance of this research. This chapter also presents an outline of the study.

This comprises the research framework, methodology used and areas of contribution to the theory and the body of knowledge in pension reforms. As indicated earlier, there are five chapters and each chapter has an introduction and a conclusion section.

Within the body of the thesis, bold characters are used for chapter headings, headings, subheadings and sections. Given the framework of the thesis, the next chapter contains a comprehensive discussion of the relevant theories from a detailed review of the literature on

Chapter 2 Literature Review

2.1. Introduction

This review of the existing literature explores pension reforms in three major segments. The first significant segment deals with the meaning, importance, historical development, and the basic legal framework of the development of pensions or social security.

The second main segment discusses the theoretical foundation and assumptions underpinning pension reforms. The third segment reviews pension reforms, the rationale, the triggers of reform, and the approaches.

The relevant theories and arguments have been reviewed and synthesized to bring out the gap in the literature that this study seeks to establish. That is whether pension reforms necessarily lead to improved pension benefits.

Furthermore, the established and closed gaps and the conclusions and recommendations from the review will constitute the contributions to the literature on pension reforms.

2.2. Meaning, historical development and legal or rights framework

Social security or income security, or pensions, are the protections that society provides for its members. Social security comes into being through a series of public measures against the economic and social distress that otherwise will be caused by the stoppage or substantial reduction of earnings (ILO, 1999).

The cause of the reduction in earnings may be due to various contingencies. It may include sickness, maternity, employment injury, unemployment, invalidity, old age, and death. Also included are healthcare and subsidies for families and children (ILO, 1952).

The industrial revolution resulted in a rapid transformation from an agrarian society to urban industrialized life. Income-earning workers characterize it. The change also brought along much economic insecurity by way of hardship arising from lack of or stoppage of or reduction in the wages earned due to old age, sickness, disability, or death (Holzmann & Hinz, 2005; Caucutt et al., 2007).

The idea of instituting a means to deal with such economic insecurity emerged among workers in various parts of the world where factories or industrial work sprung up (Gordon, 1988, Munnel, 1993). At the inception, pensions were not a social benefit for the masses.

It started as a deferred payment for preferred workers such as civil servants. For instance, as far back as the 1670s, the British Royal Navy Officers had a pension scheme. (George, 2014). It resulted from workers' struggles through historical processes, including collective bargaining and political movements that gradually spread pension benefits to the masses (George, 2014).

In 1883 – 84, Otto von Bismark, the then German Chancellor, instituted a social security system that had since then become a model for social insurance. Under the system, workers and employers paid contributions to finance sickness (Palacios & Sluchynsky, 2006).

The system also paid for workers' compensation. Later, a complementary old-age insurance program financed partly through state revenue (taxes) came into being. (Gordon, 1988).

The need and justification for pension systems continue to arise. A growing recognition also arose that the political upheavals and emergence of authoritarian regimes in Europe were responsible for the social and economic chaos.

Indeed this results from the great depression of the 1930s. There was a lack of economic and social policies to address the chaos. Eventually, there was a need for a more cooperative approach to economic, social, and humanitarian affairs on the world's stage.

The premise for such policies was on social justice or social equity, the securing of social and political stability (Alfredson, 1999). Despite the introduction of social insurance in Germany under a background of a social welfare state, the concept of social security as a form of the pension system is relatively recent.

The concept dates back to the introduction of the US social security legislation in 1935. It initiated an income security system to cater for contingencies of old age, death, disability, and unemployment.

New Zealand also passed legislation in 1938 in which it consolidated all income security benefits and described them as social security benefits. Social security also appeared in a wartime document known as the Atlantic Charter in 1941.

There is also a record that as far back as 1819, in a speech to mark the independence of Venezuela, the leader Simon Bolivawas used the term social security in the following sentence in his speech. "The perfect system of government is that which produces the greatest amount of happiness, the greatest amount of social security, and the greatest amount of political stability."

In a union of the state address to the US Congress on 6 January 1941, US President Franklin D. Roosevelt introduced four freedoms. He presented a vision of worldwide social security based on human rights and freedoms.

The human rights-based social security vision received endorsement by US President Roosevelt and the then Prime Minister of the UK, Winston Churchill, in the Atlantic Declaration in 1941 (Ruth Russell, 1958). Subsequently, in 1944, the ILO adopted an income security recommendation in Philadelphia.

The charter of the United Nations, adopted in May 1945 among its three primary purposes, set the achievement of solving problems of an economic, social, cultural, and humanitarian character. The attainment of these must be without distinction regarding race, sex, language, or religion. (UN Charter Article 1 (3), 1945).

These rights, including social security, were spelled out in 1948 in the Universal Declaration of Human Rights (UDHR). The fundamental starting point of the Declaration is that human rights are rights inherent to all human beings, regardless of race, sex, nationality, ethnicity, language, religion, or any other status. Therefore, everyone is born free and equal in dignity and rights.

The background of equal human rights informed Article 22 in the UDHR on the right to social security. The global campaign for social security continued, and the ILO continued to adopt various recommendations on social security as a significant widespread aspiration of people worldwide.

Consequently, in 1952, the ILO adopted the Convention on Minimum Standards of Social Security (Convention No. 102). This convention became the binding legal document that all UN member countries could ratify. The convention set out the obligations of states to ensure the establishment of an all-inclusive pension system for all citizens. The governance, types of benefits, rights of beneficiaries, among many others, are specified in the convention as a guide for all countries.

In addition, the ILO adopted other instruments, including recommendation No. 202 of 2012 (ILO Social Protection Floor Recommendation). This recommendation prescribed the establishment of basic social security guarantees envisaged in international, regional, or national standards should be by law. Such national laws and regulations should specify the range, qualifying conditions, and levels of the benefits giving effect to these guarantees.

Again, the right to social security appeared in Article 9 of the UN International Covenant on Economic, Social, and Cultural Rights (ICESCR), adopted in 1966. This covenant has progressively developed the right to social security as a universal right on the same footing as economic, political, and cultural rights.

Various regional, sub-regional, and international bodies continue to recognize the social security or pension rights of all human beings as a universal right. As such, its enforcement must be everywhere in the world.

As recent as 2015, the UN adopted United Nations Sustainable Development Goals as a global developmental agenda to be achieved by all member countries by 2030. Significantly, one of the goals in the 2015 plan is all-inclusive social security or social security for all by 2030.

The combined effects of this sequential development of social security have become a universal right-based concept and practice. A human rights-based approach to social security identifies rights holders and their entitlements. It distinguishes the corresponding duty-bearers and their obligations and works towards strengthening the capacities of rights holders to make their claims. Duty bearers must meet their obligations (Social protection – humanright.org).

For social security as a universal right to have a meaningful impact, it must provide comprehensive coverage. The coverage must be against all contingencies and life circumstances that threaten the income-earning ability of persons and their ability to maintain an adequate standard of living (Reynaud, 2006).

The benefits covered must also be adequate or good enough to cover the necessities of life. It must avoid destitution and old-age poverty. (Ove Moene & Wallerstein, 2003). By ILO recommendation 202 on national social protection floors, a legal framework on social security must safeguard the predictability and adequacy of benefits.

In other words, the benefits must not fall below a clearly defined minimum. For instance, the benefit must not fall below the subsistence level or poverty line, especially a social assistance scheme. The kind of benefit provided must also be appropriate to the kind of risk or contingency.

Compressive social security or pension system must be accessible physically in terms of its coverage for all persons. It must also be economically accessible, and if it is a contributory system, the contribution level must be affordable. The indirect and direct costs and charges must also be affordable.

The robustness or resilience of the system to absorb socio-economic and environmental shocks and bounce back is critical. Equally important is the financial sustainability of the system to ADD. The design and the financing arrangements must ensure that the system exists, in the long run, to continue to offer the promised benefits. (Klumpe & Tippet, 2004).

The financial sustainability dimension requires prudent management of the fund assets of the pension system, including sound investments. Good governance practices, including transparency and accountability in financial matters, is a core guiding principle of the administration of the system.

2.3. Pension regimes

Pensions have two main categories or systems. There is formal social security which is more Eurocentric, and informal social security.

Pension regimes are of different categories. However, four different pension regimes exist. (Andersen, 1990). They include the liberal market bias, the etatist bias, corporatism bias, and social security bias.

The liberal market bias includes private pensions. They could be either an individual pension contract or a collectively negotiated occupational plan.

The etatist bias type is a conservative model of a welfare state. Under this system, civil and public servants work for the state and have special privileges, including pension (George, 2014).

The corporatism type takes the form of social insurance. It involves financial contributions and labor market dynamics. Actuarial science considerations are also a significant part of it.

The fourth type, which is social security bias, is based on an employee's period of employment and a percentage of income or the flat amount paid in as a contribution. The benefits may be a lump sum or a periodic payment based on an agreed formula.

Informal social security is the counterpart of formal social protection mechanisms (Oliver & Dekker, 2003). There are two informal social security systems, namely traditional support systems and self-organized systems.

In self-organized systems, membership depends on a social group or community line. It is, however, not limited to family or kinship. It could be age group, neighborhood, profession, or ethnic group.

Informal social security rests on any one or combination of four security pillars. (Gsanger, 1999). These include;(i) individual provisions based on economic activities such as self-employed farmers or traders, (ii) membership in traditional solidarity networks, (iii) membership in a cooperative society (such as self-help groups), rotating savings and credit schemes, cultural associations and (iv) non-governmental public benefits systems by voluntary organizations such as churches, trade unions among others.

Thus, informal social security systems can take two primary identifiable forms. These are private household-based systems (or kinship-based) and member organization-based systems (or non-kinship-based systems). The distinction and analysis of formal social security systems and informal systems are necessary for this study to clarify and to focus on. The study applies to pension reforms of formal social security or pension systems.

The universality of pensions as a human right indicates that reformation of informal social security systems through legislative and other interventions is possible. However, there must be a scrutiny of the central purpose of any such reform.

There is an ongoing debate on formalizing the informal economy. One view is the state normalizing the enterprises in the informal sector to take advantage, like extending the tax net to cover them. It is the capitalist view.

The other view described as the labor view is formalizing the informal economy by including workers in the informal economy to benefit from the pension systems. The labor view recognizes the social security fundamental human right of the informal sector workers and the need to provide for them (Unni, 2018).

2.4. Regulation and supervision of pensions

There is no perfect social security or pension system (Turner, 1998). There are several risk factors involved in pension administration. Some have suggested that an enterprise risk management approach is ideal for risk management of pension systems (Kemp & Pate, 2011).

Pension systems exist mainly to provide the needed benefits hence ought to remain focused on their operational activities. With the need for protection for pension systems to ensure they remain on track, many countries introduce structures for regulating and supervising their activities.

There are various options for designing regulatory structures for pension supervision. All pension systems require good governance and good management to function well. All pension systems must also cope with macroeconomic uncertainties (Turner, 1998).

Countries have therefore adopted different models according to the stage of development of the private pension sector and other institutional arrangements for the provision of pension services. The historical, cultural, and environmental circumstances have also informed the option (Queisser, 1997).

There is fragmentation in pension regulation and supervision in some countries. There is more than one agency responsible for pensions. It is the case in some OECD countries. In some countries also, there is a body like a commission responsible for the state social security or public pension and another for a private pension.

In contrast, Latin American countries have introduced a solely dedicated agency to regulate the pension industry. This approach requires the extra cost to the state because very competent and well-paid personnel are must be attracted and retained to meet the regulatory expectations of the pension industry.

The arguments are that small supervisory bodies might be subject to regulatory capture if their complete independence and power to regulate and mandate without government guaranteed. (Glaessner and Valdes – Prieto, 1995). Government support in such situations is therefore critical.

Alternatively, upgrading and using existing financial regulatory infrastructure has been encouraged. In Germany, private pension regulation depends on the type of scheme. Canada and Switzerland have decentralized pension supervision with only a body coordinating or overseeing the decentralized system.

On the other hand, countries that implement pension reform with a significant role to the private sector in providing the pension services claim that it requires efficient and reliable supervision from the other areas of the financial sector such as securities and exchange. It is the reason for adopting the integration of pension provision into the banking or financial sector in countries such as Colombia and Bolivia.

Rules cover the regulatory regime and the extent of the regulations, depending on the types of pension schemes in a country. Regulations are much easier for defined contribution schemes than that for defined benefit. However, both require supervision.

A defined contribution scheme requires total funding. The benefit at the end of the day depends on decisions made today by the fund managers and the performance of the market. Defined benefit schemes, however, have a more comprehensive range of issues; hence regulation is critical.

In a defined benefit plan, the promise is to provide a certain level of benefits on retirement. The regulator must ensure that the plan's funding meets current and future benefit obligations.

Regulation typically covers a broader range of issues. It includes licensing or authorization to operate, setting the rules and standards for operations, minimum capital requirements, onsite inspection, reporting, directives, guidelines, and application of sanctions for non-compliance.

Whatever model or type of regulatory regime is adopted, one major thing needs emphasis. Pension supervisors or regulators can only perform their tasks effectively and efficiently with a strong government commitment to facilitate independent and impartial supervision (Queisser, 1997).

2.5. Theoretical foundation and assumptions of pension reforms

There are three main strands of thought about pension reforms. The Global Social Policy School, the New Political Economy School, and the Welfare Regimes Approach.

2.5.1. The global social policy school

The global social policy school developed in the late 1990s posits that there are external factors such as international organizations that are involved in national policymaking. These external factors shape national and social policy and are best analyzed based on globalization (Yeates & Holden, 2009). This view puts much emphasis on pension reforms.

The claim based on this approach is that welfare matured states' economies have been undergoing transformation processes. That globalization is responsible for the transformation (Ellison, 2006). Based on this reasoning, this school of thought suggests a global social policy approach to pension reform. This approach considers the involvement of external or supernatural factors in national social policy.

Adherents of this view argued that there had been a proliferation of small countries after the collapse of the cold war. It increased the importance of supranational, regional, and global economic and political processes. As a result, social policy analysis focused solely on national and comparative social policy to global social policy (Deacon et al., 2009 p.9 – 10).

Since its development in the 1990s, the global social policy idea has grown in scope and strength. The diversification is according to the nature of the supra-natural factors influencing national policy-making at a given time.

Further, the claim is that international institutions interfere in national policy-making through direct and indirect means and consequently shift social policy trends. Moreover, global economic pressures relating to international trade and capital mobility put much pressure on national economies.

For these reasons, globalization underlies national social policy. On the other hand, decisive macroeconomic factors such as unemployment, low economic growth rates, an aging population may not necessarily relate to globalization.

Contrary to the social globalization theory, the contention is that the impact of globalization on welfare states' services, including pensions, could be less than what is advocated by the globalization theory. Thus, the influence of the supra-national factors in social policies at the national level operates between these two extreme positions (Ellison, 2006).

Consequently, it is within the global social policy view that the economic policy prescriptions advanced by the Washington DC-based institutions, the World Bank (WB), the IMF, and others have paramount importance (Orenstein, 2009). These policies advocate free trade, market liberalization and deregulation, privatization, and reduced social intervention provisions.

This ideology emphasizes the primary and the superiority of organizing and coordinating systems of productive activities on the free market principles. They also advocate minimization of the state's involvement in market-based productive activity in general and the functioning of the labor market in particular.

They support personal investment and entrepreneurship and the cultural values of individual ownership. This school believes that the individual is a crucial source of enterprise and acts rationally and self-interested. The individuals hold primary responsibility for their conduct and economic survival and well-being.

To this end, the state or government should only commit to providing minimal intervention in the welfare of people whose individual conducts and abilities limit their capacities for rational, self-interest, and responsible economic and social behavior (Ferguson & Yeates, 2013). Several researchers examined the World Banks' roles and approaches in pension reform (Beland & Orenstein, 2013; Orenstein, 2005, 2008, 2009, 2011).

The investigation by Orenstein revealed that the spread of the pension reform trend between 1981 and 2004 in many countries is a result of the campaign run by transnational institutions like the World Bank. It was part of the broader economic liberalization agenda for global social policy (Orenstein, 2005).

The USAID, IMF, and regional development banks such as ADB assisted the World Bank during the pension reform campaign. These institutions also funded the process of pension reforms through loans. In some cases, pension reform was a condition for a further loan(Orenstein, 2008).

In this regard, the transnational actors are institutions and include individual policy advisors (Muller, 2003). Some of these individuals and expert networks became leading sources of policy norms and ideas in countries worldwide and can influence pension reforms.

A striking observation, however, is that countries have had different underlying causes for pension reform. The causes ranged from War as was in Croatia, economic crises as was in Bulgaria, to high external debt as in Hungary.

The different causes led the governments of these countries to search for loans. To achieve these objectives, the governments of these countries had to indicate their commitment to a market economy and endeavor to gain access to the international capital markets (Muller, 2003).

As a consequence, many middle-income developing countries accepted pension reforms on the ground of entirely different economic and political factors such as a need for capital (loans). However, accepting pension reform on the model stipulated by the global social policy theory signaled a commitment by the country involved to a free market system (Brooks, 2005).

Thus, it is clear that countries that accepted and implemented pension reforms based on privatization did so based on different needs or processes. It also brings the role the transnational institutions and other actors have played in pension reforms.

In essence, a significant missing gap is that the central objective of the reform is not ensuring or guaranteeing adequacy or improved pension benefits. The goal is to achieve a free-market system based on the self-interest of entrepreneurs to the neglect and disadvantage of improved pension benefits which is a social provision.

Furthermore, the scope of the pension reform based on this model varied across the different countries which accepted and implemented it. A review of the pension reforms revealed that private-funded schemes were much less in the post-socialist countries than in Latin America (Muller, 2003 p. 68).

In the post-socialist countries, the private pensions remained as complementary schemes to the original public pension schemes. But Latin American countries such as Chile replaced the entire pension system with privately funded schemes. Thus, it will be far-fetched to describe all these reforms as complete pension privatization.

Again, the structures of the reformed pension system also differ significantly even within the same region or sub-region. The review indicated that even in Latin America, three different structural pension reform types emerged.

A Chilean model made private accounts mandatory for all new workers. Bolivia and Mexico also adopted this model. Peru and Colombia also adopted a model where new workers choose between a reduced first pillar pay-as-you-go pension and a private account. While Argentina, Costa Rica, and Uruguay also adopted a model under which new workers have a pay-as-you-go combined with a private account as the second pillar (Gill et al., 2008 p.64).

In the case of Chile, it is vital to note that further reforms to the pension system have occurred. In 2008, for instance, Chile introduced a solidarity pillar to supplement pensions of individuals with low self-financed pensions. The aim was to address poverty among retirees by increasing the pension replacement rate and the total expected pension at retirement. (IMF, 2021).

Chile had again, in 2021, introduced further reforms to address relatively low replacement rates in the pension system. It established that the replacement rate in the Chilean pension system was lower than the average in the Latin American countries and even when compared with the benchmark of similar countries with defined contribution pension systems (Altamirano et al., 2018).

The OECD's pension model also projects that a Chilean retiring around 2060 would have a replacement rate of about 30%. It is about 20% points below the OEDC average. The causes of the relatively low average replacement rate result from contribution rates and retirement age that were initially set to produce higher replacement rates but unfortunately have not been able to achieve the objectives.

The failure to achieve a higher replacement rate is due to higher life expectancy, declining interest rates, and low contribution density. The combined effect of these factors will result in a further decline in the replacement rates for future retirees (IMF, 2021).

Therefore, the 2021 reform aimed at increasing contribution rate and contribution density to positively impact future expected replacement rates. As an encouragement for workers to transition from the Pay-as-you-Go system to the private pension system, the initial contribution rates were set very low, but the rates have remained unchanged.

The turnover rate of workers and self-employment has also resulted in low contribution densities, especially among women. In other words, the inability to contribute regularly is high.

Increasing life expectancy also indicates longer life horizons which means future retirees will have to spread their savings over a more extended period. Future expected low returns due to a decline in interest rates and global macroeconomic challenges will also lead to a lower accumulation of assets for future retirees.

To solve the low replacement rate in the pension system, Chile has decided to introduce further reforms to the existing pension system. The policies introduced in the 2021 reform are a clear departure from initial pension privatization. It confirms that there cannot be a one-size-fits-all pension reform approach.

The new reform proposals include plans to extend government subsided pension top-up to cover the middle class and increase government spending on a pension from 60% to 80%. It will also aim at increasing coverage for women.

The reform will improve the pension of current and future retirees and especially women, the middle class, and the most vulnerable sectors. It will also reduce the pension gap between men and women.

In addition, the solidarity pension introduced in 2008 will remain above the poverty line. There will be a guaranteed minimum pension equal to or above minimum wage for contributors to the pension system who have made contributions covering 30 years and above, including contributions to a pension solidarity fund.

Others are the introduction of competition transparency and tight regulation of private pension funds (Reuters News Thursday, March 4, 2021, at Reuters.com). According to the reform proposals, pension contributions will increase from 10% to 16%. Out of this, 3% goes into the existing individual retirement savings accounts, and the other 3% is paid into a new collective solidarity pool to finance minimum pensions for low-wage workers. The existing solidarity pillar introduced in 2007 will increase from 60% to 80% by adding more people who do not have recourse to current public support. These persons have never contributed to any scheme, and those who belong to schemes have not contributed enough to earn a pension. (Latam Daily March 5, 2021, available at Scotiabank.com/economics).

These developments in Chile, the forerunner in pension privatization, confirm that pension privatization is not a complete solution to pension reform. It is instead a mix of public and private measures that can improve the pension system.

The free market system (neoliberalism) is the central ideology of international institutions in social policy as advocated by the international social policy school. This approach defines new pension systems established based on World Bank advice as private pensions.

However, by narrowing the conceptualization of the ideology to pension privatization, the implications on the adequacy or improved pension benefits are entirely left out. This gap is significant because the very existence of any pension system is to ensure the delivery of adequate pension benefits.

2.5.2. New political economy school

The second school of thought underlying pension reforms is the new political economy school. This ideology focuses on the post-industrial changes that have put much financial stress or pressure on welfare states. These pressures have resulted in a shift in social provision (Pierson, 2001).

This view further explains the pension reform trend in social provision by welfare states. It argues that the reform trend arises from the inconsistency between the political economy in existence and the social provisions designed in the past and the modern or current policy environment (Myles & Pierson, 2001).

Thus, the main reason behind the spread of pension reform is the existing public pay-as-you-go pension schemes organized based on three major factors. These are high growth rates in wages, high fertility rate, and high labor force participation.

With the reduction in the rate of wage increase, reduction in fertility rate with an attendant decrease in the total labor force, it has become necessary to replace the pay-as-you-go pension schemes with funded pension schemes. For schemes financed by payroll tax deductions, the rate of return is the annual percentage growth in total real wages (Return to labor).

Total wages are the product of average wage multiplied by wage earners. The number of wage earners also depends on the population growth and the rate of labor force participation.

Thus, the financial soundness of the pension financed from payroll deduction depends on high wage growth, high fertility, and high rates of labor participation. It postulates that the trend of pension reform is simply a matter of adapting pension regimes designed for an old political economy to one compatible with the current or new policy environment (Myles & Pierson, 2001).

The observation from this school of thought throws a significant light on the reform issue. It indicates that the analysis of pension reform trends must be in a bigger picture which includes the structural transformation of economies put forward by the global social policy ideology.

Under the new political economy approach, social provision practices have changed from public social schemes to more individualistic and private social provisions across the world. This trend of policy reform started in the UK and the US and spread to other states (Walker & Foster, 2006).

This school was also hostile towards taxation in general and, more particularly, taxes to fund welfare state expenses. The phenomenon described as 'welfare backlash' had its earliest and perhaps the strongest manifestations from the US. In Europe, the political reaction varied (Pelizzon & Casparis, 1998 p. 135).

However, the interpretation of these developments varied considerably. Some have described it as the transformation of the welfare state, but others refer to it as welfare retrenchment. Another observation is that this change was associated with post-industrialization and resulted from competition among countries brought about by globalization.

In other words, as all countries try to reduce the cost of labor by decreasing social spending, the effect would be lower living standards. It would also lead to a lower qualified workforce.

There is, however, sharp criticism against the preceding view of the effect on social spending due to a reduction in the cost of labor. Others describe it as a myth rather than a reality. This view acknowledges that OECD average levels of social expenditure as a percentage of GDP as generosity ratio or, in real terms, remained constant between 1980 and 1998 in many countries (Castle, 2006 p.242).

Social expenditure comprised cash benefits, direct in-kind provisions in goods and services, and tax breaks for social purposes. Such benefits may target low-income earners, the elderly, the sick, the disabled, young persons, and the unemployed. Social benefits may come from state or private sources. The generosity ratio measures the total social benefit or expenditure expressed as a percentage of GDP (OECD, 2021).

The contention is that economic liberalization, which expanded rapidly in the 1980s, compelled governments to cut social spending for competition purposes. Therefore, developing and industrialized countries must undertake welfare reforms that focus on a single free-market social policy model (Brooks, 2005).

On the other hand, others suggested that welfare states create expectations and dependency among citizens. Thus, it prevents governments from reforming welfare systems without considering the political electoral consequences (Achterberg & Yerkes, 2009). However, a review of the examples of pension reforms does not reveal that electoral concerns have played a central role in discussions about pension reforms.

Instead, the pension reform discussions and negotiations on many occasions took place between international institutions and policymakers rather than political parties (Muller, 2003). Thus, the analysis shows that the single focus on the free market social policy model is an essential aspect of the pension reform in terms of increasing similarity in social provision practices of different countries.

The global competition reason assigned to reduce social provisions, including pensions, seems inadequate. Further, it is not enough to look at only empirical data on government spending on social provision. The quantitative data on public expenditure might not explain actual trends in welfare standards (Castles, 2006).

Before the global financial crisis, governments of countries of the OECD spent 30 – 40% of their GDP on welfare programs. This level of expenditure has remained stable over the past 30 years or so. This trend completely fails to justify changes within the welfare systems over the period (Farnsworth & Irving, 2011).

On the contrary, the 2020 update on average social expenditure in OECD countries as a percentage of GDP was about 20% (OECD, 2020). The causes of this trend of decline in social expenditure are various policy interventions to ensure the sustainability of the social provision systems, including pensions.

Indeed mature welfare systems spend far more on pensions and healthcare than they have in the past. They have also become more restrictive, put in more efforts to turn economic value into commodities, and have become more market-oriented (Farnsworth & Irving, 2011 p.4).

In sum, the new political economy school postulates that pension reforms and other market-oriented or free-market system policies result from the broader transformation of the postindustrial era. Thus, productivity, employment levels, and political thinking towards welfare services are entirely different than what they were at the time pension systems were established in the post-war era.

2.5.3. Welfare regime approach

Perhaps the most influential comparative analysis of the theories on social policy is the welfare regime view. This school of thought depends on the classification of welfare systems. Titmus was the first to draw this distinction or classification (Blakemore & Griggs, 2007).

The distinction is between residual, industrial, and institutional welfare models of social policy. It draws a difference between countries according to the way the state, market, and family provide social goods and services connect. The initial classification was further developed based on empirical analysis of welfare systems by Esping – Andersen's welfare regimes approach (Esping – Andersen, 1990a, 1990b).

This later work identifies three welfare regimes, namely, liberal, conservative, and social-democratic. The welfare states vary considerably concerning their principles of rights and stratification. The result is the different qualitative arrangements among the state, the market, and the family. The welfare state variation we find is therefore not linearly distributed but clustered by regime types (Esping – Andersen, 1990a p.111).

The characteristics of the liberal welfare regime include means-tested social assistance, small universal transfers, and low-income replacement rates within the state social insurance system. Again dependency on the market is high in the regime.

Further, in the liberal welfare system, the effect of institutional arrangements to enable one to survive without selling his labor is minimal. Instances of this welfare state model exist in the US, Canada, and Australia.

The second type of welfare regime is the conservative. It is a state-dominated and controlled model based on officially designated groups and group interest structure of welfare provision practices. For these reasons, it is formed-around traditional conservative institutions such as the church. It operates in countries such as France, Germany, and Italy.

Under the third type described as the social-democratic welfare regime, respect for the individual's freedom from the market and the traditional family system exists. The result leads to the development of the independence of the individual's capacity. This model is in Scandinavian countries like Norway, Sweden, Denmark, and Finland (Esping -Andersen 1990 b).

The welfare regime classification view has had much influence on the discussion of social policy. Other researchers made a lot of efforts to develop, test, adjust, expand and criticize the welfare regime classification approach (Van Kersbergen, 2013 p. 13a)

Following Esping – Andersen's initial classification of welfare regimes, others also came up with several other classifications broadly put into three categories. The first category is the view claiming that classification into the earlier three regimes of welfare states was not enough.

The second is an attempt to reposition welfare countries into different categories. The third is the development of alternative classification systems based on the original three postulated by Esping-Andersen (Ellison, 2006). The 'Families of Nations' approach (Castle, 1993) is one classification that emerged. This approach examines similarities of different countries' public policies based on their shared cultural, historical, and geographical features.

Another view is the "varieties of capitalism" approach (Hall & Soskice, 2001). This view attempts to classify different welfare practices based on how welfare states develop due to the underlying logic of industrialization. The critical determinant according to this view in social policy is the changing forces of production rather than political power structures.

From this position, every social provision practice has its purpose and necessity within the economic structure. In addition, the differences across economies in social provision create certain types of classes (Hall & Soskice, 2001).

For example, a social-democratic welfare state coordinates its market economy. This coordination creates demand for active policies such as childcare and education services which in turn supports the specialization and knowledge base structure of the economy. (Jensen, 2011 p.127).

Based on the varieties of capitalism approaches, is argued that the production regime view is systematically linked with the study of welfare state regimes. The production regimes are the relevant institutions in the state.

These institutions are private and public enterprises (industrial and financial), associations of capital interests (business associations and employers), organizations, labor and labor market institutions, and governments agencies involved in economic policymaking. These institutions also have patterns of interactions among them.

Thus, all the relevant policies, including labor market policy, microeconomic policy, trade, industrial policy, and financial regulations, are made by the interaction of these relevant institutions (Huber & Stephens, 2001 p. 108). In effect, this is how social policies also come into being.

Summing up on the comparative welfare regime analyses, this view asserts that different welfare regimes could be treated broadly, ideally, and as typical systems. Their classification is into institutional groups based on their characteristics.

The classification can then help study how countries behave within the different clusters under similar situations caused by global economic and institutional forces. However, the comparative analyses based on the ideal types of welfare regimes have not helped understand changes in social policy. This approach focuses on the welfare state as a totality of different social provisions.

Thus, pension provision is considered of just one of the many different social provisions and therefore has not attracted much attention. Further, the analysis of pension reforms from this point of view results in the factors underpinning pension reforms such as the free-market system or privatization or global factors influencing social policy overlooked.

Instead, the focus shifts to how pension reforms fit into the classification of welfare regimes. It suggested that in the context of pension reform, every welfare regime produces its way of dealing with the aging problem, for example (Ayson & Beaujot, 2009).

Thus, there is no single path for pension reforms. However, the welfare regime view does not discuss the necessity of pension reforms. Well-known views of the aging problem of pension become taken for granted by this school of thought without further analysis as to the validity or otherwise of these arguments for different countries.

By this approach, the welfare regime strand of thought merely forms an idea about the central policies of pension reforms. These main policies include privatization, decreased pension spending, and tightening eligibility criteria for retirement.

The approach merely considers these main factors, namely, treating anything of value like a commodity, cost containment, and recalibration as reform policies (Pierson, 2001). The idea of treating everything of value as a commodity makes individuals more vulnerable to the free-market system. Cost containment is the totality of the policy responses to government budgetary concerns.

Recalibration, on the other hand, refers to reforms implemented to achieve specific welfare targets as well as adaptation to the changing economic and social structure. Cost containment has been central to the retirement or reform policies of social democratic countries and continental Europe.

Liberal welfare states have focused on increasing the role of the individual in the market, and southern European welfare states focus on changing regulations of existing pensions systems (Aysan & Beaujot, 2009). The Southern European states focus on recalibration because of the low level of development of their welfare regimes that require adjustments to meet welfare targets.

The need to sustain pension systems by decreasing pension spending and tightening eligibility criteria to cope with the aging problem is the argument advanced by the welfare regime strand of thought for pension reforms. However, these arguments cannot explain why pension reforms started around the same time in many countries.

Even though the welfare regime approach seemed to be a dominant view within social policy discussions, it is inadequate. Rather than focusing on similarities in a country's social policies, an approach of defining varying structural features of each country and agencies, processes, institutions, and how they are related, which make them peculiar, would have been better (Fine, 2014).

Thus, the adequacy of pension benefits could not have been the focus of the welfare regime approach, which this study seeks to explore within the existing literature on pension reforms. This further gap bolsters the relevance of the study.

2.6. The concept of pension reforms

The third segment of this chapter of the thesis discusses the concept of pension reforms. Pension reform types, triggers of pension reform, implementation of various reforms, and general challenges of reform implementation come under the segment. In general terms, pension reforms are changes made to the existing pension system to improve or improve it (Schwarz, 2006).

No pension system is perfect. Many pension systems face various challenges. All pension systems require good governance and good management to function well. All systems must cope with macroeconomic uncertainties such as inflation, unemployment, wage growth rate, changes in demographics, and changes in interest rates, among others (Turner 1997).

Further, there is much variation between countries regarding the levels of pension systems, scope, coverage, and effectiveness of the systems in place. Developed countries have the most advanced pension systems and fund management systems.

With few exceptions, institutionalized pension systems and fund management in developing countries are relatively recent. Pension systems appeared only after the 2ndWorld War. It occurred following the emergence of several independent countries after the colonial period (Alemu, 2015; George, 2014). Pension provision has become a global issue. It has grown to become a universal human right of every human being that requires protection everywhere in the world.

The obligation to provide pension systems has become a primary international human rights obligation for all governments to comply with (ILO Convention No. 102 and UDHR, 1945). Many countries have made provisions in their national constitutions either affirming or setting out as a directive principle of state policy or making an express provision to create pension rights for its citizens.

For instance, in the Republic of Ghana in West Africa, Article 37 (6) of the national constitution provides. "The state shall (a) ensure that contributory schemes are instituted and maintained that will guarantee economic security for self-employed and other citizens and (b) provide social assistance to the aged such as will enable them to maintain a decent standard of living." In the Republic of Kenya, article 43(1) (e) of the 2010 constitution states "every person has the right to social security" (Barya, 2011).

Moreover, as observed earlier in the theoretical literature underpinning pension reforms, the role of international finance institutions such as the World Bank has influenced countries worldwide to undertake pension reforms. In some cases, pension reform is an instrument of conditionality for granting loans (Orenstein, 2008, 2009).

These developments and many others discussed in the study have put pension reform on the front burner of the social policy agenda in many countries. The suggestion is that the reform of pension systems is necessary to enhance retirement income in the light of changing world and social needs of people (Torrington & Hall, 1998).

Pension systems are constantly taking new dimensions, which are motivated by changing objectives and empowering environmental circumstances calling for reform (Holzmann, 2012). In contrast, some individuals have a negative perception of pension reforms. They view pension reform as a threat to their income security (Whitehouse et al., 2009). Such perceptions arise when individuals discover that the reform will weaken benefits and increase the pension age.

On the other hand, pension reform needs to increase savings and develop financial markets, revise untenable existing pension structures to ensure competence in terms of administrative costs, and increase revenue. These factors have promoted reform to recognize old-age provision as an essential part of social policy (Pierson, 1998).

Thus, the structure and problems associated with pension systems vary, and countries are consistently implementing diverse reform programs (Pierson, 1998). The contention is that in developing countries, for instance, the pension system is not effectively controlled, and administration is disjointed and feeble (Kpessa, 2011).

The need for reform, therefore, arises as a consequence. This view may seem supportable because, without a practical governance framework focused on its principal mandate of delivering the promised pension benefits, things may not work well.

A critical review of the literature on pension reforms revealed that reforms or modifying pension systems could be put into two broad methods (Schwarz & Demirguc-Kunt, 1999). There can be minor adjustments and significant reforms to an existing pension system.

Modifications to an existing pension system to correct financial challenges or existing minor issues are minor adjustments or reforms. Some of these adjustments may include variations in pension entitlement indicator, contribution structure, benefit structure, or the supervision of the scheme.

Minor reforms, however, can not sufficiently address the fundamental problems of pension systems. Nevertheless, they do somehow briefly defer the financial predicament of the system if the minor modification targets a financial challenge of the system (Schwarz, 1999).

The second method described as a significant reform is a structural modification to the pension system. The World Bank has made it clear that significant pension reforms significantly transform the pension system's provision from a defined benefit to a defined contribution (World Bank, 1999).

The significant reforms could be introducing a multi-pillar structure or a comprehensive reform to a one-pillar system with multiple benefits. Over the last 20 years, over 30 countries have undergone significant pension reforms following the World Bank's prescription of a multi-pillar and market-focused approach (Madrid, 2003; Muller, 2003).

2.6.2. Types of pension reforms

Apart from the two methods of pension reforms discussed earlier, there are four different types or categories of pension reforms. These are parametric reform, systemic reform, regulatory reform, and administrative reform (Schwarz, 2006).

First, parametric pension reform involves altering the existing standards of the pension framework within political and demographic acceptable limits. The aim is to prevent the size of the pension deficit from exceeding a tolerable level determined by the government (Chand & Jaeger, 1996).

Dorfman (2015) observed that some African countries, including Cape Verde in 2006, Niger in 2010, and Zambia in 2010, carried out parametric reforms to their pension systems. These reforms were to strengthen the old age income of the aged beneficiaries of the pension systems.

The parametric reform types further have three subgroups comprising benefit framework, contribution framework, and eligibility conditions for accessing pensions. Many parametric pension reforms include variations of all three subgroups (Schwarz, 2006).

In practice, the parametric reform type applies to a defined contribution and defined benefit pension plans and voluntary pension systems with predetermined levels or parameters of the contribution revenue to achieve a future outcome.

The parameters for the contribution framework will typically include fixing a floating contribution charge which drops the take-home earnings of the worker. The benefit framework parameters include the pension accumulation rate or the benefit rate per year of active service.

Eligibility conditions for accessing benefits include retirement age, period of active service, or contribution period to the scheme. The parametric reform makes the pension system equitable by improving contribution compliance and linking pension benefits to contributions paid. It serves as a source of fairness to the pension scheme.

Second, the systemic pension reform entails shifting from an already implemented defined contribution system. It could also take the form of shifting to a hybrid system incorporating either defined benefit component or defined contribution features (Schwarz, 2006).

The systemic reform type is a major structural reform. Depending on the various structures, it could be a single comprehensive pillar or a multiple pillar pension system (Odia & Okoye, 2012).

The World Bank prescribed reform which many countries adopted across the world, including Latin American countries, falls within the systemic reform category. Under this approach, many countries used various combinations to restructure their pension systems. Some introduced multi-pillar systems (Muller, 2003; Gill et al., 2008 p. 64).

The belief is that a significant structural reform through the systemic approach makes it possible to hold expenses of a pension arrangement and enables contributions to accumulate for the new system. It re-establishes the original aim of smoothing consumption among individuals covered during their lifetime.

Further, the systemic reform also, in practice, embraces the formation of a non-contributory universal benefit pillar that satisfies the entire population. Some may, in addition, move entirely from a defined benefit system to a defined contribution system with multi pillars (Schwarz, 2006; Odia & Okoye, 2012).

Third, the regulatory pension reform type strengthens pension regulation and supervision. It could be either a solely dedicated specialized agency or some state agencies setting the rules and standards as well as ensuring that the actors in the pension industry govern and manage the affairs of the pension systems well.

Regulation and supervision help make sure that the contribution workers and their employers pay to a pension scheme are well managed and the promised benefits made available to the worker at the right time during retirement. It guarantees that the financial interest of low-income earners with low or no financial knowledge are protected as impartially as those with higher income and more or higher financial knowledge (Schwarz, 2006).

Pensions, as has been revealed by the literature so far, have become an object of intense structural reforms. In some cases, it comes with private management, especially in many developing countries like Latin America and Eastern Europe.

Financial crises that have affected occupational pension plans such as the Eron conglomerate in the US, resulting in losses to workers, have also added to the debate to strengthen the supervision and regulation of private pension schemes (Cichon et al., 2004). Further, a study has established that in the US, the performance of state public employee pension plans has proven sensitive to financial governance structure resulting from regulation.

Thus, financial governance policies, especially independent performance reviews, affect the performance of investments and, therefore, the level of pension benefits for the worker (Useem & Mitchell, 2000) that regulation and supervision are beneficial to both privately managed and public or state pension plans.

Others have also argued that having carried out a structural reform to a pension system in which some aspects are mandatory but put in the hands of private management, the state has an equal responsibility to create a regulatory and supervisory environment to protect the worker. It is perceived to be a direct complementary role of the state (Cichon et al., 2004)

The sole agency or multiple regulatory agencies may adopt a reactive or pro-active approach to supervision and regulation of the system. In well-developed economies with advanced market structures capable of managing their institutions well, a reactive approach could be appropriate.

In this, the pension institutions have the leeway to operate, and the regulator only comes in when an issue has arisen. However, penalties for breaches must be strong to send a good signal. In countries where the market institutions are not well developed and capable, the pro-active approach is the suitable method. In this method, the rules and standards become operational from inception. There is continuous and persistent reporting and inspection and reactive steps to keep the system in check (Cichon et al., 2004).

Regulation and supervision usually cover financial regulation primarily to control risk assumed by pension funds and protect them from fraud. So regulation will define eligible financial instruments, risk ratings, and related factors.

Others are investment limits, authorized markets, custody of securities, privileged information, and conflict of interest. Foreign investments, accounting methods, and how investments are valued are also covered.

The fourth and last type of pension reform is administrative reform. It focuses on bringing together all relevant administrative structures in the pension system to achieve effectiveness and efficiency in the governance and management of an existing pension system or developing a new pension system (Schwarz, 2006).

The process may include refining contribution collection and compliance procedures, enhancing benefit services, introducing integrated information communication and technology systems as well as maintaining appropriate databases. In addition, measures such as improving record-keeping, strengthening eligibility standards, and combining contribution collection with the tax collection system are part of administrative reforms.

In a nutshell, among the types of reforms reviewed, it is only the parametric and systemic types that may directly affect improvement in pension benefits. However, this may only be the case if the central objective of the reform is to achieve improved benefits. Thus, the gap as to whether pension reforms lead to improved benefits, which is the subject of this thesis, still needs to be answered.

2.7. Causes, pressures, and implementation of pension reforms

Pension plan designs vary considerably within and across regions demonstrating a vast spectrum of views (Palacios & Pallares – Millares, 2000). Most countries worldwide show noticeable diversity in pension architecture concerning objectives, scope, coverage, and benefits.

Thus, this section discusses some of the causes of the need to undertake pension reforms and the pressures that trigger the actions to embark on it. Just as the design of pensions differs, so also their vulnerabilities, opportunities, and approaches to implementing reforms differ. The section, therefore, also discusses the approaches to the implementation of pension reforms.

A pension system's principal objective is to deliver the promised welfare benefits and services to beneficiaries. The attainment of the goal ensures administrative efficiency. It entails optimum use of resources, sound investment practices, and the promotion of better governance, the exercise of diligent fiduciary responsibility, transparency, and accountability (Ross, 2004).

Pension systems face many uncertainties and vulnerabilities (Gillion et al., 2000). A pension scheme must remain financially sustainable by minimizing, monitoring, and controlling all scheme-specific risk factors. These risk factors include demographic, business, operational, liquidity, liability, economic, investment, catastrophe, and political risks (OECD, 2011).

Despite the uncertainties, there is a pressing demand for pension institutions to deliver on their promise of good benefits and services. In addition, there are heightened public expectations to the role of pension institutions as critical enablers to achieve national aspirations of social inclusion, social cohesion, elimination of poverty, and economic growth and development (ISSA, 2013).

Given these demands and challenges, a pension system must be well designed. Its characteristics must be broad-based, affordable, adequate or sufficient, robust, equitable, predictable, and sustainable financially (Park, 2010).

2.7.1. Causes of pension reforms

As has been demonstrated so far, by the very nature of pension systems, reform will continue to be inevitable. Some may be minor, but others are major in scope and structure. It is, however, critical in a thesis of this nature to identify some of the significant causes of reforms.

(i) **Demographic changes**

One of the significant causes of pension reforms that are dominant and virtually universal in the literature is the effect of demographic changes. It is the primary cause of increasing pension expenditure in almost all OECD countries (Fall et al., 2014).

Demographic change is a worldwide phenomenon today. It has resulted from universal tendencies such as declining fertility, mortality, rising longevity, and migration (Malmberg et al., 2006; Morteng, 2006; Fall, 2014; Mukesh et al., 2007; Palier, 2007).

Increasing life expectancy and the declining fertility rate cause financial difficulties and a series of other challenges to pension systems in particular. The introduction of old-age pension substantially reduced old-age poverty. The financing system based on a contract of generations also worked well to support the pension systems. (Schwarz et al., 2014).

However, with changes in demographic structure, the number of older people retiring outstrips the younger generation, who are now working to pay taxes to support the increasing retirees and older people. In some cases, such as in Europe, the use of contracts of generations resulted in offering generous pensions to generations of retirees.

Thus, with the changes in the demographic structures or dynamics, the cost of pensions becomes increasingly high and fiscal stress on many countries. The demographic structural changes, therefore, call for pension reforms. Efforts must ensure the system's financial sustainability, but as much as possible, the poverty reduction achieved among the old must also be maintained (Morten et al., 2006; Schwarz et al., 2014).

However, an aging population, changing working life, and a new gender balance are future common challenges confronting all countries (UN, 2013; Jgerenaia et al., 2014). It is to ensure an all-inclusive pension provision for all.

Further, unless lasting pension reform occurs, pension spending will continue to increase in a rapidly rising longevity in age. The aging problem is a threat and confrontation to both PAYG pension systems and funded systems (Morteng et al., 2006). It also affects advanced or developed, middle income and developing countries whose pension systems are not very old.

Countries in Eastern Europe and the former Soviet Union in economic and political transition are affected by the future effects of aging on their pension systems. They are also experiencing rapid aging when they are working to develop and strengthen their institutions for sustaining their market economic reforms (Mukesh et al., 2007).

The aging effect will undermine their relative success by putting much risk on their economic growth and fiscal sustainability. On the global scale, the estimation is that the world population will surpass 9 billion by 2050, and the number of people aged 60 years and over will have tripled. Three-quarters of older persons will be living in developing countries, and the majority will be women (ILO, 2014).

Furthermore, by the year 2050, there will be only four people of working age for every one person over 65 years old. It is compared with 9 people to every person over 65 years in 2000 (ILO, 2014). It is already almost four people of working age for every person over 65 years in some countries in Europe (Jgerenaia et al., 2014).

The case is not different for Eastern Europe and former countries of the Soviet Union. The estimation in their case is that by 2025 there will be one over 65 years person to every five people of working age (Mukesh et al., 2007).

The literature review on demographic changes as a significant cause for pension reforms highlights three main points. These are central to addressing the phenomena (Jgerenaia, 2014).

The first is the challenge of population aging caused by declining fertility and increasing longevity and their implications for maintaining adequate and sustainable pensions. The second is financial sustainability as a necessary precondition for an adequate pension provision in the future.

The third is the modernization of the pension systems. It relates to the labor market. It includes ensuring that the changing nature of work comes on board. All categories of workers, part-time, temporary, self-employed, and mobile workers or atypical or casual workers, are all covered by the pension system.

As a solution, there is no single or universal approach. Researchers and writers have recommended various approaches to the aging problem. The ILO has also recommended a comprehensive multi-dimensional integrated and innovative policy mix approach.

The ILO approach recognizes the interdependency between demographic changes, employment, labor migration, social protection, and economic development. It emphasizes that the right to pension is universal. Still, policies for pension reform must be context-specific, and each country needs to develop the right policy mix appropriate to its situation. In other words, customization of a solution is the best, not a one-size-fits-all approach (George, 2014).

At the 102nd international labor conference of the ILO held in Geneva, Switzerland, in 2017, the conference deliberated on action needed by various member countries to provide jobs and social protection for the growing and aging populations. The conference emphasized that the fast-changing demographics present a considerable challenge to labor markets and pension systems worldwide and require urgent attention.

Furthermore, the conference noted the need for a long-term policy vision to deal with the employment and social protection needs of people of all ages and promote shared responsibility and solidarity between generations. It means a life cycle approach to the world of work is needed.

In this direction, the development of employment and social protection or pension policies take a form in such a way as to reinforce each other. It should be in direct response to the specific and diverse employment income patterns and the needs of different aged populations.

The conference, a tripartite committee of ILO, was attended by representatives of governments, employers, and labor unions worldwide. The conference resolved that the multifaceted approach to dealing with the problems confronting pension systems requires the development of job-related skills and the creation of job opportunities for the youth.

In addition, there was the need to ensure fair wages and respect for the rights of those in work and social protection for those unemployed. Job opportunities and training for older workers to provide them with requisite skills to remain in work longer and the provision of sufficient pensions for the retired workers were others to achieve.

The conference revealed that in Africa, the priority is to provide employment for the large youth population and extend social security to the informal sector, as well as encourage the formalization of informal work. In Europe, the major problem is the aging population. It requires ensuring productive jobs for older workers and sufficient pensions for those retiring.

Africa and other developing countries need to prepare for the future as their population ages. Skills mismatches and shortages are common challenges in Africa. Thus, measures to improve and update skills throughout the life-cycle are essential parts of the policy mix.

Employment-centered policies and development strategies to generate decent and productive jobs for all working-age groups are critical considerations based on the ILO estimations of the ratio of four working people to every over 65 by 2050. The conference was emphatic that if jobs were not available and people put in jobs now, the dependency ratio would worsen by 2050.

Indeed increasing labor force participation is necessary for financing the pensions for those who cannot find work now or those who have retired. Enterprises create jobs, and to keep on providing jobs, enterprises need enabling environment and flexibility. These will enable them to become sustainable and adapt to the changing nature of work.

Concluding, the 2013 ILO labor conference stressed that formal employment with fair conditions and wages is needed to enable people to contribute to and sustain the pension systems for future generations regularly. Policies on pensions should aim toward ensuring their adequacy and predictability.

Further, there should be deliberate policies for a gradual and flexible transition from active working life to retirement. It could be through phased-in retirement, part-time work, and job sharing. Finally, for those older workers who choose to delay retirement, measures including legislation, public awareness, and company and enterprise-level initiatives must be put in place to combat discrimination based on age at the workplace.

Even though the effects of demographic changes look daunting, the indication is that it is resolvable with deliberate and carefully thought-through policies and measures. However, work must be based on proactive strategies to turn the age transition into an opportunity (Mukesh et al., 2007).

Thus, combinations of strategies could work. These include creating a conducive business environment for enterprise restructuring, innovation, and investing in lifelong learning to increase productive employment of aging workers and the young ones in the workforce.

The strategy some countries also use to increase the workforce to improve the dependency ratio is through immigration policies. These policies allow skilled workers from countries with a younger population around their regions of location (Mukesh et al., 2007).

A study conducted by Krebs and Scheffed (2017) about solutions for the aging problems revealed positive effects of public investment in education, housing, and digital infrastructure. According to the study, investment in these areas increases labor market participation and productivity efficiently.

It generates an increase in aggregate output and employment and significantly contributes to the sustainability of public finances. Investment in education and skills also improve the number of gainfully employable people and also leads to good health.

Despite the positive contributions of the various views on resolving the effects of global demographic changes on pension systems, the issue of pension benefit improvement as the central goal in carrying out pension reforms remains unanswered. Others have argued, for instance, that the pension reform arrangements generally to address the demographic changes focused on curbing pension expenditures rather than advancing funding or financing mechanisms (Disney, 2000: Hauner et al., 2007: World Bank, 1994). Thus, the research question for the thesis remains relevant.

(ii) Financial Sustainability

Pension reforms are also about financial sustainability. Population aging, slowing economic growth, and budgetary constraints have led to rising pension costs and declining resources with which the government could finance pension liabilities (Chand & Jaeger, 1996).

The solution adopted by some countries is to reform or modify the parameters of the traditional defined benefit PAYG pension system. These modifications include incremental changes in contribution rates, an increase in retirement age, and changes in indexation rules to keep pensions in line with changing economic and demographic trends and the fiscal capacity of the state (Chang & Jaeger, 1996; Holzmann, 1988).

Others have created pension reserve or buffer as dedicated funds to meet shocks arising from the increasing cost of pensions (Holzmann, 1999). However, some seem to be only temporary solutions to find long-lasting solutions. Others resorted to structural changes in the pension scheme design and objectives of the old-age pension systems by creating mandatory individual financial defined contribution schemes.

Under these arrangements, pension benefits based on individual contributions go into privately managed pension funds. The market returns on capital on the contribution provide the pension benefit (Holzmann & Hinz, 2005).

From 1990 to 1997, about 20 countries in South America to East Asia, Europe, and the former Soviet Union had adopted the funded defined contribution system as a dominant pillar in their mandatory pension schemes. Others adopted it as part of multi-pillar structural reforms (World Bank, 1997; Holzmann, 1999).

By the middle of the 1990s, a new model of structural pension reform termed Notional Defined Contribution (NDC) had emerged (Fox & Palmer, 1999; Plenipotentiary, 1997). Countries that adopted this new model were Sweden, Italy, Latvia, and Poland.

The NDC combines a defined benefit with a defined contribution structure based on individual accounts. Another feature is the fixing of a long-term contribution rate. Each year the contributions are recorded in each contributing worker's account.

The benefits payout links with individual contribution history over the entire working life of the worker. The contribution relates to a notional interest rate tied to wage growth or overall economic growth rather than a return on the contributions in various asset classes.

The growth in average wages or growth in aggregate wages each year has different fiscal implications under demographic, employment, and wage shocks. Thus, in the NDC system, the individual notional accounts do not have any capital that can be claimed on retirement as a lump sum or purchase an annuity in the private market.

At retirement, the government converts the accumulations in a person's account into an annuity or a payment stream based on cohort life expectancy like a funded scheme. The financing of the annuity is on a PAYG basis.

The life expectancy or mortality tables require recalibration to recognize increased longevity so that the effects of the longevity of gains automatically get incorporated into the NDC pension system. The NDC is designed as a package to depart from purely a defined benefit and defined contribution structures hence capable of controlling cost.

The NDC's originality lies in its combination as a package with clear policy objectives and incorporation into its presumed perpetuity. The NDC has many positives. It is fairer when compared with a defined benefit system that bases benefits on the last salary or last few years to the advantage of high salary earners.

The other benefit of the NDC is that the system has a close link between contribution and benefits. So workers are encouraged to work for more years and contribute more. It ensures a long-term balance between contributions and pension payouts. There is no exposure of individuals to the short or medium-term fluctuations in market returns and annuity prices.

The NDC provides a good transition from a reformed PAYG system to a fully funded pension plan. There is no additional financial burden on the government to finance benefits during the transition into a fully funded scheme. It avoids the need for government to adjust the pension system parameters regularly.

A critical analysis of the NDC as a pension reform option revealed that in the long term, it does not depart from the traditional defined benefit system. Inherent in the NDC increases longevity, sustained by reducing pension benefits. The stabilized contribution rate also leads to the gradual erosion of the value of pensions even as the population ages (Weaver, 1988, 1996).

Pension benefit at the end of the day depends on the economy's future performance and demographic developments. There could be wage reductions which could affect revenue and result in pressure on the government to find resources to meet the extra cost of pensions.

Thus, savings and capital formation, labor market distortions, and likely decline in the notional return continuously are fundamental defects in the NDC (Elter, 2000).

The demerits of the NDC necessitated a look for a better option of pension reform. Has brought in the complete shift towards a funded scheme that addresses in principle all the incentives and most distributional issues as well as issues of savings, intergenerational equity, and capital formation, which is the first stage of mere reform of the traditional PAYG and the NDC could not achieve (Holzmann, 1999).

The fully-funded pension reform option is a market-based approach. It could be a fully funded defined benefit or defined contribution arrangement. The management is mainly private, especially concerning the investment of the fund assets (Holzmann & Hinz, 2005).

In the fully funded option, the performance of the market determines the amount or quantity of benefit paid out. Further, inherent in it are also three significant problems.

First is the repayment of the committed pension liabilities of current retirees and those active workers. They have already acquired pension rights under the old PAYG pension system, so those rights need preservation as part of the reform. The second is whether the country which intends to adopt the fully funded pension system approach has the financial infrastructure, regulatory capacity, and a political economy that will be equal to the task of implementation of the pension reform.

The third is whether the risk associated with financial market fluctuation, which will eventually affect the level of pension benefit payout, can be adequately addressed. However, the challenges are resolvable somehow.

Existing pension liabilities are manageable by setting aside assets for future pensions. Financial infrastructure can be developed or enhanced through institutional capacity building and the political will to regulate funded pensions to provide genuine economic security for the contributors to the schemes (Holzmann, 1997b).

Furthermore, the market fluctuation risk could also be eliminated or minimized. Market-driven returns, by their nature, vary from period to period. Thus governments can and should control the risks in mandatory funded pensions by imposing regulatory and supervisory institutional framework (Turner, 1998).

Areas of investment must be restricted initially, and rules of portfolio diversification put in place (Vittas, 1996). With these, a shift towards the fully funded pension system is feasible under limited conditions.

The features and outcomes of the fully funded pension reform approach failed to address the issue of guaranteeing improved pension benefits. It also failed to address the poverty reduction issue and the right to inclusiveness in the pension system. Thus, the gap in the literature that this thesis seeks to point out remains relevant.

Not surprisingly, the difficulties observed in the reform approaches of PAYG only reform, the NDC reform, and the fully-funded approaches led naturally to the third central approach to pension reform. It is the multi-pillar system suggested by the World Bank.

The Multi-Pillar system is composed of a combination of five essential elements. The first is a noncontributory or 'zero pillars' in the form of social assistance that provides a minimal level of protection. The second is the 'first pillar' contributory system limited to varying earnings and seeks to replace some income on retirement.

The third is a mandatory 'second pillar,' essentially an individual savings account. The fourth is the voluntary 'third pillar' arrangement that can take many forms. A worker participates in the third tier by joining a private pension scheme, or it could be employer-sponsored for all workers of that employer. The features could be a defined benefit or contribution plan, but flexible and discretionary.

Finally, the fifth pillar is informal intrafamily or inter-general sources of both financial and non-financial support. These include access to health care and housing (Holzmann & Hinz, 2005; Louise & Palmer, 2000).

The Multi-Pillar pension reform model has inherent in it the capacity to diversify the administration, funding, and the structure of benefits of the pension system. Pension systems are also methods of addressing and managing the risk of various social and economic contingencies. Therefore, pension design must be based on the capacity to efficiently manage the relevant risks for both the individual and the society as a whole (Kemp & Pate, 2011).

Thus, the principle of efficiency in the management of risks and the expected maximization of investment returns through diversification of assets and other elements are very critical in pension design and management. The Multi-Pillar pension system, which comprises several elements with different characteristics operating in conjunction, achieves the desired individual and societal benefit and minimizes the relevant risks.

The Multi-Pillar design shows higher flexibility and is more suitable to address the needs of the targeted population. It is also robust enough to withstand major macroeconomic shocks arising from economic, demographic, and political volatilities (Chlon et al., 1999; Holzmann & Hinz, 2005, Rutkowski, 1998).

Moreover, it has the inherent ability to attain intra and inter-pillar optimal risk and the desired returns on investment based on asset diversification. Indeed empirical findings from the OECD countries which have adopted the multi-pillar reform approach support the benefits of the diversification argument (Thompson, 1998).

There appears to be some common understanding and acceptability of the multi-pillar system. The system incorporates as many elements as possible depending on the preference and capacity of individual countries through risk diversification to more effectively and efficiently deliver retirement income to retirees.

The reason is that, at the primary level, the factors that affect each pillar are not perfectly correlated. Some have minimal or even negative associations. It implies that at most, a minimal level of expected retirement income by way of return c

is achievable at lower risk through diversification of the Multi-Pillar system (Burtless, 2001; Vittas, 2000; Holzmann, 2001; Lindbeck & Person, 2003; Shiller, 2003; Nataraj & Shoven, 2003).

However, the multi-pillar approach relies on financialization or the financial market's performance to determine the quantum of pension benefit paid out. Therefore, there is no guarantee that this new reform approach will lead to a better pension benefits.

(iii) **Coverage**

The need to extend the inclusion of more people into the pension system is another reason for undertaking reform of the pension system. It could take the form of redefining those covered under a mandatory system as defined by legislation to include more formal sector workers. It may also take the form of an extension to cover workers in the informal economy. More than 60% of the global workforce is in informal employment (ILO, 2018).

This group constitutes 71% of the world's population with no access to pensions (ILO, 2017). It is mainly due to the informality of their economic activities. The Lack of pension for the workers in the informal economy is a significant source of vulnerability. It puts many such workers in a vicious cycle of poverty and social exclusion.

This development constitutes an enormous challenge to the individual's welfare and enjoyment of human rights and, in particular, the right to social security. The right to social security takes its roots from Article 22 of the United Nations Universal Declarations of Human Rights (1948) and Article 9 of the International Covenant on Economic, Social, and Cultural Rights (1966).

The United Nations has acknowledged that the lack of social protection or social security or pensions for workers in the informal sector is a significant obstacle to achieving the UN 2015 Sustainable Development Goals (SDGs). Therefore, there is the need to ensure all-inclusive social protection.

Goal 1 of the SDG is on ending poverty. Goal 3 is on ensuring healthy lives and promoting well-being, goal 5 is on achieving gender equality and empowering women and girls. Goal 8 promotes sustained, inclusive, sustainable economic growth, full and productive employment, and decent work.

Further, goal 10 provides for reducing inequality, and Goal 16 on promoting peace, justice, and strong institutions (ILO, 2017). The content is that, for the right to social security or pensions to become meaningful, it must be well structured. The system should provide comprehensive coverage against all contingencies of life circumstances that threaten the income-earning ability of persons and their ability to maintain an adequate standard of living (Raynaud, 2006).

The benefits of the pension or social security system must also cover all those in need of a pension. They must gain access to it without discrimination regarding status, race, immigration status, or otherwise. It is the only way the pension system can become meaningful and a universally accepted human right (Opolot, 2007).

Thus, all persons must be part of the pension systems, including the most disadvantaged or marginalized population groups. Where it is a contributory system, it must be affordable.

It must be noted, however, that within the context of this study, an extension of coverage to include more people, including workers in the informal economy, does not necessarily lead to the improved pension benefit. Consequently, the study remains relevant.

(iv) Gender inequality

The gender inequality dimension between men and women is another reason for pension system reform. Various studies have shown that females are at a disadvantage compared with males when it comes to the issue of pensions that determine the living standard of the older population (Raday, 2013).

Therefore, countries are obligated to facilitate the participation of women in paid work to ensure that they do not fall into early retirement. They must ensure that women have access to adequate pensions (General Recommendation 27 of CEDAW Committee). The attainment of this will also fulfill the UNSGD of 2015 and UNUDHR of 1948.

The incomes and quality of life in retirement for women derive from stereotyping in education and girlhood, precarious jobs, informal labor, and interrupted career patterns due to childbirth. Others are the motherhood penalty in wages and earlier inadequate retirement provisions for women in pension systems (Raday, 2013).

The established position is that pensions are the primary source of income for only a minority of the world's older women. However, the situation is better in the upper-income countries than in the middle and lower-income countries. In middle and lower-income countries, the average is less than 30% of the workforce in mandatory pension schemes (World Bank, 2012).

The Gender Gap in Pensions (GGP) between the average pension of men and women appears to be improving due to deliberate efforts by various countries to close the gap. The April 2019 Social protection and jobs discussion paper No. 1917 report by the World Bank Group revealed that the average Women's Pensions were 27% lower across EU countries.

The United Nations has established that women usually live longer than men and outnumber men at older ages. Therefore the population of older women tends to increase with advancing age. In 2005, for instance, women aged 65 were 4 to 3 to men and 2 to 1 at ages 80 and over (UN, 2007).

The April 2019 World Bank Group report (supra) further revealed that in all EU countries, life expectancy among women younger than 65 is about 50%. The average increased to 58% among those 65 and older and 69% among those 85 and older. This trend still shows that women have a higher life expectancy than men.

Thus, an in-depth analysis of how women are affected is necessary for existing pension plans to identify discriminatory provisions and programs and introduce good practices targeted at improving pension provision for the vulnerable populations in general and women in particular through pension reforms.

2.7.2. Reform pressures

The literature review has substantially identified several factors responsible for the erosion of pensions systems necessitating reforms (Davis, 1995; Louise & Palmer, 2000; Vittas, 1993). As has been observed, the demographic trends suggest rapid aging due to declining fertility rates and increasing longevity. These hurt economic growth, household behavior, labor market, pension benefits, state revenue, and income redistribution.

In terms of the social dimension, they affect family cohesion and functioning, living arrangements, housing, and migration. Expenditures on health care have grown at a rate more than average income. It has led to higher contribution rates or curtailment of benefits in some cases (Weber, 2010).

However, there are several factors or barriers which make pension reform daunting. In developed countries, there is an existing legal and regulatory framework related to social welfare and institutional rigidity, which are constraints to reform (Pierson, 1999).

In developing countries, socio-economic imbalances, poor infrastructural quality, and underdeveloped capital markets are barriers. Political pressures are also a barrier (Newbery & Stern 1987; Radian 1980).

Given the barriers or obstacles to carrying out pension reforms, it is necessary to identify what compels or triggers the reform process by governments or countries. In an attempt to find a way out, the Allianz Dresdner Economic Research developed Allianz Pension Reform Pressure Gauge (APRPG) (www.allianz.com).

The purpose is to help understand the necessity for pension reform and the ability of the existing pension system to cope with it. The APRPG is an indicator that measures the pressures on governments to reform their pension system by examining various dimensions of pension systems consistently.

Further, the gauge allows cross-national comparison by measuring the sustainability of pension systems and their resulting need to reform them. The APRPG states that the pressure on pension systems arises mainly from two sources.

These are demographic change and underdeveloped or unsustainable pension systems. In determining reform pressures, it is necessary to critically analyze the reforms or modifications already made to an existing pension system and their future consequences.

For instance, if demographic changes have already led to adequate reforms and have laid a sound or solid future foundation for the pension system, the reform pressure can be considered eased. Thus, there is a need to distinguish between the 'need for reform 'and 'reform progress.'

The first publication of the fundamental concept of the APRPG was in Allianz Dresdner asset management's Central and Eastern Europe Pensions Reforms trend and growth opportunities in 2004. Based on further developments and findings in its application, it was further improved and was again revised in 2007 and published in Global Investors Central and Eastern Europe on pensions.

Thus, the APRPG now has two components, namely, Reform Demand Indicator (RDI) and Reform Progress Indicator (RPI). The factors for the determination of the RDI include elements such as the current and future demographic situation, the size of government debt, coverage or number of persons enrolled on the central pension system, income replacement ratio, and retirement age.

These elements of the RDI are measured to determine whether there is pressure on the government to reform the pension system. The elements of the RPI are factors such as the future changes in crucial pension systems which may arise from an already implemented pension reform.

The other critical elements of the RPI are the rising retirement age and the financial strength or soundness of the funded pension systems. These factors determine whether there is pressure on the government to reform the pension system.

The application of the APRPG covered several Asian countries' pension systems. The investigation revealed that the reform pressure differs considerably from country to country.

Countries such as Australia, Hong Kong, and Taiwan, which have established comprehensive pension systems with solid and sound funded pillars, have low pressure for reform. However, the pressure for reform was high in India and China because the overall number of persons enrolled in the pension systems in both countries is still low.

The APRPG has similarly measured other pension systems around the world. Some are Central and Eastern European pensions 2007, Asia Pacific pensions 2007, funded Pension in Western Europe 2008 and Retirement at risk; The US pension system in transition 2008.

In 2009, the Allianz Global gauge was further updated and developed into a Pension Sustainability Index (PSI). The PSI combines the various characteristic of pension systems with the factors that influence them to keep track and evaluate policy changes made in different countries around the world.

In addressing the sustainability of public pension systems, the PSI can indicate a country's need for reforms to maintain the long-term financial sustainability of the pension system. Given the differences in many countries specific institutional, technical and legal parameters, it is not easy to use the PSI to assess all types of pension systems.

However, key variables impact the sustainability of national pension systems regardless of the country's specific parameters. A careful and systematic study of the dynamic variables enables the PSI to evaluate the long-term sustainability of national pension systems and, therefore, the pressure on governments to carry out reforms.

The original APRPG was developed for Europe and based on data available in Europe. Therefore adopting it elsewhere was not an easy task. Over time, the stretching of the definition of the variables fed into the method has enabled its universal application.

However, it is necessary to acknowledge that data unavailability can have a marginal effect on the reading for some countries. Nevertheless, a relatively clear picture always emerges despite the shortcomings. (Allianz ES, 2014).

Over the years, Allianz has continued to issue annual pension sustainability index reports to rank countries across the globe. That for 2020 is shown below in Table 1

Table 1:

	API 2020		API 2020 Financial and Demographic Starting Point		API 2020 Sustainabiltiy		API 2020 Adequacy	
Weight			20%		40%		40%	
COUNTRY	Rank	Sum	Rank	Sum	Rank	Result	Rank	Result
Sweden	1	2.91	18	3.38	6	2.96	13	2.62
Belgium	2	2.92	46	4.26	3	2.85	8	2.31
Denmark	3	2.96	17	3.32	13	3.24	11	2.51
New Zealand	4	3.00	21	3.46	27	3.83	1	1.94
United States	5	3.04	11	3.10	14	3.29	16	2.77
Australia	6	3.13	10	3.04	16	3.34	22	2.96
Netherlands	7	3.13	39	4.00	30	3.87	2	1.95
Norway	8	3.16	16	3.28	29	3.86	10	2.39
Bulgaria	9	3.16	32	3.80	2	2.67	36	3.33
Canada	10	3.24	20	3.42	26	3.80	12	2.59
China	11	3.25	46	4.26	5	2.94	26	3.06
Czech Republic	12	3.26	42	4.16	4	2.86	34	3.22
Latvia	13	3.27	26	3.64	17	3.36	23	2.99
Ireland	14	3.31	41	4.12	9	3.14	27	3.08
Luxembourg	15	3.35	40	4.04	39	4.10	7	2.27
United Kingdom	16	3.36	24	3.58	23	3.57	25	3.03
Slovak Republic	17	3.36	44	4.24	11	3.18	28	3.09
Italy	18	3.39	70	6.10	10	3.17	6	2.25
Taiwan	19	3.43	60	4.96	15	3.33	15	2.77
Kazakhstan	20	3.48	7	2.94	33	3.88	37	3.36
Finland	21	3.49	34	3.84	35	4.02	17	2.79
Israel	22	3.51	8	2.98	53	4.49	18	2.80
Switzerland	23	3.52	43	4.18	63	4.67	4	2.05
Japan	24	3.52	66	5.52	38	4.10	3	1.96
Estonia	25	3.53	28	3.70	42	4.16	19	2.81
Germany	26	3.56	56	4.76	21	3.52	24	3.01
Lithuania	27	3.57	38	3.94	12	3.22	42	3.74
Indonesia	28	3.59	15	3.20	1	2.48	60	4.89
Korea	29	3.59	62	5.22	8	3.12	35	3.25
Singapore	30	3.61	53	4.60	62	4.66	5	2.08
Peru	31	3.72	15	3.20	34	3.98	41	3.71
Malta	32	3.74	52	4.58	40	4.12	21	2.93
Russia	33	3.78	25	3.62	22	3.56	49	4.09
Austria	34	3.84	65	5.50	51	4.45	10	2.39
Mexico	35	3.84	15	3.20	7	3.12	58	4.89
Egypt	36	3.88	12	3.12	20	3.48	54	4.66
Philippines	37	3.91	2	2.44	25	3.71	57	4.85
India	38	3.91	23	3.54	31	3.87	51	4.15
Hong Kong SAR	39	3.92	36	3.86	46	4.35	38	3.52
Colombia	41	3.93	30	3.72	41	4.13	43	3.84
South Africa	41	3.93	6	2.88	24	3.59	55	4.80
Turkey	42	3.95	50	4.34	19	3.40	52	4.30
Brazil	43	3.98	58	4.82	45	4.34	32	3.20
Spain	44	3.98	67	5.88	47	4.39	14	2.63
Hungary	45	4.05	54	4.68	59	4.59	31	3.19
Croatia	46	4.05	55	4.70	38	4.10	40	3.69
Slovenia	47	4.07	63	5.28	50	4.43	29	3.12
Cyprus	48	4.08	57	4.80	61	4.64	30	3.16
Portugal	49	4.12	70	6.10	49	4.40	20	2.85
Romania	50	4.12	37	3.88	48	4.40	44	3.98
France	51	4.16	59	4.84	64	4.76	34	3.22
Thailand	52	4.18	47	4.28	44	4.33	45	3.99
Chile	53	4.22	30	3.72	60	4.61	47	4.09
Poland	54	4.27	61	5.10	36	4.05	46	4.08
Kenya	55	4.33	4	2.84	43	4.25	61	5.15
Ukraine	56	4.36	51	4.56	55	4.52	49	4.09
Vietnam	57	4.37	48	4.30	32	3.87	60	4.89
Greece	58	4.43	70	6.10	52	4.47	39	3.56
Argentina	59	4.46	22	3.50	58	4.58	56	4.82
Morocco	60	4.47	34	3.84	18	3.36	67	5.88
Malaysia	61	4.52	5	2.86	70	5.72	51	4.15
Kuwait	62	4.59	35	3.84	67	4.96	53	4.59
Laos	63	4.63	3	2.62	28	3.85	69	6.41
Nigeria	64	4.63	1	1.46	57	4.58	68	6.27
Bahrain	65	4.70	27	3.68	56	4.55	62	5.37
Qatar	66	4.78	19	3.40	66	4.87	63	5.38
Saudi Arabia	67	5.03	10	3.04	68	5.32	65	5.74
Sri Lanka	68	5.18	32	3.80	69	5.61	64	5.46
United Arab Emirates	69	5.29	64	5.28	65	4.77	66	5.83
Lebanon	70	5.45	49	4.32	54	4.50	70	6.97

4 *Source: Allianz Research*

The Allianz pension index aims to analyze pension systems in terms of sustainability and adequacy comprehensively. The index is based on three sub-indices and takes into account 30 parameters. The parameters are rated on a scale of 1 to 7, with 1 being the best grade.

The 2020 report covers 70 countries based on available data as of March 2020. The factors used include combined demographic change and the public financial situation; the two are the starting point for any pension reform. Emerging countries in Africa and Asia scored well in this sub-index area because their populations are still young, and their public deficits and debts are also low.

The report stated that European countries, however, had low scores in this because of the old population and high debts. Italy and Portugal are cases in point.

The sustainability sub-index measures how pension systems react to demographic change. Performance in this area reflects actions taken to react to the demographic changes. Countries including Indonesia and Bulgaria performed well because of actions taken, including an increase in retirement age, disincentives for early retirement, and the introduction of capital-funded elements into their first pillar Pay-As-You-Go pension system.

According to the 2020 report, countries that performed poorly in this area, including Saudi Arabia, Sri Lanka, and Malaysia, failed to take action. The retirement age is 60 years and below with no early retirement deductions and no other measures to deal with the demographic change.

The other determinant contained in the report is the pension adequacy sub-index. This measures how the pension system can provide a paid pension that is adequate to meet the standard of living in old age. The average score in this area is 3.7.

This average score reflects that many pension systems still put greater weight on the well-being of the current generation of pensioners. Further, it shows that the emphasis is not on the future generation paying the taxes and contributions to support the current generation of pensioners.

The report revealed that countries that scored high in this area, including Austria and Italy, have more generous state pensions or substantial capital-funded second and third pillars. These include New Zealand and the Netherlands. Countries that perform poorly are emerging ones such as Nigeria and Laos, which do not have a reliable public pension system.

The 2020 report concludes that balancing pension sustainability and adequacy remains a significant issue for countries to address. It calls for radical and bold actions to bring about reforming pension systems.

The analysis of the findings of the 2020 Allianz Pension report again revealed a need to achieve a policy balance between sustainability of pensions and adequacy of pensions. How pension payout achieves or helps maintain or improve the standard of living of pensioners remains a gap to be filled.

Thus, the research question put in a hypothesis for testing in this study remains very relevant. Do pension reforms lead to improved pension benefits is a missing gap in the literature that needs answers.

2.7.3. Implementation of pension reforms

The literature review has revealed that pension reform is an ongoing topical issue. The Allianz research in its 2020 report indicated that it is not possible to overhaul an existing pension system from scratch. Instead, governments have to implement gradual reforms. They should take into account the legal claims of existing pensioners and contributors.

It emphasized that there is no one-size-fits-all solution. The World Bank had built pension reform experience over the years. The Bank has been involved in over 80 countries to carry out pensions reforms (Holzmann et al., 2005; George,2014).

The experience revealed various challenges with pension reform implementation. It is not only deciding to undertake pension reforms and prescribing the nature of the reform and implementing institutions or operations of the system.

There is a need for adherence to the goal and core principles of the reform. The capacity to achieve a flexible and context-specific set of social and economic outcomes from implementing the reform is also critical.

The process of the pension reform, including factors such as a credible and stable political environment and conditions sufficient enough for full implementation and maturation of the reform, are necessary. Buy-in and active participation of the local political class, technicians, and general acceptability of the country's population to undertake the reform are indispensable (Holzmann and Hinz, 2005).

Another factor of the process is sufficient capacity building and implementation. Pension reform goes beyond changes to the existing pension legislation. It involves a change in the method of the pension provision. It also necessarily requires changes in governance, contribution collection, record-keeping, client information, assets management, regulation, and supervision, as well as benefits administration (Holzmann et al., 2005).

Thus, the passage of pension reform legislation is just a tiny part of the work. The crucial part is an investment in local capacity building and implementation. In some cases, even the institution implementing the reform had created challenges. Further, there is a distinction between the flaws of the reform implementation and flaws of the reform or the reform's challenges.

The implementation of pension reform requires focus. Other issues may also arise which will require further reform. So without a dedicated body solely focused on the implementation, the process could fail. Some countries have used the reform commission or designated offices (Orenstein, 2000; Holzmann & Hinz, 2005).

Typically the reform implementation process has been facilitated in some countries by setting up technical or bipartisan commissions. For instance, the UK Pensions Commission comprised three respected employers, trade unions, and academia. In the US, the Greenspan Commission included members appointed by both major political parties who were in close contact with their party leaders.

These commissions placed significant emphasis on making a case for reform. Additionally, the commissions had the recognition as the national experts on the subject (George,2014).

Others have also argued for an evaluation criterion for assessing the reform implementation regarding its content and the reform process. The primary goals of a pension system, including its adequacy, affordability, sustainability, financial soundness, and robustness to withstand significant shocks such as economic, political reliability, and demographic changes, are some of the criteria used for evaluation (World Bank, 2005).

Where the reform intends to involve the private sector or establish the reform on complete financialization of the economy, then the capacity of the financial institutions must be a key consideration. In other words, the financial market must be well developed for diversified investment management (Holzmann and Hinz, 2005; Beck et al., 2000; Levine, 2003)

Where the financial market is undeveloped, the funded schemes require a gradual introduction. However, minimum conditions such as a few solid core banks and other financial institutions capable of offering reliable administrative and asset management services must be in place (Karacadag et al.,2003).

Further, the government must be committed to pursuing long-term sound micro-economic policies and financial sector reforms. The setting up of core regulatory and supervisory systems as part of the pension reform is also a necessary precondition. The role of government must be to ensure both fiscal and political sustainability of the pension system (Barr, 2002).

Fiscal stability is essential for the economic growth and viability of the funded schemes. Where private management of pension funds is part of the reform, preservation of public confidence in the private pension plans is essential. The attainment of confidence is through effective government regulation of the financial market to protect the contributors' interests (Barr, 2000).

Pensions are complex instruments, and therefore it is necessary to put in place carefully drawn up regulatory and supervising procedures. Highly skilled persons with the necessary capacity must be in charge as regulators.

Holzmann & Hinz (2005) have argued that experience of reforms in Latin America, Central, and Eastern Europe, in addition to much longer experience in OECD economies, have indicated the need for specific basic financial market regulations to be in place from the very beginning. It should be before introducing the reforms through mandated funded schemes.

Some of the basic requirements include licensing and capital requirements for service providers' complete segregation of pension assets from the other activities of the sponsors and management firms. The others are the use of an external custodian, application of broadly accepted and transparent asset valuation rules, and rate of return calculations (Vittas, 2002)

In addition, there must be in place controls of the market structures and portfolio choice, investment requirements, or specific predetermined limitations on asset categories. Portability rules, profitability, or minimum rate of returns requirements and guarantees must also be in place (Vittas,2000).

The World Bank (2005) has emphasized that undertaking a successful and sustainable pension reform requires a deep understanding of the political economy of reform. Three main phases of pension reform are involved, namely, commitment building, coalition building, and implementation (Orenstein, 2000).

The commitment-building phase is the first step. It involves getting all the relevant stakeholders in the pension reform debate. They must share the experiences of other countries, discuss the issues, disagree, and build consensus. The target group covers parliamentarians, expert policymakers, trade unions, and the media.

The coalition-building phase begins when the government decides to put forward the intended reform concept. Here government must ensure reform champions emerge to push and lead the reform agenda. At this stage, the government remains open to modifications to the reform concept. The basis of the reform must be on tested knowledge and other countries' experience with long-term propositions and sensitivity analysis.

It is necessary to subject it to opinion polls and focus group discussions to show the reform concept meets the genuine concerns and aspirations of the population as compared with the existing pension system. A successful coalition phase leads to the critical stage, the legislation passage, and marks the implementation phase.

The prior existence of the necessary administrative capacity and knowledge of best practices is also vital to meet the political readiness and sufficient administrative preparation before the reform's rollout. At this stage, there can be the management of common problems. However, political support for the reform must continue throughout its implementation to enable the complete success of the reform (Holzmann and Hinz, 2005).

A reasonable degree of political debate and the process of public discussion and information dissemination are significant to implementation success. Lack of or improper handling of public information on the reform has led to reform policy reversals because of inadequate awareness to ensure that citizens were adjusting in the right way (Chlon-Dominczak, 2000).

The extent of labor involved in pension reforms is also an area that requires careful consideration. If not well handled, labor unions could become obstacles to implementing pension reforms (Jgerenaia et al., 2014).

Capretta (2007) has noted that during the last decade and still currently, pension reforms have provoked clashes between reform-minded governments and strong trade unions. The role of unions in pensions is essentially high in some countries. The recognition of the involvement of Labour unions in pension matters occurred in some countries during the post-Second World War era (Beland, 2001).

Trade unions have been part of public pension systems in France and even have veto powers. Therefore, with such veto powers, there cannot be pension reforms without the active involvement of the trade unions despite the strong advocacy of economic policy advisors (Beland,2001).

The situation is different in countries like the US, where the labor unions are not involved in public social security or pension systems and therefore do not play a dominant role in pension reforms (Beland, 2001 p. 161 -162). They do not have veto powers in the politics of pension reforms in the US, as do their counterparts in France. The labor position seemed to protect their interest, mainly when the reform reduces benefits or changes in qualifying conditions (Whitehouse et al., 2009).

In sum, the implementation of pension reform entails challenges. The reform design and approach and process of implementation require a well-coordinated, focused, and continuous effort to achieve a successful implementation.

It is necessary to identify and distinguish emerging reform implementation flaws from the real reform challenges or reform flaws. It is critically important to communicate the challenges to the populace and all stakeholders to continue soliciting their support for the reform. There is a need for a greater understanding of the fact to enable the economic behavior of the citizens to change, and the state must engage with the citizens.

2.8. Evolution of pension framework and pension reforms in the Republic of Ghana

The Republic of Ghana, previously known as the Gold Coast, is located south of the Sahara in West Africa. It was a colony of Britain and achieved independence in March 1957 and changed its name to Ghana. By 2020 estimates of the Ghana Statistical Services, its total population stood at 31.07 million people from 30.5 million in 2019.

The working population in 2020 was 13.2 million. Out of this28.46% were in agriculture, 22.2% in industry, and 49.36% in the services sector.

The introduction of formal social security or pension system for workers was a post-Second World War (1939 – 45) phenomenon (Obiri –Yeboah & Hanson 2014). As far back as 1921, the Basel Mission set up an African Pension fund for its African workers in the United African Company on the Gold Coast (Appiah, 1999).

At the state level, it was after the Second World War that the colonial government of the Gold Coast adopted an international Labour Convention on workers' compensation of cash benefits to injured workers. It consequently passed the Pension Ordinance of the Gold Coast in 1946 (Gockel, 1996).

This ordinance set up a non-contributory pension scheme for workers described as African Senior Civil servants and their widows and orphans and children. In 1955 the colonial government passed the teachers' pension ordinance. The aim was to enable certified teachers to enjoy pension benefits provided under the 1946 pension ordinance. By this time, the senior members of the University of the Gold Coast (now the University of Ghana) also had a separate pension scheme.

In 1950, the British Colonial Government passed a Colonial Ordinance Chapter 30 (CAP 30). This Ordinance took retroactive effect from 1st January 1946 to consolidate the European Officers Pension Ordinance (CAP 29) passed in 1936 and the Pensions (Non-European Officers) Ordinance of 1936.

The purpose of the consolidation was to set up a less discriminatory uniform pension scheme for the benefit of both expatriate and indigenous civil servants of the Gold Coast. This consolidation came when the number of indigenous civil servants increased, and the agitation for independence had begun (Ashidam, 2011).

This development was the first administrative pension reform on the Gold Coast. It was an attempt to make the existing pension scheme benefit more indigenous civil servants. Thus, the improvement of pension benefits was not the purpose of the reform. On attainment of independence in 1957, and now called Ghana, the new government continued with the colonial legacy of economic development policy.

Labor migrations in search of wage employment in towns led to rapid urbanization. The migration separated the migrant workers from the traditional social security system offered by the then extended family system on the Gold Coast.

The new wage workers now became heavily dependent on the generosity of the employers in the urban areas. The negative impact of the socio-economic changes on the welfare of the migrant workers led to the establishment of the first social security arrangement in 1960 by the newly independent government.

The 1960 scheme was a compulsory savings scheme financed by compulsory deductions from wages and salaries of workers in the formal sector. The scheme set up by the National Compulsory Savings Act, 1960, was compulsory, and contributions deducted were paid into the government consolidated fund. Workers' entitlement at their retirement was the principal contributed plus interest.

There was poor education on the scheme for workers. The operation of the scheme was inefficient. There was poor record-keeping of contributors and contributions. The scheme eventually failed and was abolished in 1965.

2.8.1 National social security scheme in Ghana

In 1965, the government passed the Social Security Act 1965 to set up a national social security scheme for workers in Ghana. It created a provident fund scheme. Workers contributed 7.5% of the basic monthly salary to the fund. The employer was also required to add 15% of the worker's monthly salary, making 22.5 % each month.

The scheme's management was joint under the Department of Finance under the Ministry of Finance for policy and general administration of the schemes. The State Insurance Corporation was in charge of the inspectorate and operation of the fund.

The 1965 scheme adopted the ILO 1952 convention No. 102 provision and covered six benefits. They included superannuation, sickness, emigration, survivors, invalidity, and unemployment benefits. All the benefits were lump-sum benefits.

The 1965 Act promised the conversion of the provident fund into a pension scheme, but it never materialized. The one-time lump-sum payment became inadequate to provide for the needs of retirees and beneficiaries. It led to worker agitation through the labor unions. There was also a call to create one institution to manage the scheme (Obiri-Yeboah & Hanson,2014).

2.8.2 1972 and 1975 pension reforms in Ghana

A military government took over the affairs of Ghana in 1972. The new government decided to undertake a reform of the Social Security system. The new government promulgated the Social Security Decree 1972, NRCD 127.

This Decree, for the first time, created the Social Security and National Insurance Trust as a corporate body to be solely responsible for the administration of social security in Ghana. Workers in both public and government and those in the private sector became mandatory members of the scheme (Obiri Yeboah & Hanson, 2014).

It was mandatory for every employer who employed not less than five workers to register with the scheme and register all employees. The employer-paid contributions, in addition to contributions deducted from every employee's salary.

The scheme, however, continued to be a provident fund scheme. For the first time, all quasi-governmental and subverted organizations, including state-owned corporations, became compulsory members of the social security scheme.

All these workers were formally covered by CAP 30, the colonial pension scheme inherited and continued under the independent country. Thus, for the first time, a parallel scheme for the public sector workers came into being. These are the CAP 30, the social security scheme, and the separate scheme for the public universities in Ghana.

All public sector workers who had worked for ten years or more covered by the CAP 30 pension scheme had their pension rights for monthly pension preserved. They then started a new scheme under the new social security scheme.

Three years into implementing the reform introduced under the social security decree, 1972 NRDC 127, the military Government then in charge introduced another reform. This time, a Public Sector Workers Pension Amendment Decree, 1975, SMCD 8, was passed.

The purpose of the Decree was to introduce a unification of all existing parallel public sector pension schemes into one social security scheme created under the Decree 127 of 1972. It was a significant and fundamental reform that required proper planning and stakeholder engagements.

Under the unification reform, all public sector workers employed before January 1, 1972, and were put under the CAP 30 pension scheme were to remain under Cap 30. They were to retire under that scheme.

All public sector workers employed after January 1, 1972, and put under CAP 30 were to exercise an option within three months to either join the new social security scheme or remain under CAP 30. Anyone who failed to exercise the option got automatically treated as having opted for the social security scheme. The option once exercised was irrevocable. Again for those who exercised the option to remain under CAP 30, 5% percent of their salary was deducted monthly towards the pension under CAP 30.

The CAP 30 is non-contributory for all public sector workers. The payment of pension and other benefits came from government revenue. But for the category of workers of the same government who were employed after 1 January 1972 and put under the social security scheme and have opted to remain under CAP 30, they would now have to contribute 5% of their monthly salary for the CAP 30 pension. It was a significant effect of the reform.

Further, the CAP 30 and the social security scheme were different pension systems. The CAP 30 is a defined benefit scheme that pays a monthly pension which is adjusted upwards annually. It also pays a lump sum component of the pension to every retiree.

The social security scheme then was a provident fund scheme. It pays only a one-time lump sum benefit. Thus, the 1975 pension reform created a situation where for the same employer and sometimes in the same office or department or ministry, the same category of workers on the same conditions of service had different pension schemes.

The one under CAP 30 retires with a monthly pension and lump sum but does not contribute. The other who contributes towards his retirement under the social security scheme is paid only a lump sum due to no fault of his own. In some cases, the contributions paid under the Social Security Scheme were insufficient to generate any reasonable lump sum. The lump-sum benefit was the total contribution plus interest fixed by the government.

Further, by the law, the contribution could only be invested in government securities, and the government determined the interest rate. The financial and capital markets were underdeveloped and could not enable any retiree under the social security scheme to invest the lump sum benefit for any excellent future return.

There were no annuities to buy to enable the retirees under the social security provident fund scheme to obtain guaranteed periodic payments. Moreover, there was chronic inflation and depreciation of the local currency. The economy stagnated, and the military government instituted a price control regime.

These economic indicators clearly showed the extent of the erosion in the actual value of the lump sum paid under the social security provident fund system. The lump-sum could not sustain the retirees. Those who retired under the noncontributory CAP 30 received regular monthly payments and, therefore, were better off.

In addition, the provident fund scheme did not cover all workers and employers. Anyone who worked in an establishment with less than five workers was exempt by the law. In these circumstances, the worker's social security rights, as a universal right, were not enforced under the social security scheme.

Thus, old age destitution or poverty after retiring from work, hardship, and suffering by surviving spouses and children after losing a breadwinner intensified. The discrimination, injustice, inequality, hardship, and suffering created by the two pension reforms introduced by the military governments in Ghana in 1972 and 1975 led to labor agitations.

The military government responded to the concerns against the pension reforms. Instead of putting together a body to study the concerns and come out with solutions to eliminating the implementation flaws as well as the flaws of the reform itself, a choice of systematic withdrawal of workers of the various public institution from the social security provident fund scheme commenced.

By 1987 five public institutions were withdrawn from the social security provident fund scheme and put back on the financially unsustainable CAP 30, which was the reason for the unification in 1975. The institutions were; police service, prison service, public legal officers, immigration service, and national security and intelligence service. Despite the withdrawal of these institutions, the bulk of public sector workers and all private-sector workers remained under the social security scheme.

All the inequalities and the financial and economic circumstances that had rendered the benefits paid under the provident fund social security scheme continued unabated. The agitation of public sector workers under the social security scheme also continued.

This segment of the public sector workers, including the new additions and the institutions withdrawn from the social security scheme, continued to enjoy their monthly pensions adjusted every year under CAP 30. It was in addition to their lump sum all paid from government revenue under the CAP 30 pension scheme.

Gockel and Kumado (2003) have argued that the provident fund scheme under the social security scheme was nothing but a compulsory savings account. It was so because the government imposed a 3% compound interest rate that did not give accurate rates of returns to the funds contributed by the workers.

Thus, payments made out of the fund were essentially from the beneficiaries' savings. This development and the other factors already stated intensified the dissatisfaction among the rank and file of unionized labor to call for the return of all public sector workers to the financially unsustainable CAP 30. Alternatively, the conversion of the provident fund social security scheme into a pension scheme as applicable under CAP 30 also came high on the agenda of the labor unions.

2.8.3 1991 pension reform

In the 1980s, the military government had agreed with the World Bank and the International Monetary Fund to undertake market economic reforms. Demand and supply will drive economic decisions in the country. Implementing some of the market-led strategies to achieve economic growth brought about more social hardship and compounded the problems of social protection in Ghana (Gockel & Kumado, 2003).

The economic policies that affected social protection include; minimal state intervention in economic activity with deregulation policies and divestiture of state-owned enterprises, and stabilization and structural adjustment policies. The others were the liberalization of domestic and foreign trade that involved the removal of price and distribution controls by the franchise.

Further, there was the removal of state subsidies for goods and services. There was an introduction of reward for performance based on efficiency and cost-effectiveness in the production and delivery of goods and services in the public sector. In addition, exit policies such as redeployment, retrenchment in the public sector, wage restraints, revision, and transfer payments were introduced (Gockel & Kumado, 2003).

These economic policy reforms reversed the early years of economic decline. However, inflation was still high compared with the local currency depreciation, which continued to erode the incomes of workers and pensioners.

These developments and the inequalities led to further agitation. The government, therefore, in 1991, decided to convert the social security provident fund, which started in 1972, into a pension scheme.

The government promulgated the social security law, 1991, PNDC Law 247 to set up a social insurance pension scheme for all Ghanaian workers. The scheme came into being on social insurance principles, including risk pooling, solidarity, and the contract of generations.

It is compulsory for all employers and employees in every establishment in Ghana unless expressly exempted by the law. Under the scheme, the workers contribute 5% of the monthly salary, and the employer adds 12.5% of the salary on behalf of the worker to finance the retirement benefit.

The minimum contribution period to quality for monthly pension was 240 months or 20 years. Monthly old age pension and a lump sum component, invalidity pension, and survivors lump sum benefits were the three main benefits introduced under the new pension system.

Thus, for the first time, the inequality among public sector workers' pension system under CAP 30 and the social security scheme, which was the monthly pension, was resolved by the reform. In addition, a lump sum component of the retirement income was also now available under both systems

Annual adjustment of monthly pension amounts through indexation based on wage inflation became applicable under the new 1991 social security system. The adjustment followed the annual adjustment of salaries of active workers as applicable to CAP 30 retirees (PNDC Law 247).

There were significant or sharp differences from the very inception of the 1991 reform, which later became another source of significant agitation. The social security pension scheme depends on actuarial principles in determining its financial sustainability. The formula for the computation of pension also depends on the period of contribution and average of three best annual salaries of the worker.

The lump-sum component of the pension is the equivalent of 25% of the total pension right earned by the worker. Under CAP 30, however, there is no actuarial implication or application. The benefit formula is just ten years or more of continuous work without blemish.

The monthly pension is 50% or 60% of the current salary of the same grade or level the worker retired. The terminal salary of the worker is the main factor in calculating the lump sum of the CAP 30 pensioner.

Over time, the disparity between the 25% lump sum paid to retirees under the social security pension scheme and the lump sum paid to CAP 30 retirees became wide. The resulting disparity became a disadvantage to public sector workers of the same government contributing under the social security pension scheme. They were instead getting a lesser lump sum, and those on CAP 30 who were not contributing got a better lump sum.

By the year 2000, the agitation by public sector workers for reform had no response. There were calls by public sector workers to be allowed by the government as the employer to join the CAP 30 financially unsustainable scheme. The disparities in the lump sum amounts became unjustifiable.

In 2004 (PCP, 2006), the government, now a democratically elected one, responded by appointing a presidential commission in 2004. The terms of reference were to study the pension industry in Ghana, find out about the causes for the agitations and recommend a way forward for pension reform in Ghana.

2.8.4 2010 pension reform

The Presidential Commission on pensions presented its report to the government in 2006. By a white paper issued in July 2006, the government accepted the commission's recommendations to carry out significant pension reform in Ghana. The pension model proposed for the reform is the World Bank Multi-Pillar system.

The National Pensions Act became law in 2008, but it started in January 2010. The Act introduced a new three-tier pension scheme. The first tier is the Basic National Social Security Scheme (BNSSS), managed by the existing state social security (SSNIT).

i. **The first-tier**

The first tier structure continues as a mandatory contributory social insurance defined benefit scheme. It is responsible for the payment of only the monthly pension of the worker during retirement. Its funding is from contributions and investment returns. All the benefit packages, namely Old age pension, invalidity pension, and survivor's lump sum under the 1991 scheme, continue under the new scheme.

The only new introduction is an emigration benefit payable to a non-Ghanaian member of the scheme who has left Ghana or is about to leave Ghana permanently. In such a situation, the non-Ghanaian receives the pension earned as a lump sum.

The minimum entry age is 15 years, and the maximum age is 45 years. The maximum age is determined because it takes 15 years minimum contribution period to qualify for a monthly pension.

The qualifying conditions for a benefit, including age 60 for compulsory retirement and 55 for voluntary retirement, are retained. The minimum period of contribution to qualify for a monthly pension got reduced from 240 months or 20 years to 15 years or 180 months.

Where a worker is not able to contribute for the 15 years to qualify for a monthly pension, such a worker receives a lump sum equivalent to the total contribution plus interest at 75% of the Government TB rate compounded from the date the worker joined the scheme up to the date of retirement.

Further, 4% out of the original contributions of 17.5 %, meant for the state social security scheme, was ceded to the second tier. This portion of the contributions serves as part financing of the lump sum component of the pension under the second tier. Furthermore, the reform legislation introduced an additional 1% of the workers' basic salary to increase the rate to 5% as the total contribution for the second tier.

The first tier scheme also transfers another 2.5% of the original contribution of 17.5% to the National Health Insurance Scheme towards the workers' healthcare. Thus, only 11% of the original contribution remains with the first tier to finance the worker's monthly pension during retirement. The contributions are paid monthly and are deducted at source from the payroll by every employer.

Non-payment of the contributions on time or failure to register a worker with the scheme constitutes offenses that attract a fine and a term of imprisonment in addition to payment of the unpaid contribution with a penalty of 3% per month. Those working independently in the informal sector can also join the first tier as voluntary contributors. A voluntary contributor also pays the same rate of contribution on the income declared and enjoys the same benefits.

ii. **The second tier**

The second tier of the new three-tier scheme is a fully funded defined contribution scheme that is occupationally or work-based. Its management is private. That is part of the privatization and financialization introduced into the 2008 pension reform in Ghana.

It is a compulsory scheme for all workers who are also mandatory members of the first tier. The second tier is now responsible for paying the lump sum component of the retirement income. It replaces the 25% lump-sum under the 1991 social security reform.

The contribution is 5% of the worker's monthly salary. The lump-sum benefit is the contribution plus accumulated returns over the worker's working life. Non-payment of the contribution on time generally by the 14th day of the month constitutes an offense on the employer's part. The penalty is a fine or a term of imprisonment in addition to payment of the unpaid contribution plus a contribution surcharge of 3% per month.

The second tier is compulsory also for all employees aged 45 years and above and employed for the first time. The first and second tiers contributions of such a worker go to the second tier scheme. On retirement, the benefit is a lump-sum. However,75% of the lump-sum benefit is to be used to buy an annuity for a guaranteed period of 20 years to enable such a worker also to get a monthly pension. The remaining 25% of the total benefit goes to the worker as the lump-sum component of the pension.

The performance of the market determines the level of the benefit. The investment and market risks are on the worker. The benefits are paid on retirement at the compulsory retirement age of 60 or on voluntary retirement at age 55 or on the declaration of invalidity or paid to the worker's dependants on the worker's death.

A new class of benefits introduced is an emigration benefit payable to a non-Ghanaian worker on exiting the country for good. It is also possible under the second tier for a worker who has become unemployed at age 50 and above to apply for the second tier lump sum benefit. These two benefits were not available under the 1991 social security reform.

iii. **The third tier**

The third tier is a voluntary personal pension and provident fund scheme. Its management is private. And it is a fully funded defined contribution scheme. It is a scheme meant for workers covered by the first and second mandatory tiers and self-employed workers in the informal economy sector to join and contribute according to their financial ability.

The third tier voluntary personal pension and provident fund schemes of Ghana's three-tier pension scheme follow the fourth voluntary pillar of the World Bank Multi-Pillar system.

It is voluntary and open to workers in the formal and informal economies in the country. It is also open to non-residents who wish to join. The management of the third tier and the second tier is part of introducing privatization in the pension system in Ghana.

Even though the third tier is voluntary, it also aims to provide opportunities for the informal sector workers to join the pension system. Thus, nationals and foreigners working in Ghana can join the third tier.

Further, it is a defined contribution plan but involves a retirement account and a withdrawal account for each member. A member in the informal sector can make withdrawals from the withdrawal account. The retirement account remains intact until the member obtains the compulsory retirement age of 60 years and above or at 55 years on early retirement.

The dual account system applies to only workers in the informal sector. Most formal sector workers are already part of the mandatory first and second tiers of the three-tier system. So for their category, their monthly pension is guaranteed by the first tier in addition to the second tier lump sum.

On retirement, the informal sector worker under the third tier voluntary scheme who wants a monthly pension is required under the law to buy an annuity from an insurance company licensed by the National Insurance Commission of Ghana. The minimum guaranteed period of the annuity is 20 years.

There are tax incentives to encourage participation. A maximum of 35% of a worker's income is contributed to the first and second tiers, and the third tier voluntary scheme attracts a total tax relief of 35%. For the first and second tiers, the tax relief is 18.5% and 16.5% for the third tier.

The three-tier scheme also introduced a healthcare benefit through the National Health Insurance Scheme. All workers under the first tier scheme must pay 2.5% of their monthly contribution to the National Health Insurance Scheme. It is done through a transfer from the first-tier scheme to the health insurance scheme.

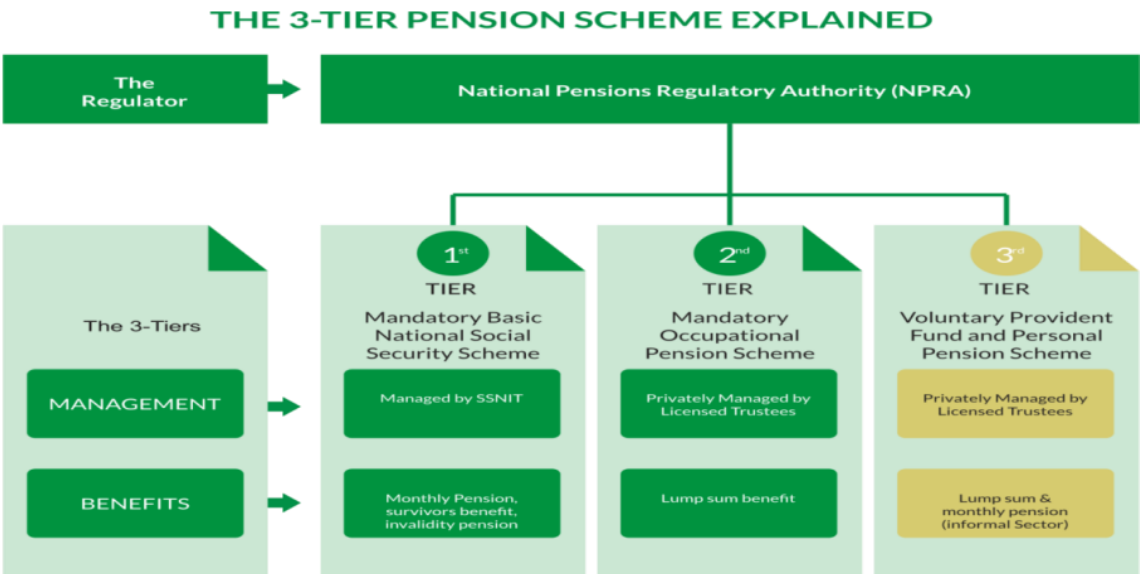
By this arrangement, the worker enjoys healthcare under the health insurance scheme during active service and retirement without paying any additional premium. Similarly, the three-tier scheme also introduced a dimension to facilitate a solution to the housing needs of workers.

By this, the worker can use the future lump sum benefit under the second and third tiers to secure a mortgage loan to acquire a dwelling house.

The worker acquires the dwelling house while working and makes regular payments to the mortgaged company. The additional security of the future lump-sum provides comfort to the lender and ensures that the worker does not lose where to lay their head in retirement.

The 2008 reform also introduced a national pension regulatory authority to regulate and supervise all three schemes. Other service providers such as private trustees, fund management companies, and custodians of pension fund assets are licensed, regulated, and supervised by the new regulatory authority. Table 4.4 shows the structure of the three-tier scheme.

Table 4. 4 Structure of the three-tier scheme.



Source: Constructed by the researcher for this project.

In addition to regulating and supervising the first tier, the NPRA has registered 81 employer-sponsored second-tier schemes and 25 master trust schemes to manage the second and third-tier schemes privately. Forty fund management companies and 17 custodians have been registered and licensed by the NPRA to manage the new three-tier pension scheme. (NPRA webstite.npra.gov.gh 2020).

The regulatory model is one dedicated body with all the required competencies and skills put under one umbrella to regulate and supervise the pension industry in the country. To ensure maximum collaboration and coordination due to the privatization and financialization, the pension regulatory body NPRA includes the heads of the Securities and Exchange Commission, which regulates the capital market, and the Central Bank (Bank of Ghana), which regulates financial services, including banks.

The functions of the regulatory authority include; regulation and supervision of all the three schemes of the three-tier scheme, registration of private pension schemes, licensing of trustees to operate the private schemes and fund management companies, custodians, and other service providers in the pension industry. Others include advising the government on the welfare of pensioners and pension matters generally, public education on the three-tier scheme, revocation of licenses of service providers and trustees' and imposition of administrative fines on trustees and other service providers for regulatory breaches.

For the first time in the country's history, all pension schemes, whether public or private, are to be managed by trustees. The board of trustees must be knowledgeable in principles of social security, pensions, and trust law principles applicable to pensions. They are accountable to the scheme members, and the regulatory authority supervises their activities.

The private management of the second and tier is a tripartite arrangement. Each board of trustees must have an independent trustee who reports to the regulator. The trustees are in charge of the scheme, but they are mandatorily required to have a separate fund management company to advise on the investment of the pension funds.

They must also have a custodian like a bank that keeps all the fund assets and only moves them to invest, pay scheme-related expenses, or pay approved benefits. The trustees, fund managers, and custodians report to the regulatory authority concerning their duties regarding every scheme.

Regarding investments, the requirement is that the second and third-tier schemes should invest in areas approved by the regulatory authority. The authority issues investment guidelines prescribing the areas of investment and the maximum limits of exposure for each class of investment.

The first tier and the second and third-tier schemes are mandated to keep and periodically review investment policy guidelines to guide the funds' investment. The investment policies of the schemes must follow the general investment policy guidelines issued by the regulator.

The regulator conducts onsite inspections and demands the submission of annual and other periodic reports from the schemes on their activities. Regulatory issues raised must be responded to by the trustees, fund managers, or custodians. They must comply with the regulatory directives or risk sanctions or revocation of their licenses if serious breaches occur.

Another striking feature of the 2008 reform is introducing a plan to unify all public sector parallel pension schemes into the three-tier pension scheme, except the pension scheme for the Ghana Armed Forces. Under the National Pensions Act, 2008, Act 766, eight parallel public sector pension schemes will be merged into the new scheme within five years from January 2010.

The schemes are the CAP 30 1950 Civil Servants pension scheme, 1955 Teachers' Pension Ordinance, the 1991 Social Security Pension Scheme, Ghana Police Service Pension Scheme, Prison Service Scheme, National Fire Service Scheme, and Immigration Service Scheme. The rest are Security and Intelligence Services Scheme, Public Legal Officer's Scheme, and the Public Universities Superannuation Scheme.

Regrettably, the implementation of the unification has failed. Information gathered during the study from reports of the NPRA revealed that the process has stalled due to the agitation of the workers of the public institutions involved. They do not want to be part of the three-tier scheme because of the inadequacy of benefits compared to benefits under the current public sector parallel pension schemes, including the CAP 30.

The implementation of the new scheme commenced on 1 January 2010. The first beneficiaries were to be paid their pension benefits under the new scheme in 2020. The performance of this new pension reform in terms of whether or not it has achieved its primary aim of bridging the gap between the lump sums under the social security pension scheme and that of the CAP 30 and thereby ultimately improving benefits under the three-tier scheme is evaluated in Chapter 4 of the study.

Further, the presentation section of Chapter 4 also includes full features and detailed discussions, analysis, and comparisons of the various pension reforms in Ghana. It is presented sequentially from 1950, 1965,1972,1975,1991 up to the current three-tier scheme, which commenced in 2010, and the challenges of insufficiency of pension benefits that emerged in 2020 after the payment of full pension benefits to the first more extensive group of retirees.

2.9. Conclusion

The chapter reviewed the relevant literature that provides the theoretical foundation of pension reform. Also discussed were the definition and meaning of the concept of pension reform, types of reforms, and the theories underpinning pension reforms.

Other areas highlighted include the causes and triggers of pension reforms and implementation approaches of pension reforms. The review reestablished the gap in the literature that the thesis seeks to address, namely, whether pension reform leads to improved pension benefits.

The evolution of pensions and pension reforms in Ghana, used as the case study, was also briefly discussed as a prelude to the study. The main features of the new three-tier pension, major pension reform in Ghana in 2010, were also highlighted. This conclusion of the literature review naturally leads to the next chapter, which discusses the methodology employed in the study.

Chapter 3 Research Methodology

3.1. Introduction

This section provides information on the processes undertaken in the study to address the research objectives. It explains the research paradigm, research approach, research design, and the study population.

Further, it provides a detailed breakdown of the study sample size and sampling technique for the research and sources of data and data collection tools. The Chapter also discusses the procedures used in data collection, management, and analysis.

Research methodology is a scientific and systematic approach to answering a research question through a practical framework (Saunders et al., 2009). Therefore, the main goal of research methodology is to design and set out a plan to achieve the research objectives, such as data collection and analysis (Creswell & Clark, 2010; Golatshani, 2003). Choosing the correct methodology from a wide range of options that suit particular research and help achieve the research objectives is always a researcher's primary task (Chen & Hirschheim 2004). A suitable research method and design is thus a prerequisite for successful research implementation.

3.2. Research paradigm

The basis of the research is philosophical assumptions related to the researcher's views or perception of reality (Turyasingura, 2011). According to Jonker & Pennink (2010), a research paradigm is a set of fundamental assumptions and beliefs about how the world is perceived, providing a thinking framework that guides the researcher's behavior.

Kuhn (1970) describes research paradigm as established principles, standards, and procedures that guide. It dictates the kind of problems to address and the type of suitable descriptions.

Saunders et al. (2007) also described research paradigm as the methods of advancement and nature of knowledge. It suggests that adopting a particular research paradigm depends on some fundamental assumptions of the person's view of the world. In other words, an individual's viewpoint of the world determines the appropriate research approach and strategy to be adopted.

A research paradigm governs the criteria a researcher uses in selecting and defining problems for investigation. It determines how a researcher follows them intellectually and methodically but at the same time provides a framework on how a problem is formulated and systematically addressed (Kuhn, 1970; Shannon – Baker, 2015).

A research paradigm impacts how information is studied and understood by identifying the relevant factors and connecting them to the research process (Mertens, 2014). Thus, selecting a paradigm sets a motive, the impetus, and the research prospects. (Mertens, 2014).

As part of the initial steps in the process, the research paradigm sets the foundation that guides the methods, literature, or research design. (Creswell, 2014). Saunders et al. 2007 explain three significant ways of thinking about a researcher's selected paradigm.

These are ontology, epistemology, and axiology. The ontology describes how a researcher views reality and how society operates. In other words, it is about what exists for people to know. Epistemology, on the other hand, is the study of knowledge. It is concerned with the validity, scope, and methods of acquiring knowledge (Moon & Blackman, 2014). Axiology, however, is the study of the nature of values. It includes ethical and aesthetic values and other forms of values (Deane, 2018).

Creswell (2014) also explains several theoretical paradigms, including interpretivism, positivism, and critical realism. Fisher (2010) indicates that interpretivism views multiple realities that create reality socially.

Therefore, by interpretivism, researchers aim to go beyond the observable actions of people in the context of social phenomena. They appreciate the subjective meanings they give to their efforts by interpreting and understanding the reasons behind those actions (Newman, 2011).

The positivist principally learns about reality so that the general laws that rule fact can be revealed and explained to describe, predict and control reality (Kaplan and Duchon 1988). On the other hand, the critical realism paradigm holds that people's perceptions can change. Therefore there are differences between reality and people’s perception of reality (Bisman, 2002).

This study adopted the interpretivism research paradigm approach to identify and analyze the impact of pension reforms on pension benefits. This approach assumes empirical and systematic exploratory procedures of the qualitative technique to provide a framework to explore the phenomenon of pension reforms and key themes concerning pension reform and its effects on pension benefits paid to individual retirees.

As Fisher (2010) argued, the interpretive approach allows applying various interpretations and construction of reality and establishing a pattern based on participants' lived experiences. It is achievable through theme identification.

Consequently, the study used the interpretive paradigm, which enabled shared experiences of retirees in Ghana. It was required to ascertain a universal lived experience of pension reforms and how these various pension reforms implemented in Ghana impacted retirees' pension benefits.

Further, justification of the choice of interpretivism for the study stems from the fact that the researcher needs to understand the differences among humans as social actors. It also emphasizes the difference between conducting research among people and objects. (Saunders et al., 2009).

Moreover, Hennink et al. (2011) are also consistent with the view that because human perspectives and experiences are subjective, social reality may change and can have multiple perspectives. Thus, using the interpretive model, in-depth personal encounters with the participant retirees served as a rich primary source of data necessary to achieve the research objectives specifically rather than over-generalizing (Newman, 2011).

3.3. Research approach and design

This research uses an empirical setting to investigate the theoretical and practical pension reforms drawn from the literature and test their impact on pension benefits through hypothesis. This process will require some amount of quantification of data (Malhotra,2002) and exploration through qualitative information to generate an insight to validate the findings.

Three significant research methodologies comprised qualitative, quantitative, and mixed methods used in research approaches. Creswell (2014) explains a qualitative research approach where the researcher often claims knowledge based primarily on the multiple meanings of individual experiences socially or historically constructed.

The researcher then intends to develop a theory or pattern or advocacy or participatory perspectives on the relevant issue. From Leedy and Ormrod's (2010) standpoint, qualitative research answers questions about the complex nature of phenomena to describe and understand the sensations from the respondent's point of view.

The qualitative research method emphasizes exploring the genuine interest of a complex situation that cannot easily quantify. It is a subjective approach to finding an answer to the research question (Beedles, 2002). The qualitative data contribute to a quantitative interpretation (Fielding & Fielding, 1986).

It can also provide intricate details of a phenomenon that is impossible to compose through quantitative methods (Strauss & Corbin, 1990). This present research combines both qualitative and quantitative techniques to supplement the quantitative information gathered.

There are limitations to the qualitative techniques. These include the fact that the method is not an approach to quantifying data. It cannot produce rich and complex data. It is challenging to build a direct theoretical specification, leading to a generalization of findings (Beedles, 2002).

The quantitative technique explores the scientific inquiry of the phenomena and answers the question based on measured variables to explain, predict, or control a phenomenon. It provides a concrete answer to the research question scientifically, which is defined objectively and measured through statistical tools (Rosner, 1990).

The quantitative approach also has inherent limitations. It includes is not designed to reveal rich details of a unique phenomenon. It is not suitable for subjective experiments (Beedles, 2002). Finally, it is not helpful to compile a historical process involving changes (Morgan & Smircich, 1980).

Creswell (2003) describes the mixed method as a combination of the qualitative and quantitative approaches. The mixture is adopted to draw the strengths of both techniques. Combining both methods in this study will enhance the quantitative output with rich interview data and thus be more beneficial than using either.

Further, the quantitative outcome focuses on an in-depth investigation (Beedles, 2002). It is also consistent with the view of Yin (2011), who argues that the qualitative method can represent the thoughts and perceptions of respondents.

Combining the two approaches in this study did not only overcome the limitations inherent in both. It also enabled the quantification of pension amounts paid to retirees under the various pension reforms implemented and the individual experiences of the retirees in Ghana as the case study. It will also position the thesis to achieve the research objectives.

The study adopted the phenomenology research design for the thesis in terms of design. It is an approach to qualitative research that focuses on the commonality of a lived experience within a particular group. Its purpose is to illuminate, specify and identify the phenomena through how the actors in a situation perceived it (Creswell, 2013).

Through this process, the researcher can create a universal meaning of the event, situation, or experience and arrive at a clearer understanding of the phenomenon. Johnson and Christenson (2008) refer to phenomenology as descriptive and interpretive research that focuses on participants' lived experiences.

It defines the traits of one or several individuals of the lived experiences of the phenomenon (Creswell, 2007). Further, it seeks to answer the questions about the meaning, structure, and essence of the lived experiences of the wonder by an individual or individuals (Johnson & Christensen, 2008).

The phenomenology approach is one of the most frequently used. It is a superior study design where data collection on the respondents' experience is conducted on sampled population or representative subset (Johnson & Christenson, 2008).

In practice, a group of individuals who have first-hand knowledge of an event, situation, or experience participates in the interview. The discussion attempts two broad questions (Moustakas, 1994). They include experiences in terms of the phenomenon and what contexts or situations influenced the affairs of the phenomenon (Creswell, 2013).

This approach could also use other forms of data such as documents, observations, and art to develop themes and form a cluster of meaning. (Creswell, 2013). Thus in this study, exploring the perception and experiences of individual retirees and groups such as the Pensioners Associations, who have been beneficiaries of several pension reforms in Ghana, will provide excellent primary data for the research.

It is because they have experienced it in common. Therefore, the best respondents to narrate whether pension reforms in Ghana improved pension benefits over the years.

Again, the research adopted a case study design and selected the republic of Ghana because the country has had several pension reforms (1965, 1972, 1975, 1991, and 2010). However, the agitation and pressure to do further reforms always come up after every successive overhaul. The cause or source of complaint had always been the inadequacy of the pension benefits.

A case study design is appropriate when there is a need to understand and gain insight into grey or complex issues (Gerring, 2007; Baxter & Jack, 2008). Further, case study research attempts to study the subject matter in context using empirical material from multiple sources (Myers, 2013).

This study seeks to understand pension reforms in Ghana and their impact on benefits paid to retirees by using evidence from individuals, groups, and various institutions as published in reports and other national sources. Therefore the case study design was very appropriate.

In addition, Baxter and Jack (2008) have argued that a case study approach aids the exploration of a phenomenon within its context using a variety of data sources. It is also consistent with Yin (2012), who believes that a case study approach facilitates a deeper investigation of a real-life phenomenon in its natural context.

Furthermore, the definition and selection of a case to be studied is crucial in case study research. A case could be an object such as a country, organization, or individual. It could also be an event, program, or process observed at a particular time or over some time, place, and context (Creswell, 2003; Gerring, 2007; Miles & Huberman, 1994).

It is the reason for selecting Ghana for the case study. A sequential account of the evolution of pension and pension reforms covering the period 1965 to 2010, totaling 45 years, was presented in Chapter 2.

3.3.1. Quantitative research design

As noted earlier, quantitative techniques can measure specific characteristics through structured data collection procedures. A large representative sample could do it and project the result to the entire population (Davis, 2000) and, in this case, the retirees population in Ghana.

The main advantage of this approach is to provide a specific answer to the research question through gathering and analysis of information that can aggregate from the survey data (Beedles, 2002). The quantitative data in empirical results can be generalized even though it covers only a relevant portion of the study area.

For instance, the empirical setting tested in a middle-income country like Ghana can be inferred from another middle-income or developing country. This research design also underscores the inference drawing models that confirm the consequences of relationships or hypothesized relationships.

The testing of the proposed model is in Chapter 4 of the study. Testing the hypothesis combines qualitative information from the case study and interviews.

3.4. The research procedures

This section discusses the population of the study, response rate, and unit of analysis. It also discusses the data sources or information selection, measurements, research instruments, data collection, and data analysis.

3.4.1. Sources of data and data collection stools

The study relied on two main sources of data, namely primary and secondary data. The primary source was mainly through interviews of various groups of retirees, leaders of trade unions, officials of the pension schemes, and focus group discussions of retiree associations.

In addition, the study also used archival materials and publications in the print media about the activities of trade unions. It used retirees about their concerns about the level of pension benefits. The in-depth interviews offered the opportunity to understand the meaning of the concerns and behavior of the respondents.

It is consistent with Seidmen (2012), who noted that a fundamental assumption in in-depth interviewing research is that people's meaning of their experiences affects how they carry out that experience. In the view of Wilson (2014), interviews can engage in verbal communication and provide exciting insights into the feedback and general behavior of respondents.

Interviews, therefore, allow respondents to answer questions in an in-depth way. It also grants them the leeway to give more information on specific questions and key themes.

The secondary sources to augment the primary data included reports and publications of relevant national and international institutions, media publications, and the internet. The use of secondary data saves resources, especially time and money (Ghauri & Gronhaug, 2005).

It is also easier to analyze more significant data obtained from government surveys or other relevant public institutions. Saunders et al. (2009) have also indicated that it provides an unnoticeable measure because secondary data exists.

On the contrary, Denscombe (2007) believes that could have gathered secondary data for a specific purpose with a different research question and objective from one's study. However, secondary data was very relevant for this study, notwithstanding these setbacks.

3.4.2. Population and sample of the study

Pension reform is an ongoing worldwide phenomenon because the pension is relevant for every country. As can be gleaned from the literature, various factors regarding the causes of the reforms, triggers, the approach, and implementation of the pension reforms differ from country to country.

There is, therefore, the need to restrict the interacting variables in a uniform environment to eliminate the macro-environmental diversity among countries. In this way, the data collection can be a relatively homogeneous environment analyzed and tested to determine the research objective (Amine & Cavusgil, 1986).

A study population comprises all the elements that compose the unit of analysis (Terre – Blanche et al., 2006). It is defined as the totality of all forming the entire group of persons interested in the researcher and to which the research results can be generalized (Polit & Hungler, 1999). Wilson (2014) also describes a research population as the entire set of cases drawn from a sample.

The study population is the retirees of the state social security scheme of the Republic of Ghana, which has undertaken five major pension reforms within 46 years (1965 – 2010). The researcher has worked in the pension industry in Ghana as a pension administrator for over 20 years, hence Ghana's selection for the case study. He contributed immensely to designing and implementing the three-tier pension scheme in Ghana.

He has also been a resource person at various pension programs in Ghana and other African countries. He is, therefore, familiar with the environment and can facilitate access to relevant data. The choice of Ghana, a middle-income country, also provides the opportunity to use data from a less developed country in a study for a possible generalization.

A significant feature of any research is the sample size. The primary purpose of the sample size is to make inferences about a population from a sample. Onwuegbuzie and Collins (2007) argue that the choice of sample size is as crucial as the sampling technique.

To Creswell (2009), a sample is the selection of all impartial or random subjects of individual observations intended to yield some knowledge about the population of interest. The sample size also determines the extent to which it can make appropriate statistical and or analytic generalizations. The primary aim is to make predictions based on the sample frame exclusively.

The argument is that there is no defined answer to what constitutes an acceptable or sufficient size of a sample (Fraenkel & Wallem, 2000). In practice, however, the need to gather adequate salient information is also influenced by the cost of data collection. Therefore, the sampling price must be fair and sufficient to serve the needed purpose.

On the other hand, the formal and sophisticated statistical analysis recommends sampling 200 as fair and 300 as good (Tabachnick & Fidel, 1996). In addition, Hair et al. (1998) suggested a sample size of 200 to test a model because 200 is a critical sample size that can use in any standard estimation procedure for valid results (Hoelter, 1983).

The sample size for the study comprises 200 each of two groups of retirees under the pension system in Ghana. This sample size is considered sufficient to satisfy the statistical recommendation for the proposed hypothesis testing and analysis. However, Aaker et al., 2001, argue that using a comparable and similar current study sample size is recommended as a guide with a satisfactory level of reliability.

The two groups of retirees originally belonged to the same pension scheme, which came into being due to the pension reform implemented in Ghana in 1991. Following another pension reform in 2010, those 50 years of age as of 1st January 2010 migrated onto the 2010 pension reform scheme, which introduced a three-tier pension system. The high expectation was that the 2010 reformed scheme would provide better pension benefits than the 1991 pension reformed scheme.

The researcher developed the sample frame from the list of retirees kept by the state national pension scheme (SSNIT), mandatory for all private and public establishments unless expressly exempted by law. To determine the lump sum component of the pension benefit paid to the 200 retirees under the three-tier scheme, data of retirees of a privately managed second-tier scheme, NTHC Trustees Limited, were selected for the study.

The first tier, organized by the national pension scheme (SSNIT), pays monthly pensions under the new three-tier pension scheme. The second tier is mandatory for all workers, both private and public establishments. It is a privately managed occupational scheme responsible for paying the lump sum portion of the pension benefits during retirement.

Therefore proper verification of the list of respondents was done to ensure the selection of retirees as the valid respondents as a sampling frame. The specific sampling strategy combined purposive, convenience, and stratified techniques to select the retirees' respondents.

A purposive approach is where the researcher deliberately selects subjects who, in their judgment, are pertinent to the topic or issue under investigation (Savantakos, 2005). This sampling method is a non-probability sampling method with the specific goal of fulfilling the objective of a qualitative approach to research. It focuses on identified characteristics of the population under study to obtain the requisite answers.

Another method used is convenient sampling. It is a process of getting respondents who are most conveniently accessible (Boateng, 2014). The study adopted this method in choosing the interviewees because they have first-hand information and experience, and relevant knowledge about pension benefits paid under the pension reforms implemented in 1991 and 2010 in Ghana.

The retirees under the two reform schemes are scattered all over the country. The majority are in the urban centers. Especially the capital city. All the retirees belong to branches of the National Pensioners Association.

Stratified sampling was the third technique. A random sampling technique requires breaking down the population into relevant strata or important divisions based on their inherent attributes (Agresti & Finlay, 2008; Creswell, 1998; Patton, 2002; Saunders et al., 2009). The researcher conducted the research in the capital city, so the participants were selected from Accra, the capital city of Ghana.

The stratified sampling method ensures the inclusion of categories of pertinent characteristics which accurately reflect the population. Each stratum also consists of the same character of interest, which facilitates a systematic random sampling procedure (Davis, 2000; Malhotra, 2002). This technique ensured the selection of participants from the two pension reforms and officials administrating or managing the schemes.

A unit of analysis refers to the extent to which the level of investigation of collected data focuses specifically on the object of the inquiry, namely, the individual’s activity, venture, organization, or group (Sekaran, 2000; Zikmund, 2000). In terms of the unit of analysis, the basic theory of the study is pension reform. The main objective is to determine whether pension reform improves pension benefits.

Thus, in this study, the unit of analysis is the specific relationship between pension reform in Ghana (as a case study) and its impact on pension benefits. The intention is to capture the pensioners' or retirees' experiences and perceptions about these pension reforms.

3.4.3. Data validity and reliability

The data collected through interviews, survey questionnaires, and focus group discussions were subjected to the necessary tests to guarantee data accuracy and reliability. The study further adopted a combination of triangulation and respondents validation due to the nature and objective of the study.

Different methods ensure the validity and reliability of data. Some have been categorized as interpretative, descriptive, theoretical, internal, and external (Boateng, 2014). Lacey & Luff (2001) also suggested the triangulation and respondents' validation methods.

The process in which the researcher contacts the respondents to confirm the correctness of the information provided by the respondent is the validation method. Further, the validation method seeks comments from respondents. (Lacey & Luff, 2001). On the other hand, triangulation collects and examines data from several sources to understand the phenomenon under study based on the research question or setting.

Lacey and Luff (2001) argue that data had to be collected from various sources to gain diverse perspectives on the same situation to engage in effective triangulation. Boateng (2014) also posits that triangulation requires numerous sources in a single study. It helps identify discrepancies within the data collected and prompts further analysis or investigation.

Thus data collected from other secondary sources

confirmed the data obtained through the various sources. They include reports of the relevant pension schemes in Ghana. The national pension regulatory authority (NPRA), national newspaper publications (some attached as appendices), and further checks with top officials of the Ghana Trades Union Congress (TUC) and the FORUM, which are active labor unions in pension matters in Ghana.

The survey questionnaires were administered and collected at the association meetings held in smaller groups due to COVID-19 protocols. Therefore, to confirm the views of their members, the researcher contacted the national officers of the Pensioners Association. Thus, data validity and reliability received adequate attention.

3.4.4. Data Collection

The case study focused on Ghana. The purpose of the study is to ascertain whether pension reform leads to improved pension benefits. It was thus necessary to gather information on the sampled retiree population who are beneficiaries of the pension reforms (Sarantakos, 2005; Boateng, 2014).

Retirees in Ghana belong to a National Pensioners Association with branches in various country districts. The associations meet monthly. The bulk of their members is in the cities, especially the capital city Accra. The collection of the relevant data took place between September and December 2020.

Due to the outbreak of Covid – 19, meetings of the association were held in batches to observe social distancing and other protocols. Each batch had a focus group discussion. Open-ended and closed-ended questions helped obtain information about pension benefits' experiences and satisfaction levels under the 1991 pension reform and the pension reform in 2010, which introduced a three-tier pension scheme in Ghana.

The researcher is a well-known actor in the pension industry in Ghana, so the respondents were quite frank in their responses. However, the limitations of this type of interview are that some of the participants would not be forthcoming because it is open.

On the other hand, Morgan (1997) argued that focus group discussion provides intuition into thinking and a deeper understanding of the studied phenomena. Yin (2011) asserts that interviews in qualitative research mainly adopt a one-on-one approach, which stimulates and offers participants the opportunity to provide important information useful for the study.

The group focus discussion provided detailed information about the views of the retirees. The researcher adequately covered the retirees' experiences, observations, and perceptions throughout the process. The participants were uncomfortable with the electronic recording of the proceedings. To avoid discomfort, the researcher took handwritten notes of all salient points.

Initial contact with the executives of the Pensioners Association Branch in Accra was through a letter. The researcher's request was to conduct a study about the impact of the pension reforms, especially the 1991 and the 2010 pension reforms, on the adequacy of pension benefits. The executive officers did not hesitate to accept the request because the researcher is a known active worker in the pension industry in Ghana.

The agreed period for each session was 15 minutes. The same request for focus group discussion went to the Ghana Trade Union Congress and the FORUM. The FORUM is the umbrella body representing the trade union comprising: the Civil Servants Association, Local Government Service, Judicial Service Workers, the Health Sector Workers, and the Educational Sector Workers. Attached as Appendices are samples of the letters sent to them.

The researcher arranged a survey interview for individual retiree members to respond individually to a questionnaire developed by the researcher and pilot-tested through the association. The questions covered demographics, membership of a pension scheme, and satisfaction with pension benefits under the 2010 pension reforms, particularly compared with the last 1991 pension reform.

The distribution of the questionnaires to the participants took place at the scheduled association meetings. This approach was most appropriate because it conveniently maintained respondents' anonymity, confidentiality, and free expression (Bush & Hair, 1985; Davis, 2000). Obtaining a high response rate is also vital to this type of qualitative Research (Lessler & Kalsbeeh, 1992). So the approach yielded a good response.

The research used the focus group discussion and the survey interview through the questionnaire as the primary research instruments in collecting relevant data. The questions were developed in advance and covered the relevant areas to enable relevant responses to achieve the research objectives.

Further, the questions assisted in conducting the interviews and supervision of the discussions and ensured that the sessions were within the required scope and time. As indicated earlier, the researcher collected secondary data from newspapers, journals, reports, publications, and the internet. Attached as Appendices are some of them.

3.4.5. Data management and analysis

It is the stage of activities in the research process after collecting data. The collection method and the type of data gathered are the determinants of the management and data analysis approach. According to Miles and Huberman (1994), data management and analysis in qualitative research start when the research begins and continues throughout the study.

They further argued that the main activities associated with data management and analysis are data recording, data reduction, data reporting, and concluding. All these took place concurrently. Data analysis involves activities to reveal patterns and trends in data sets (Egger & Capri, 2008). In Boeije's (2010) view, analyzing data involves dismantling, segmenting, and reassembling data to form meaningful findings to draw inferences.

In the study, the analysis of the qualitative information gathered from the focus group discussions and interviews was around themes emerging from the literature, the empirical materials gathered, and the questions posed. Chapter 4 presents the detailed analysis of the hypothesis testing with descriptive statistics such as tables, frequencies, charts, and percentages. Miles and Huberman (1994) view analysis around themes as identifying recurrent issues from data gathered.

Thematic analysis is a qualitative analysis that focuses on analyzing, classifying, and presenting patterns related to the data (Alhojailan, 2012). Hayes (1997) argues that thematic analysis offers a comprehensive process that helps identify many cross-references between emerging themes and accurate data.

The study adopted the thematic analysis approach as it provided the opportunity to identify the impact of pension reforms in Ghana on the adequacy of pension benefits through interpretation. Thus the essential themes and ideas running through the transcribed data were identified and aided the process (Braun & Clarke, 2014).

According to Alhojailan (2012), thematic analysis is the most suitable if the aim is to study and discover using interpretations. Further, analysis through themes is appropriate for comparing different sets of evidence relating to different situations in the same study (Alhojailan, 2012).

The conduct of the data analysis followed the themes and objectives of the study to enable a better understanding and explanation of the data pattern. Detailed notes and questionnaires were taken and aided in sorting and categorizing the responses to facilitate the process. Thus, the views, opinions, and thoughts gathered from the respondents were categorized and systematically analyzed, keeping in mind the study objectives.

3.5. Ethical considerations

Research work in the social sciences involves various human actors. Therefore ethical considerations involving the rights of participants, especially in primary research, are an essential part of the Research (Bryman & Bell, 2007).

Thus, in fulfillment of ethical considerations, the researcher sought permission and consent of the respondents and participants. In the case of the retirees, the leaders of the Pensioners Association gave the necessary permission and consent. Thus, the researcher respected the right to confidentiality and the human rights of the retirees. As part of the requirements, when participants demanded that there should be no verbatim electronic recording at the focus group discussion, the researcher obliged.

Ghana has a data protection legislation passed in 2009. Following the data protection legislation requirements, the researcher maintained the confidentiality and integrity of the data and information gathered from various sources.

The participants were made aware of the research objectives and that the findings will inform decision-making in any future pension reform in Ghana. Further, any information that will expose the identity of any respondent or participant got removed from the data.

The assurance significantly encouraged voluntary participation, including an increased desire to disclose information (Suandres et al., 2012). Moreover, all relevant sources of information used in the study got acknowledged.

Finally, the study is helpful as a contribution to the ongoing pension reform around the world. It will also bring the need to make pension benefits a central goal in pension reforms and ultimately improve retirement income security for all.

3.6. Conclusion

In summary, the chapter discussed the research methodology employed in the study. Further, the chapter presented the research paradigm, the research approach and design, population size and sampling, and the research instruments. In addition, the primary and secondary data sources came out clearly.

The chapter also discussed the management and analysis of the data to aid the assessment of the essential themes and ideas running through the transcribed data. Ethical considerations which guided the process got mentioned. Furthermore, the evolution of pension and pension reforms in Ghana as the country for the case study discussed in Chapter 2 came to the fore. Next is the presentation of results and analysis found in Chapter 4.

Chapter 4 Presentation of Data and Analysis

4.1. Introduction

The previous chapter thoroughly discussed the methodology adopted for the study to answer the research question and hypothesis. This chapter presents the result of the study into pension reforms in Ghana as the country for the case study. The results of the qualitative research conducted through survey interviews, group focal discussions, and review of various secondary information are also analyzed and presented.

Further, the result of quantitative data gathered and studied to complement the qualitative information (Fielding & Fielding,1986) is also presented. Also discussed are the analyses of all the results. More importantly, the chapter presents the hypothesis testing and the results.

4.2. Pension Reforms in Ghana

As noted in the literature review, pension systems are constantly taking new dimensions. These come about due to altering objectives, advocating reform requirements, and the changing empowering environment of the pension systems (Holzmann, 2012).

In other words, pension systems need restructuring to enhance retirement income in the light of changing needs. Thus, changes made to an existing pension scheme for its improvement fall within the concept of pension reform.

The study of Ghana's pension system as the case study for this research presents the understated rationale and features of each reform from 1950 to 2008. It identifies the reform and the main features highlighted and discussed.

4.2.1. 1950 pension reform

The 1940 Colonial Development and Welfare Act set up a colonial old age income security policy to ensure trustworthiness and proficiency within the colonial civil service. It was a remuneration strategy for civil servants who served the British Colonial government with honesty and loyalty.

This development is consistent with George (2014), who observed that pensions at their inception were not a social benefit for the masses. Instead, pensions started as deferred payments for preferred workers such as civil servants. For instance, one of the first pension schemes set up by the British government was in the 1670s for the Royal Navy Officers.

The 1940 scheme was not contributory, and its purpose was to provide income security for such civil servants during their retirement. (Dei, 1997; Kpessa, 2016). The scheme was, however, limited to only Europeans and a few Africans who worked in the colonial administration (Kpessa, 2011).

The major challenge of this system was that it was limited in its coverage. Its design did not cover all sectors of workers in the Gold Coast Colony as Ghana was then known. The scheme covered only those who worked directly with the colonial masters. (Asamoah & Nortey, 1987 cited in Kpessa,2011).

Thus, the limitations and inadequacies inherent in the colonial old age income security policy of 1940 created the need for reform. The reform occurred in 1950 through the passage of the Pension Ordinance No. 42 of 1950, commonly referred to as CAP 30 in Ghana.

The CAP 30 means Chapter 30 of the 1950 British Colonial Ordinances. The CAP 30 pension scheme, for the first time, made provision for both European and African Civil Service workers described as pensionable officers.

The British Colonial Government managed it. It aimed to provide some level of comfort and decency for civil servant's life after retirement. The scheme at its inception was noncontributory. Its funding came from state revenue.

However, it became contributory for some pensionable officers employed in the civil service after January 1972. The CAP 30 scheme still exists as it has continued existence by the post-independent governments of Ghana since 1957.

Under the provisions of the CAP 30, a civil servant must provide a minimum of ten years of faultless and faithful service to qualify for a pension. The civil servant is entitled to the pension on voluntary retirement at age 45 years or compulsorily at age 60.

The challenges of the 1950 reform pension system are that a worker who breaks service before the ten years or has his service terminated or not perceived as credible for the pension entitlement could forfeit the pension. Further, the monthly pension is limited to only the civil servants described as pensionable officers.

Other civil servants are entitled to a retirement grant based on the discretion of the Government. The pensionable officers are paid a lump sum gratuity in addition to 50% of the first level of the salary scale on which they retired as monthly pension. The monthly pension is adjusted annually based on the adjustment of salaries of active civil servants.

Furthermore, the 1950 colonial pension reform scheme did not cover workers in the private sector who were in the majority. It was also not equitable or fair among all civil servants it covered.

By the 1960s, the post-independent Ghana started its rapid socio-economic development, including industrialization and major physical infrastructural projects. These included ports and harbors, schools at all levels, and health facilities. More job opportunities in the public sector opened, and the number of private-sector workers also increased

The then economic income security scheme did not cover all these new workers. The creation of a large workforce gradually created workers' associations. The passage of the Industrial Relations Act in 1961 and the creation of the Trades Union Congress provided a conducive environment for workers to champion their economic interests, including pension on retirement.

4.2.2. 1965 Social Security Act (Act 279)

In response to the need for reform to provide a compulsory pension scheme that will cover workers in both public and private sectors and develop the culture of savings among workers, the then government of Ghana introduced a compulsory workers savings scheme. However, the implementation faced several challenges.

Therefore, in 1965, the government passed the Social Security Act (Act 279) to establish a contributory provident fund scheme. It was a defined contribution arrangement. Apart from public sector workers covered by the CAP 30 pension scheme, all others, including private-sector workers, came under the 1965 social security scheme. However, its compulsory coverage was limited to only employers of more than five workers. It was optional for employers who had less than five workers.

Benefits were only lump sum and covered contingencies of old age, sickness, invalidity, death, emigration, and unemployment. The 1965 scheme also exempted foreign workers in the diplomatic missions, senior members of the universities and research institutions, the Armed Forces, the Police Service, and the Prison service.

The legislation that set up the scheme did not create single dedicated management to coordinate and ensure the smooth operations of the 1965 scheme. The then State Insurance Corporation of Ghana performed the operational functions. The Ministry of Finance was responsible for policy, managerial functions, and investments of the scheme.

In effect, the 1965 social security scheme did not cover all workers, and it paid only one-time or lump sum benefits compared to the parallel CAP 30 scheme, which pays monthly pensions and the lump sum. There was also no properly structured body to ensure a smooth and coordinated management of the scheme.

4.2.3. 1972 reformed social security scheme

In 1972, a new military government took over the country's governance. In response to the concerns about the limitation of the 1965 Social Security pension scheme, new legislation, the Social Security Decree of 1972 (NRCD 127), was enacted.

The Decree created the Social Security and National Insurance Trust (SSNIT) as a corporate body to be in charge of the management and administration of the social security scheme in Ghana. It set up a contributory provident fund scheme.

Membership of the scheme included workers in both the public and private sectors. Regrettably, it was compulsory for only employers with more than five workers. It was still optional for employers with less than five workers. All the contingencies under the 1965 scheme comprising old age, death, invalidity became part of the scheme under the NRCD 127 of 1972.

More significantly, the 1972 scheme continued with payment of only one-time or lump sum benefits in contrast with monthly pension under the CAP 30 pension scheme. The members of the 1972 scheme could also take interim benefits during active service. On retirement, the balance plus accrued interest was the retirement benefit.

The lump-sum benefit was the actual contribution of the worker plus 3% compound interest. The interest rate was fixed in the legislation and could change at the instance of the Minister of Finance.

4.2.4. 1975 pension reform

In 1975, the military government affected a significant reform by passing the Pensions and Social Security Amendment Decree, 1975 (SMCD8). This reform aimed to address the threatening financial sustainability of the CAP 30 pension, which was looming.

The 1975 Decree put a close to new entrants of workers into the public service from being members of the CAP 30 pension scheme. All workers employed in the public service after January 1972 became automatic members of the social security scheme set up by the 1972 decree.

An option was open for those employed in the civil service of Ghana earlier than January 1, 1972, to decide whether to remain and retire under CAP 30 or choose the scheme under the social security decree. It was clear that the option, once made became irreversible.

However, and for the first time, all those under the social security scheme who exercised the option to return to the CAP 30 pension scheme were to continue paying contributions to the CAP 30 scheme. Two scenarios were created under CAP 30 by the 1975 reform.

In the same CAP 30 scheme, some civil servants were not contributing, but others were contributing. Again, whereas those who decided to opt for the social security scheme were entitled to a one-time lump sum retirement benefit, CAP 30 continued to pay a monthly pension in addition to a one-time gratuity or lump sum retirement payment.

The 1975 reform brought about a unification of public sector pensions in Ghana into one social security scheme. The CAP 30, however, remained a parallel scheme but for only civil servants who will remain and retire under it. No new entrants were to be allowed into the CAP 30.

Under the 1975 unification, institutions including the police service, prison service, fire service, immigration service, and the legal service became part of the social security scheme for the first time. All public corporations and subvented organizations of the state also became part of the social security scheme. The Ghana Armed Forces, however, continued to have their separate scheme equivalent to CAP 30.

However, given the continuation of CAP 30, two parallel public sector pension schemes, namely the social security scheme, now a unified scheme, and the CAP 30, continued to operate. This development created a basis for comparison, particularly regarding pension benefits.

As time went by, civil servants retired and collected their lump sum benefits from the social security scheme without any monthly pension. The group of civil servants who were covered by CAP 30 also continued to retire and collected their lump sum called gratuity in addition to a regular monthly pension adjusted upwards annually.

Further, the 6% interest rate payable on the social security provident fund was in the Social Security Decree. Out of this, 3% was to be used for administrative expenses by the social security scheme administration, and the other 3% was the return on the contributions for the worker.

Table 4.1 below demonstrates the relevant annual average interest rates and inflation rates in contrast with the fixed interest rates of 6%, out of which 3% was the interest earned on the social security contributions to the worker under the social security provident fund scheme. It covers 1972 to 1990, which was the last year before the 1991 major pension reform in Ghana.

Table 4.1 Annual Average Inflation Rates, Annual Average 91 day Treasury Bill Interest Rate, and Social Security Interest Rates paid on contributions as returns covering 1972 to 1990.

Year	Annual Average inflation rate %	Annual average 91 day TB interest rate	Social security interest rate paid as returns on contribution	Approved interest rate paid by the social security scheme as returns on contributions to the worker
1972	10.21	6.5	6	3
1973	17.57	5.25	6	3
1974	18.56	5.24	6	3
1975	29.35	7.75	6	3
1976	55.65	7.75	6	3
1977	113.24	7.75	6	3
1978	87.09	12.00	6	3
1979	60.33	12.00	6	3
1980	51.71	12.00	6	3
1981	116.88	18.50	6	3
1982	24.56	9.50	6	3
1983	121.35	13.00	6	3
1984	48.75	13.00	6	3
1985	10.72	17.75	6	3
1986	24.44	22.75	6	3
1987	39.81	22.75	6	3
1988	31.48	19.70	6	3
1989	25.24	19.90	6	3
1990	37.18	27.50	6	3

Source: Constructed by the researcher from data from Bank of Ghana and the Social Security Decree 1972, NRCD 127.

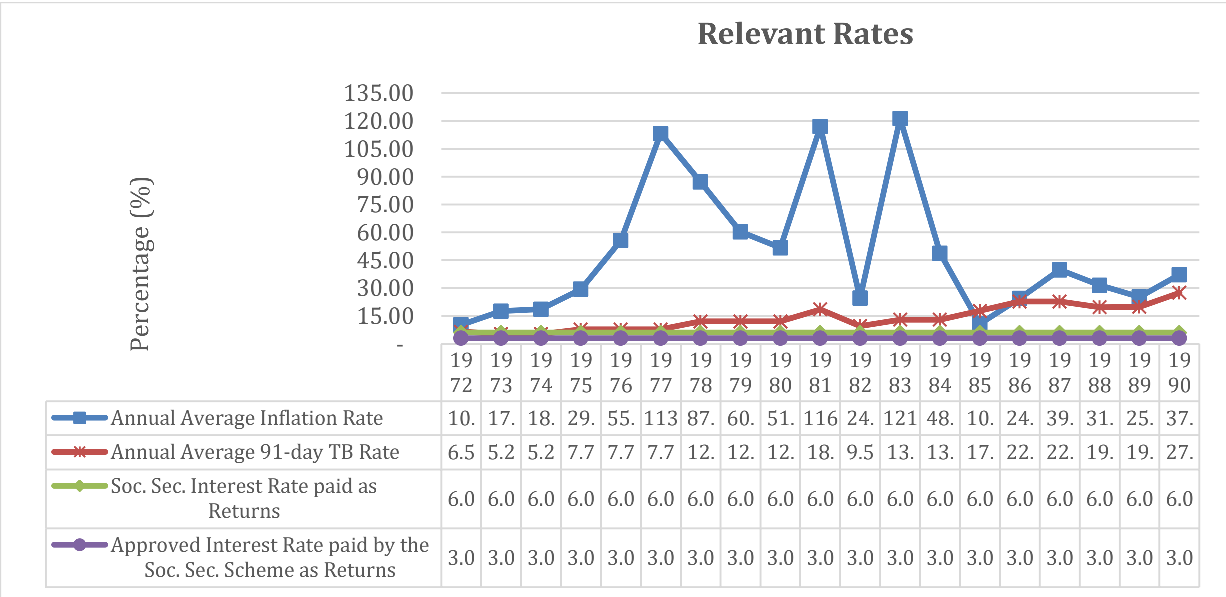
Table 4.2 is the measure of central tendency (mean, median, and mode) distribution of annual average rates of inflation and 91 day TB interest rates shown in Table 4.1

Table 4.2 Central tendency distribution of annual average inflation and 91 day TB interest rates from 1972 to 1990.

Annual average	Mean %	Mode %	Median%
Annual average of inflation rate 1972 – 1990	48.64	NIL	116.88
Annual average of 91 day Treasury Bill Interest Rate	13.72	NIL	18.50

Source: Constructed by the researcher.

Figure 4.1 Graph indicating the three interest rates demonstrated in Table 4.1



Source: Constructed by the researcher.

Table 4.1 and Figure 1, the graph, clearly show that the average annual interest rates for inflation and the 91 day TB interest rates fluctuated from 1972 to 1990. However, the inflation rates were higher than the 91 day TB interest rates.

The interest rates paid on the workers' social security contributions were lower than the inflation rate and 91 day TB rate. The 91 day TB interest rate. The interest rate paid as a return on the social security contributions remains constant at 6%.

It means the inflation rate is 48.64% compared with the mean of the 91 day TB interest rate of 13.72%. The median is 116.88% and 18.50%, respectively. It confirms that the inflation rate was far higher than the 91 day TB interest rate.

4.2.5. 1991 pension reform

Implementing the 1972 pension reform and the reform of 1975, which unified public sector pensions in Ghana, created further inequality and inadequacy of pension benefits paid to retirees. Retiree civil servants under the social security scheme contributed and received a one-time lump sum retirement benefit.

On the other hand, retiree civil servants under CAP 30 did not contribute but were paid a one-time lump sum in addition to regular monthly pension. Moreover, inflation had eroded the one-time lump sum retirement benefit paid to retired civil servants under the social security scheme.

In sum, the general concerns and dissatisfaction led to various agitations and the call for a return to CAP 30 pension for all civil servants in the country. In response, the government of Ghana in 1991 decided to undertake a significant systematic and parametric pension reform in Ghana.

The main objective of this pension reform was to create and convert the provident fund social security scheme into a pension scheme. The government subsequently enacted the social security law 1991, PNDC Law 247, in February 1991.

Section 3 of the 1991 social security law stated the main objects of the new social security pension scheme as follows; "to provide social protection for the working population for various contingencies such as old age, invalidity, and such other contingencies as may be specified by law and to be responsible for the administration and investment of the scheme within the framework of general directives issued by the Board."

Social insurance principles guided the creation of the 1991 social security pension scheme.iThe social insurance elements are social solidarity with the pooling of risk and resources to meet the contingencies covered by the scheme. It also involves the principle of inter-generational transfer of resources by which young or active contributors of the scheme support those retiring.

The scheme covered both public and private sector workers. For the first time in the history of Ghana, the pension scheme became compulsory for every worker and every employer. It was a legal offense for not registering a worker with the scheme.

The scheme is a defined benefit pay-as-you-go system. Funding is by contributions made by every worker and employer and returns on investment of the contributions. The investments are diversified and no longer have a fixed interest rate, as happened under the 1972 pension reform.

In addition, and for the first time, all civil servants now retire with a lump sum and a monthly pension with CAP 30. The benefits covered by the 1991 social security pension scheme are three comprising old age pension, death/ survivors benefit, and invalidity benefit.

4.2.5.1. Old age pension benefits

The old-age pension could be a full pension or a reduced pension. To qualify for old age full pension, a worker must contribute to the scheme for at least an aggregate of 240 months or 20 years and must attain the compulsory retirement age of 60 years or 55 years for a worker in an underground mine, steelworks, or approved hazardous employment.

The minimum pension is 50% of the average of the best three years' salary. Furthermore, any additional month contributed after 240 months earns an additional pension right of 0.125% or 1.5% for every 12 months up to a maximum of 80%. The 80% maximum is achievable if the worker contributed to the social security scheme for 40 years. Thus, more contribution to the scheme enhances the worker's pension benefit.

A reduced pension is the benefit payable when a worker takes early or voluntary retirement from 55 to 59. The reduced pension is computed as a percentage of the total pension depending on the age of the early retiree, as shown in Table 4.3 below:

Table 4. 3 Computation of reduced pension

Age in years	55	56	57	58	59
% of full pension	60	67.5	75	82.5	90

Source: Constructed for the study by the researcher.

The reduced pension is 60% of a full pension plus 7.75% for any additional year from age 55 until age 59 when the reduced pension gets to 90% of the total pension. While a pension is monthly, a retiree can take a lump sum payment of 25% or 12 years pension.

Where a contributor at the time of compulsory or early retirement cannot make the aggregate minimum contribution of 240 months or 20 years, the retiree receives a lump sum old-age benefit. The old-age lump sum is a return of all the actual contributions made by the worker plus 50% interest of the prevailing government 91 days Treasury Bill Rate compounded.

4.2.5.2. Death survivor’s benefit

The survivor's benefit is payable to the dependents of a worker who dies in active work or while on a pension. If the worker dies while in active service and contributed 240 months or more, the survivor's lump sum benefit is the earned pension for 12 years. If the deceased worker cannot make the 240 monthly contributions, the survivor's benefit is the proportional pension for 12 years.

If a member on retirement dies before age 72, the lump sum benefit is the unexpired pension from the age at which the member dies up to age 72. In other words, if a pensioner dies after or at age 72, no survivor's benefit is payable.

4.2.5.3. Invalidity pension

The 1991 social security pension scheme also provided a monthly pension to workers who suffered permanent disability from physical or mental conditions. The state of disability requires medical proof by a medical board.

The invalid worker must also have contributed at least 12 months within the last 36 months before the occurrence of the certified permanent invalidity to engage in any gainful employment. The invalid pension amount is the actual pension earned by the worker if he had qualified for pension before the occurrence of the invalidity. If not, the minimum pension determined by the scheme becomes the benefit payable to the worker who has been medically declared invalid as a monthly pension.

The 1991 reformed contributory pension scheme operated concurrently with the CAP 30 defined non-contributory scheme for civil and other public servants. Under both schemes, monthly pension and lump sum benefits are payable to retirees.

However, the formula for the computation of monthly pension and the lump sum component under both schemes differ. The formula under CAP 30 is more generous. The terminal salary of the worker, which is usually higher, is used in the computation.

On the other hand, the 1991 social security scheme uses an average of 36 months' highest salary of the worker and the period of contribution to the scheme to determine the pension rights. Out of the total pension so determined, 25% or 12 years pension is computed and paid to the worker as a lump sum under the social security scheme.

Over time, the 25% lump sum benefit paid under the 1991 social security scheme became very small in contrast to the lump sum under CAP 30, which in some cases was over 300% higher. This disparity again created general dissatisfaction among public sector workers leading to agitation by organized labor groups.

There was a call for reform or the return of all civil servants to the CAP 30 pension scheme. The response by the government of Ghana was the setting up of a Presidential Commission on Pensions (PCP) in 2003.

The PCP was to study the pension industry in Ghana and pension systems in other parts of the world and advise the government on setting up a sustainable pension scheme for all workers in Ghana. The new scheme was all-inclusive to cover both formal and informal sector workers.

At the end of the PCP's work in 2005, it recommended systematic, parametric, administrative and regulatory, and supervisory comprehensive pension reforms in Ghana. A three-tier contributory pension scheme recommended was accepted by the Government. The detailed features of the new three-tier pension scheme introduced in 2020 and modeled along the World Bank Multi-Pillar pension system were discussed earlier in Chapter 2 under Literature review section 2.8.4.

4.3. Comparison of pension benefits under 1991 (PNDC Law 247) pension reform and 2008, Act 766 pension reforms.

As observed earlier, the 1991 reform converted the hitherto social security provident fund scheme into a social insurance defined benefit pension scheme. This scheme introduced a regular monthly pension and a 25% lump sum of 12 years earned pension.

It cured the discrimination under the non-contributory CAP 30 introduced in 1950, which pays monthly pension and lump sum on generous terms. Over time, a considerable disparity emerged between the 25% lump sum under the social security scheme and the CAP 30 lump sum paid to public servants.

This disparity about the adequacy of the lump sum was a significant concern that the 2008 pension reform attempted to address by introducing the three-tier scheme. (Presidential Commission on Pensions, 2005).

The second tier is to be responsible for the lump sum. The 5% contribution of the worker is to be invested in the market over the working life to accumulate and produce a better lump sum.

Further, at the commencement of the 2008 reform, which started in January 2010, all active workers who belonged to the 1991 social security pension scheme were automatically transferred to the new three-tier scheme.

Act 766 which set up the new three-tier scheme, provided that the equivalent of the 25% lump sum earned by all members of the 1991 scheme who migrated onto the new three-tier scheme should have that lump sum calculated as at the cutoff date. The amount calculated will then become lump sum past credit to be added to the lump sum accumulation in the second tier scheme and paid to the worker on retirement as the total lump sum under the second tier scheme.

In effect, under the 2008 reform, the lump sum component of the retirement benefit comprised a total of the lump sum past credit and the amount accumulated under the second tier. The payment of lump-sum benefit of past credit from the 1991 scheme and the second tier amount to beneficiaries under the new 2008 reform, expected to be far better than the 25% lump sum under the 1991 scheme, has generated yet another significant worker agitation in Ghana in 2019.

Consequently, in this study, quantitative data gathered is to analyze monthly pension and lump-sum payments under the new 2008 three-tier pension scheme in contrast with the 1991 scheme. The results of analyzed data of a sample size of 200 pensioners under each reform are marked Appendices 2 and 3.

Table 4.4 below shows the mean, median, and mode of monthly pensions and lump sums paid to pensioners covering 2017 to 2019, computed from Appendices 1 and 2. The questionnaire for the study is Appendix 3.

Table 4.4: Mean, Median, and Mode distribution of monthly pension and lump sums paid for 2017 – 2019.

	1991 PNDC LAW 247		**2008 NEW PENSION SCHEME ACT 766**	
	Monthly Pension GH¢	Lump Sum GH¢	Monthly Pension GH¢	Lump Sum GH¢
Mean	770.93	21,105.70	665.04	10,088.69
Median	714.50	20,041.50	300.00	5507.00
Mode	276.00	NIL	327.00	5659.50
Standard deviation	450.01	13213.74	805.33	13580.29
Variance	202510.99	174602938.89	648548.42	18442451.80

Source: Constructed by researcher

Table 4.4 indicates that the average (mean) monthly pension paid to respondents who participated is Gh¢ 770.93 under the old 1991 scheme compared to Gh¢ 665.04 under the 2008 new three-tier scheme. The median is Gh¢ 714.50 and Gh¢ 300, respectively.

In terms of the lump sum, the average (mean) under the old 1991 scheme is Gh¢ 21,015.70 compared to the new 2008 three-tier scheme of Gh¢ 10,088.69. The median is Gh¢ 20,041.50 and GH¢ 5,507.00, respectively.

The 2008 scheme indicates the highest lump sum as Gh¢136,278. The mean or average lump sum is Gh¢10,088 as compared to the mean or average lump sum under the 1991 scheme of Gh¢ 21,105. It represents a percentage difference of 52.2%.

Early or voluntary retirement starts at age 55 under both schemes up to age 59. Age 60 is the compulsory age of retirement. Under the 1991 scheme (Appendix 1), a total of 34 retired early as compared with those who took early retirement under the 2008 scheme of 79 in Appendix 3.

4.3.1. Result of the survey interview

This subsection presents the survey interview conducted for retirees under the 1991 social security scheme and the 2008 reform three-tier pension scheme. The analyzed information from the questionnaire (Appendices 1and 2) administered to the respondents is shown as statistical evidence for further discussion.

Summarized and presented are the respondents' profiles indicating their demographic variables, the pension scheme they belonged to, and their period of contribution or membership of the scheme. The specific responses of the respondents to their levels of satisfaction or dissatisfaction with the lump sum components and a monthly pension of the retirement benefits paid under both the 1991 social security scheme and the 2008 new three-tier pension scheme have also been scrutinized and presented.

The responses are ranked and coded from Strongly Dissatisfied (SD), Dissatisfied (D), and Neutral (N) to Satisfied (S) and Strongly Satisfied (SS). The need to test the hypothesis derived from the research questions necessitated the responses by the respondents to be measured or scaled in the form of numerical values.

The values assigned in weighting rank from 1 being the highest to 5 being the lowest. Neutral (N) is 3, satisfied is four, and dissatisfied is 2. Strongly satisfied is 5, and strongly dissatisfied is 1. According to Jo Ann Lee (2007), the measurement scale in statistical analysis is the type of information provided by numbers.

Four types of measurement scales are nominal, ordinal, interval, and ratio, and each provides a different type of information. The measurement itself is the assignment of numbers in a meaningful way. The understanding of measurement scales helps in interpreting the numbers assigned to people, objects, and events (Lee, 2007).

The chosen scale of measurement for the survey is ordinal because the quality or level of satisfaction of the respondent retirees regarding the pension benefits paid to them is the subject of the inquiry. Therefore, an ordinal scale that ranks and indicates quality or quantity was considered suitable.

Tables 4.5: 4.6 and 4.7 present the results of the respondents under the 1991soical security scheme. The Tables numbered 4.8, 4.9, and 4.10 indicate the results of respondents under the new 2008 three-tier pension scheme.

Table 4.5: Profile of the respondents (pensioners) under the 1991 (old) social security pension scheme (PNDC law 247)

	DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE %
1	Gender :		
	Male	116	58
	Female	84	42
	TOTAL	**200**	**100**
2	Age of respondents		
	55	3	1.5
	56	4	2.0
	57	6	3.0
	58	4	2.0
	59	17	8.5
	60 and above	166	85.3
	TOTAL	**200**	**100**
3	Level of education :		
	Master's Degree and above	16	8.0
	First Degree	54	27.0
	Professional Qualifications	12	11.0
	Diploma	48	24.0
	Secondary/Technical/ Vocational	36	18.0
	Middle School Certificate	13	6.5
	No Education	11	5.5
	TOTAL	**200**	**100**
4	Type of Pension Scheme Old Scheme (1991) PNDCL. 247	**200**	**100**

	TOTAL		
5	Sector of the economy worked: Public Private **TOTAL**	 136 64 **200**	 68 32 **100**
6	Period of contribution in years: 1991 SSNIT Scheme 20 – 25. 26 – 30. 31 – 35. 36 – 40 **TOTAL**	 34 102 48 16 **200**	 17 51 24 8 **100**

Source: Constructed by the researcher.

From Table 4.5, all the 200 respondents provided the information. There were no missing data because the survey took place at meetings of the retiree associations. The number of male respondents is 116, and that of females is 84 or 58% and 42%, respectively. Respondents aged between 55 to 59 were 54, representing 15.7%.

Those aged 60 and above numbered 166, representing 85.3%. Age 55 is the minimum age to qualify for an early or voluntary retirement pension. The 60years is the compulsory age for retirement under both the 1991 pension scheme and the current 2008 new three-tier pension scheme.

In terms of the level of education, those with tertiary education from diploma to master's degree and above were 141 or 70.5%. The basic level of middle school education to secondary/technical was 49 or 24.5%. Those with no education were 11 or 5.5%. All the 200 respondents belonged to the 1991 pension scheme. Those who worked in the public sector were 136 or 68%, and 64 or 32% worked in the private sector.

The period of contribution to the pension scheme, which is one of the significant determinants of the amount of pension awarded aside from salary level, indicates that 17% or 34 of respondents contributed for 20 years, being a minimum of 25 years.

Further, 51% or 102 respondents contributed for a period between 26 to 30 years, 24% or 48 respondents contributed between 31 to 35 years, and 16 respondents representing 8% contributed for the periods ranging from 36 to 40 years.

Table 4. 6: Result of responses to the survey interview conducted for pensioners who retired under 1991 (old) SSNIT pension scheme (PNDC Law 247) in respect of the 25% lump sum benefit

RESPONSE	NO. OF PENSIONERS	PERCENTAGE %
SD	99	49.5
D	96	48.0
N	0	0.0
S	5	2.5
SS	0	0.0
	200	**100**

CODE	MEASUREMENT (SCALE)
SD – STRONGLY DISSATISFIED	1
D – DISSATISFIED	2
N – NEUTRAL	3
S – SATISFIED	4
SS – STRONGLY SATISFIED	5

Source: Constructed by the researcher

The statistical evidence of the level of satisfaction of the retirees under the 1991 scheme regarding the 25% lump sum component of their retirement payment is in Table 4.6. Out of the total of 200 retirees, 99 or 49.5% indicated they are strongly dissatisfied (SD) with the 25% lump sum paid to them.

Dissatisfied retirees (D) with the 25% lump sum numbered 96 or 48%. There are no neutrals (N). None was also strongly satisfied (SS) with the 25% lump sum. However, five retirees indicated they were satisfied (S) with the lump sum. It represents 2.5% of the respondents.

Table 4.7: Result of responses to the survey interview conducted for pensioners who retired under the **1991 SSNIT pension scheme (PNDC Law 247)** regarding **the monthly pension benefit.**

RESPONSE	NO. OF PENSIONERS	PERCENTAGE %
SD	118	59
D	76	38
N	0	0.0
S	6	3
SS	0	0
	200	**100**

CODE	MEASUREMENT (SCALE)
SD – STRONGLY DISSATISFIED	1
D – DISSATISFIED	2
N – NEUTRAL	3
S – SATISFIED	4
SS – STRONGLY SATISFIED	5

Source: Constructed by the researcher.

The analysis of the retiree's level of satisfaction with a monthly pension paid to them regularly under the 1991 pension scheme is in Table 4.7. It shows that 118 retirees or 59% indicated strongly dissatisfied (SD) with the monthly pension.

Retirees dissatisfied (D) with the monthly pension are 76 or 38%. There are no neutrals (N). Pensioners satisfied(S) with the monthly pension numbered 6 or 3%. None of the pensioners is strongly satisfied (SS) with the monthly pension under the 1991 pension scheme.

Table 4.8: Profile of the respondent retirees under 2008 (new) Three Tier Pension Scheme (Act 766)

	DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE %
1	Gender :		
	Male	143	71.5
	Female	57	28.5
	TOTAL	**200**	**100**
2	Age of respondents		
	55	17	8.5
	56	19	9.5
	57	16	8.0
	58	11	5.5
	59	16	8.0
	60 and above	121	60.5
	TOTAL	**200**	**100**
3	Level of education :		
	Master's Degree and above	20	10.0
	First Degree	62	31.0
	Professional Qualifications	18	9.0
	Diploma	53	26.5
	Secondary/Technical/ Vocational	34	17.0
	Middle School Certificate	9	4.5
	No Education	4	2.0
	TOTAL	**200**	**100**
4	Type of Pension Schemes		
	New Scheme (2008) Act 766	**200**	**100**

	TOTAL		
5	Sector of the economy worked: Public : Private **TOTAL**	 142 58 **200**	 71 29 **100**
6	Period of contribution in years: New 2008 pension Scheme 15 – 20 . 21 – 25. 26 – 30. 31 – 35 36 – 40 **TOTAL**	 69 37 56 26 12 **200**	 34.5 18.5 28.0 13.0 6.0 **100**

Source: Constructed by the researcher.

Table 4.8 shows the profile of pensioners under the new three-tier pension scheme introduced in 2008. All the 200 respondents provided the information because their responses to the questionnaires occurred at their pensioner's-association meetings. A total of 143, or 71.5%, were males, and 57 or 28.5% were females.

Regarding age distribution, those with the minimum early retirement age of 55 to 59 years were @79, representing 39.5%. The compulsory retirement age of 60 and above numbered 121 or 60.5%. Respondents who a first degree up to master's degree and above were 82 or 41%. Those with Diploma and other professional education were 71 or 33.5%.

The basic level comprising secondary/ technical and middle school was 43 or 21.5%. Those with no education were 4 or 2%. The educational level in the study is crucial because it also determines the basic salary level of the worker, and the salary level is a determinant of the final retirement income and period of contribution to the pension scheme.

All the respondents belonged to the new three-tier pension scheme, which started in 2010. 142 or 71% worked in the public sector, and 58 or 29% worked in the private sector.

Regarding the period of contribution to the scheme, 69 or 34.5% of the pensioners contributed between 15 and 20 years. A total of 37 or 18.5% contributed between 21and 25 years, 56 or 28% contributed between 26 and 30 years, and 26 or 13% contributed between 31 and 35 years. The remaining 12 or 6% contributed between 36 and 40 years to the scheme.

Table 4.9: Result of responses to the survey interview on 2008 (new) three-tier pension Scheme (Act 766) lump **sum benefit comprising past credit lump sum and** second-tier **lump sum**

RESPONSE	NUMBER OF PENSIONERS	PERCENTAGE %
SD	192	96
D	8	4
N	0	0.0
S	0	0.0
SS	0	0.0
	200	**100**

CODE	MEASUREMENT (SCALE)
SD – STRONGLY DISSATISFIED	1
D – DISSATISFIED	2
N – NEUTRAL	3
S – SATISFIED	4
SS – STRONGLY SATISFIED	5

Source: Constructed by the researcher.

The evidence obtained from the survey about the level of satisfaction of pensioners who retired and were paid the lump sum component of their pension benefit under the new three-tier scheme is in Table 4.9. As stated previously, the lump sum of the retirement benefit payable under the three-tier scheme has two components.

It comprises the equivalent of 25% lump-sum earned under the previous 1991 scheme before their migration onto the new three-tier scheme, which is called past credit lump-sum. The other is a 5% contribution plus returns accumulated in the second tier of the new scheme.

The preparatory work and the recommendation of the Presidential Commission on a pension indicated that the lump sum component of the pension under the new three-tier scheme would be better than that of the previous 1991 scheme. Table 4.9 shows that out of 200 pensioners interviewed, 192, representing 96%, responded that they are strongly dissatisfied (SD) with the lump-sum benefit under the new scheme.

Pensioners dissatisfied (D) are 8 or 4% of the respondents. None was neutral (N). Responses for satisfied (S) and strongly satisfied (SS) were zero.

Table 4.10: Result of responses to the survey interview of pensioners under the **2008 (New) three-tier pension scheme (Act 766)** regarding **the monthly pension.**

RESPONSE	NO OF PENSIONERS	PERCENTAGE %
SD	135	67.5
D	52	26.0
N	0	0.0
S	13	6.5
SS	0	0.0
	200	**100**

CODE	MEASUREMENT (SCALE)
SD – STRONGLY DISSATISFIED	1
D – DISSATISFIED	2
N – NEUTRAL	3
S – SATISFIED	4
SS – STRONGLY SATISFIED	5

Source: Constructed by the researcher.

Table 4.10 illustrates responses to the level of satisfaction regarding the monthly pension paid to pensioners under the new 2008 three-tier scheme. A total of 135 or 67.5% indicated they were strongly dissatisfied (SD). Respondents numbering 52 or 26% stated they were dissatisfied with the monthly pension.

There were no neutrals (N). Those who stated they are satisfied are 13 or 6.5%, and there was no response for strongly satisfied.

4.4. Discussion of the results of the qualitative and quantitative survey interviews

This subsection discusses the results of the survey interviews conducted for pensioners under the 1991 social security scheme and the 2008 three-tier pension scheme. The information gathered from the reports and publications of other works on previous pension reforms from 1950 to 1975 is also discussed.

Also discussed is the quantitative data gathered about the actual monetary amounts paid to pensioners under the 1991 scheme and the 2008 three-tier scheme covering 2017 to 2019. These are Appendices 2 and 3.

4.4.1. 1950, 1965, 1972, and 1975 reforms

Ghana's experience with pension reforms to enhance income security dates back to the colonial era (Obeng-Nyarko, 2009). Before the introduction of formal pension systems, it was the obligation of the extended family to take care of the aged and frail and provide financial assistance to cater for the death of a family member (Dei, 1997).

The introduction of formal social security or pension systems following the emergence of modern society moderated the responsibilities of the extended family about assisting the aged (Dei, 1997). The development of Ghana from the colonial era from traditional independent tribal communities into a unitary country created opportunities for people to move into the newly created urban communities.

Formalized workforce began to develop, comprising both Ghanaians and foreigners. Ideally, pension schemes should cover the entire population since retirement is an inevitable aspect of life experienced by all and sundry (Gillion, 2000).

However, most pension systems cover only a few workers in the formal sector leaving out workers in the informal sector (Hu & Stewart, 2009). It has created a situation where workers retire with inadequate retirement income security (Whitehouse et al., 2009).

Further, even though pension systems have become vital for income security in retirement and other eventualities, pension systems are still rife with problems. Some of the problems are structural, and others are policy setbacks.

Some of them are a lack of understanding of pension administration and the absence of comprehensive pension mechanisms to cater to all categories of workers (Collins- Sowah et al., 2013). These challenges have generated a lot of debate about the need for pension reform. (Kpessa, 2010).

Ghana has adopted several pension reform strategies by successive governments to meet this critical social need (Kpessa, 2010). The arguments for these reforms include coverage, administrative, systematic, sustainability, and unification.

During the colonial era, the Colonial Development and Welfare Act of 1940 introduced a pension scheme exclusively for civil servants. It was, however, limited to European officers in the civil service.

The pension ordinance of 1950 introduced a reform that substituted and integrated the European officers' pension with non-European officer's pension. It created a single nondiscriminatory pension scheme covering both expatriates and local workers in the colonial administration (Darkwa, 1997).

By 1955, a similar pension scheme named the university staff superannuation scheme was also set up for the public universities in the country. As the organized labor force continued to increase without any pension provision, the 1965 Social Security Act came into being to create opportunities for more workers for inclusion in the pension system. (Aglobie,2011).

The 1965 scheme was, however, made compulsory for establishments that employed five or more workers. The scheme did not have a separate administration to operate as a pension scheme effectively. Its administration was by the Ministry of Finance and the then state Insurance Corporation of Ghana, which was purely a universal commercial insurance provider.

Thus, the earlier attempt or strategy of pension reform was more of an issue of increasing the coverage of workers. The need to ensure the inclusion of workers in public and private sectors and the informal sector in the pension system was not part of the reform process.

In addition, the benefit under the 1965 reform was a one-time payment or a lump-sum benefit on retirement. It contrasted the 1950 CAP 30 pension scheme for civil servants, providing lump-sum and monthly pensions.

The insufficiency of the pension, the absence of a dedicated administrative structure, and the non-inclusion of all workers in the 1965 scheme generated further debates and agitation. It necessitated the 1972 pension reform in Ghana.

The 1972 reform created a new corporate entity, the Social Security and National Insurance Trust (SSNIT), to be the body exclusively in charge of the social security scheme in Ghana. The 1972 scheme continued as a contributory scheme but again limited mandatory coverage to only establishments that employed five or more workers.

It was voluntary for all others. Again the benefit was still a lump sum paid by the provident fund scheme. It covered both public and private sector workers.

Thus, the public sector workers, particularly those on the CAP 30 pension scheme, received a lump sum and a monthly pension on retirement. Those under the 1972 social security scheme, on the other hand, were paid only a one-time lump-sum benefit on retirement.

The CAP 30 pension, more generous but noncontributory, was financed from state revenue. As the number of retirees increased, it became a significant financial burden on the state. On the other hand, government workers covered by the social security scheme and contributed raised issues of discrimination and unfairness. It arose due to comparing the benefits under the CAP 30 and the 1972 social security scheme.

Thus, under the reform implemented up to 1972, the issue of coverage extension got addressed though not totally. Further, establishing a dedicated administrative structure for the pension scheme was addressed. However, insufficient pension benefits, the issue of sustainability, and the mechanism or system to eliminate the discrimination persisted. (PCP, 2005; Collins-Sowah et al., 2013)

As indicated earlier, the CAP 30 pension is noncontributory even though generous in its benefits paid out. The generous benefits are from the general revenue of the state. The number of beneficiaries includes civil servants, the police, fire service, prison service, immigration service, other security services, and the armed forces. (Kumado & Gockel, 2003)

The government, at the same time, was paying workers in active employment and retirees every month. It put more stress on the limited financial resources of the country.

Consequently, and in an attempt to find a solution, a new law, Pensions and Social Security Amendment Decree 1975 (SMCD8), was promulgated. The aim was to introduce a reform of the two parallel public sector pension schemes, namely the social security scheme reformed in 1972 and the 1950 CAP 30 reformed pension.

This reform was administrative because it created an option for public servants under the CAP 30 employed before 1 January 1972 to remain under CAP 30 or opt for the 1972 contributory social security scheme.

The CAP 30 was presumably to be closed to new entrants. The option once exercised was irrevocable. Failure to exercise the option under the law also meant a choice under the 1972 contributory social security scheme. Workers who exercised the option to remain under CAP 30 either started or continued paying monthly contributions as part of the funding for their future pension under CAP 30.

This aspect of the 1975 reform was a parametric reform because, for the first time since 1950, CAP 30 became contributory for some workers to finance their CAP 30 pension. However, this was instead a piecemeal approach to solve the financial sustainability issue because the more significant majority who were going to retire under CAP 30 was still not contributing. It thus created another discrimination among beneficiaries of the CAP 30 pension scheme (Kumado & Gockel, 2003).

The 1975 reform continued with the parallel social security provident fund scheme and the primarily advantageous CAP 30 pension scheme paying a one-time lump-sum in addition to a regular monthly pension. The insufficiency of the social security pension being only a one-time lump-sum benefit became apparent among workers.

Moreover, high inflation erodes the value of the lump sum paid under the social security scheme. The best option to invest the lump-sum was to buy a fixed deposit with a financial institution or buy government securities.

As demonstrated in Table 4.1, the inflation rates were, on average higher than interest rates. Table 4.1 indicates the comparable rates from the 1972 social security pension scheme reform in 1972 up to 1990.

The mean of annual average inflation from 1972 to 1990 was 48.64% compared with the mean of the annual average of 91 day TB interest rate of 13.72%. The interest paid as a return on social security contributions, however, remains constant at 6% for the entire period of 1972 -1990.

This position of retirees under the social security scheme contrasted with their CAP 30 counterparts who are enjoying a regular monthly pension. Additionally, the CAP 30monthly pension was adjusted annually by the upward adjustment of salaries of active or working civil servants.

Not surprisingly, this development led civil servants who were not under CAP 30 to become agitated. They aimed to get on to CAP 30 or to have the social security scheme reformed to make its pension benefits similar to the more advantageous CAP 30 Scheme.

The situation described by Kumado & Gockel, 2003 as follows on page 11 " Literally as it existed, the provident fund scheme was nothing but compulsory savings account with a 3% compound rate of interest that did not give actual returns to the funds saved.

By this, payments made out by the fund were essentially from the beneficiary's savings. This development and other factors engendered dissatisfaction among the rank and file of unionized labor to call for the eventual conversion of the scheme into a pension scheme in 1991".

The pension reforms carried out in Ghana from the 1950s to 1975 were on a piecemeal basis for different target groups. It lacked cohesion or an overall pension design mechanism to address the challenges of the pension system in Ghana.

Consequently, the 1975 reform got disintegrated by successive governments allowing various groups to leave the social security scheme and return to the CAP 30 pension. Between 1978 to 1997, six institutions, namely, the police, prisons, fire service, immigration, public law officers, and intelligence and security services, were returned to the generous and non-contributory and financially unsustainable CAP 30 scheme.

4.4.2. Analysis of the 1991 reform

In response to the agitations, the government converted the 1972 social security provident fund scheme into a contributory social insurance pension scheme in 1991. This scheme was made compulsory for all employers and workers in Ghana. It covered public and private sector workers except those expressly exempted by the law.

The 1991 social security pension scheme was designed to provide three main benefits. These are old age pension, survivors benefit and invalidity pension. By this, the social security scheme in Ghana also started the payment of monthly pension in addition to a lump-sum component as the 1950 CAP 30 pension has been provided to public sector workers put under it by the government.

Further, the 1991 social security pension scheme and the old CAP 30 pension scheme are based on defined benefit principles. In other words, the pension benefit of a retiree is based on the salary earned by the retiree in active service and the number of years or period worked. However, the formular for computation of pension under both schemes varied.

Under the 1991 social security scheme, the final pension salary used in the computation is the annual average of the best three years in the working life of the worker. This is then multiplied by the pension accrual rate earned by the worker based on the number of months or years worked. For every 20 years or 240 months worked, the retiree earns a 50% pension right. Every additional year worked, earns the worker 1.5 % up to a maximum of 80%.

By this arrangement, it takes the worker 40 years or 480 months to earn the maximum of 80% pension right. Out of the total pension rights derived for the retiree, 25% of the total multiple by 12 years is paid to the retiree as the lump-sum component of the pension. The 75% is paid as the residual monthly pension for the rest of the life of the retiree.

The residual monthly pension is indexed annually based on the annual average wage inflation rate of active members of the scheme. This is done on the first of January each year.

In contrast, the formular for computation of pension under the non-contributory CAP 30 scheme is based on the final gross annual salary earned at the date of retirement. This is also known as the terminal salary. It is multiplied by the length of service of the worker in months and multiplied again by 1/480.

The lump sum or gratuity is calculated as ¼ of the full pension multiplied by 20. With the different methods for computation of pension benefits under the two schemes, two public sector workers with the same educational qualification who earned the same salaries and worked for the same period and retired on the same date but one under CAP 30 and the other under the 1991 social security scheme will have different lump sums as a pension benefit.

The worse of it all is that, the one who retired under the social security scheme contributed to his retirement benefit but the one under CAP 30 did not contribute but he will be paid from government revenue. Table 4.12 below illustrates the point better.

In Table 4.12, it is assumed the two retirees worked for 20 years or 240 months each. They have the same qualifications and worked in the same public sector office. They earned the same salary and retired on the same date at age 60 which is the compulsory retirement age in Ghana. Appendix 6 shows in a table form the detailed comparison between CAP 30 scheme and the 1991 social security pension scheme.

Under the social security scheme, the annual average of the best three years' salary on which the worker paid contribution was Gh¢ 10,000. The annual gross final salary of the other worker under CAP 30 non-contributory scheme was also Gh¢10,000. Applying the formular for computation of pension benefits under both schemes, as shown in Appendix 4, the Table 4.12 below illustrates the results in terms of the lump sum payable to each.

Table 4.12: Comparison of lump sum under the social security pension scheme and CAP 30 pension scheme

Retiree under 1991 social security scheme	Retiree under CAP 30
1. Average of annual 3 best years' salary – Gh¢ 10,000 2. Period of work-240 months or 20 years 3. Total pension right – 50% of 10,000 = 5000 4. 25% lump sum $-5000 \times \frac{25}{100} \times 12$ 5. The total lump sum = Gh¢15000.00	1. Final gross annual salary – Gh¢ 10,000.00 2. Period of work-240 months or 20 years 3. Total pension : $10000 \times 240 \times 1 \div 480 = 5000$ 4. Lump sum / gratuity : $5000 \times \frac{1}{4} \times 20$ 5. Total lump sum = Gh¢25,000.00

Source: Constructed by the researcher for this project.

On the whole, the CAP 30 retiree receives a lump-sum pension benefit of Gh¢ 25,000.00 which is Gh¢10,000 more than the retiree under the 1991 social security scheme who receives Gh¢ 15,000.00 as lump-sum. This disparity is consistent with the 2006 findings of the Presidential Commission on Pension report which stated the following on page 10 of its final report.

"There was antagonism towards the social security scheme deriving from distrust for the management of the scheme and aversion to the virtual monopoly of the scheme. This aversion is not helped by the small quantum of the lump-sum component of earned pension benefits paid by the social security scheme as compared to that of CAP 30".

Thus, the 1991 reform was an attempt to make both parallel schemes to provide similar retirement benefits of a lump-sum and monthly pension. Though the 1991 reform resolved the issue of accessibility to a monthly pension for all, it also unfortunately introduced another dimension of disparity in the lump sum component of the pension benefits.

The lump-sum disparity between the CAP 30 and the social security scheme generated further debates and agitation among public sector workers. This time there were calls for an overhaul of the social security scheme. Issues of poor investments, high administrative expenses, low coverage, excessive government control and interference and inadequate pension benefits were raised against the social security administration. (Kumado & Gockel, 2003).

As a direct response to the debate and agitation, the government appointed the Presidential Commission on Pensions to advice on pension reform in the country. There were views that the social security scheme should be privatized to ensure efficiency. Others believed if the social security scheme can contain administrative expenses it could ultimately increase pension benefits.

Others believed that the experiences of other countries suggested that Ghana was not alone with such problems in running a social insurance scheme. That, if the problems were identified, an effective mechanism could be devised to deal with them and make the social security scheme work better. (Kumado & Gockel, 2003).

4.4.3. Analysis of the three-tier scheme introduced in 2010

There is no one perfect approach to the establishment of a pension system. In other words there is no one-size-fits-all approach. (George, 2014). Each country has its own unique culture, history and level of development to cope with. There is therefore the need to fashion out an appropriate mix of a social insurance pension system suitable to Ghana. (Kumado & Gockel, 2003). In other words, customization of a pension reform was the way to go.

In the final report of the presidential commission submitted in 2006, the three-tier pension scheme was proposed as a new pension system for Ghana. This was accepted leading to the enactment of the National Pensions Act in 2008 and the formal implementation of the three-tier pension reform in Ghana in 2010. The details and features of the three-tier pension reform are described in detail in Chapter 2.

The three-tier scheme is modeled on the World Bank Multi-Pillar system. As discussed in Chapter 2, the Multi-Pillar system is made of a combination of five basic elements. The first is a noncontributory or zero or social pillar in the form of social assistance that provides a minimum level of protection for selected citizens. The second is the first pillar contributory system that is limited to varying degrees of earnings and aimed at replacing some portion of the worker's income in retirement.

The non-contributory or zero or the social pillar is practiced in Ghana is called the Livelihood Empowerment Against Poverty (LEAP) programme. Under this programme identified poor households are selected and a monthly cash benefit is paid to them. The coverage is very limited and the payment is not regular.

This second pillar is the first tier mandatory defined benefit scheme of the three-tier scheme introduced in Ghana and managed by the state social security scheme (SSNIT). The third pillar is essentially a mandatory individual savings account and this is the second tier of Ghana's three-tier pension scheme. It is a mandatory occupationally based defined contribution scheme which is privately managed. Further, it is based on the market.

The fourth is the voluntary third pillar arrangement which can take many forms. It could be done by the individual alone by joining a private pension scheme or it could be set up by an employer as an employer sponsored scheme for all the workers of the employer. It could be organized as a defined benefit or a defined contribution scheme.

The third voluntary pillar could also be a hybrid plan. Its main feature is that it is flexible and discretionary.

As indicated in Chapter 2, in section 2.2.8.4, those who are disqualified by age from joining the first tier scheme for monthly pension and the informal sector workers under the third tier are required to use 75% of their lump-sum to buy an annuity so that they can also get some periodic monthly pension. Unfortunately, despite the fact that the three-tier scheme had been implemented in Ghana since 2010, a period of over 10 years now, not a single insurance company has developed any annuity product.

Thus, the involvement of the private sector or the privatization which is expected to drive the full implementation of the three-tier pension scheme has not achieved its full objectives. The Majority of the working population will retire and have no safety net of regular source of income to take care of their basic necessities of life. Further another inequality in terms of non-availability of monthly pension benefits for those in the informal sector is being created in the new three-tier pension system.

The World Bank's five Multi-Pillar pension system prescribed the fifth pillar as informal intra family or intergenerational sources of both financial and non-financial support. These include access to healthcare and housing (Holzmann & Hinz, 2005).

The fifth pillar component of the three tier pension system introduced in Ghana was implemented in a customized manner. Ghana has used its national health insurance scheme to implement the healthcare component of the fifth pillar of the Multi-Pillar pension reform recommended by the World Bank. The national health insurance scheme was introduced in 2006. Its aim is to provide a universal healthcare coverage for all residents.

The target coverage is all residents of the country. This means both national and foreigners living in Ghana are enjoined by the law setting up the scheme to belong to a health insurance scheme.

The legislation, National Health Insurance Act, 2005, set out the legal framework for the operation of one national health insurance scheme for the whole country and privately operated commercial health insurance and mutual insurance schemes.

The national health insurance scheme component is financed from three sources namely; tax revenue (the National Health Insurance levy), premiums and 2.5% of the social security contribution of every member of the first tier social security scheme of the three-tier pension scheme.

Thus, by contributing part of the social security contribution to finance the healthcare, every member of the social security scheme whilst working enjoys healthcare and on retirement continues to enjoy healthcare under the national health insurance scheme without payment of premiums.

In addition, there is a social protection component of the national health insurance scheme. This included free primary healthcare for children under 18 years and the elderly from age 70. There is also free maternal care for pregnant women. The poor and the vulnerable are also provided with free health care under the program.

The identification of the poor and vulnerable is linked to other pro-poor interventions and programs such as the social assistance periodic cash transfer program. This is the program referred to earlier as the Livelihood Empowerment Against Poverty (LEAP).

The housing component of the World Bank's five Multi-Pillar schemes is introduced under the three-tier pension scheme in Ghana in the form of pension backed mortgage security. The national pensions Act which set up the three-tier scheme provides that a worker can use the accumulations in the second tier or third tier scheme as security for a dwelling house.

Some of the private pension schemes have taken advantage of this provision to provide pension backed mortgage facilities for their members. Under the programme monies are advanced to banks for on lending to workers as mortgaged loans. Members of the scheme can identify a dwelling house on sale or long lease for acquisition under the mortgage facility.

The member can then apply to the bank to finance the acquisition of the dwelling house through the mortgage arrangement. The member makes the monthly repayment of the mortgaged loan to the bank over a minimum period of 15 years or more. Meanwhile the members' accumulation in the second or third tier pension scheme provides further security under the mortgage.

The rationale for this arrangement is to help workers acquire their own homes whilst working. However, affordable houses as compared to the incomes of workers are not available to enable many workers to take advantage of this opportunity.

4.4.3.1. Investments under the three-tier pension scheme.

In terms of investment, the National Pension Regulatory Authority (NPRA) sets up limits for prescribed areas of investment of the second tier mandatory and the third tier voluntary schemes. A close analysis of the areas of investment and the allowable limits in terms of portfolio allocation, revealed a skew towards fixed income especially government of Ghana securities.

The pattern is reflective of the nature of the Ghanaian economy and the limited investment opportunities for the private fund managers to construct their asset allocation and achieve the best returns for scheme members. Table 4.13 below shows the NPRA allowed areas of investment approved and their limits for the 2021 financial year i.e. January- December 2021.

Table 4.13: shows 2021 NPRA approved areas of investment and their maximum limits for investment of second and third tier scheme funds.

APPROVED AREA OF INVESTMENT	MAXIMUM LIMIT
Government of Ghana Securities	60.00%
Local Government & Statutory Agency securities	15.00%
Corporate bonds	35.00%
Fixed deposits	35.00%
Equities	20.00%
Collective investment scheme	15.00%
Alternative investments	15.00%

Source: NPRA

Additionally, the interest rates offered by the financial institutions such as banks on their fixed deposits or savings and those offered by asset management or investment companies are all lower than the interest rate of government 91 day Treasury Bill and the 182 day Bills. Annual inflation rates are also high.

This development leaves very little room for pension fund managers to maneuver in the market. It also affects individual retired workers in the sense that after collecting a lump sum benefit in a defined contributory scheme, there are no varied areas for investment to earn a real periodic income above the inflation rate.

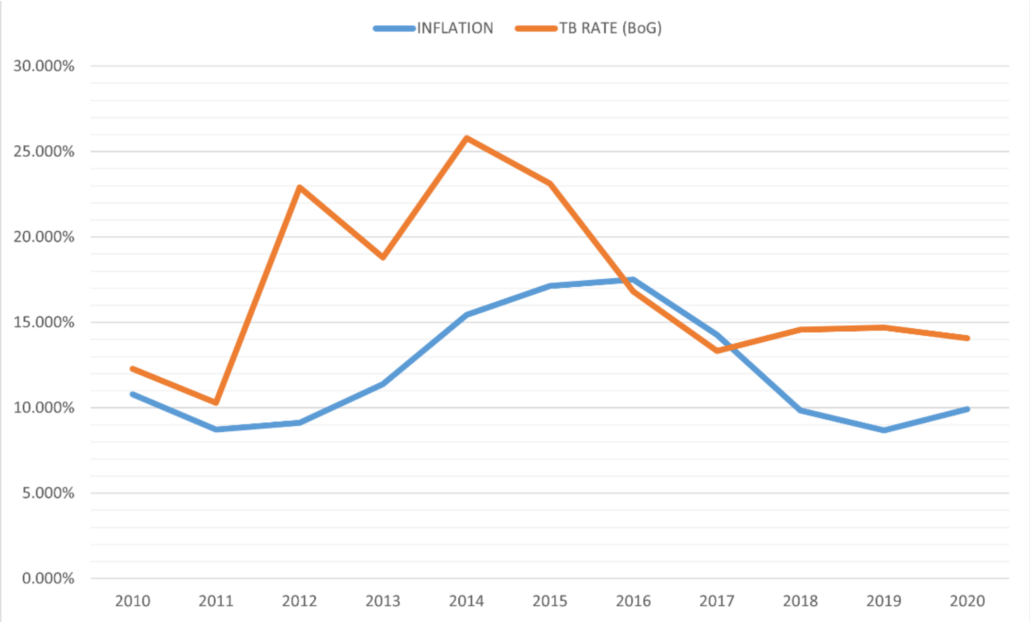
Table 4.14 below indicates the position of the average annual of 91 day T.B interest rate and the annual average of inflation from 2010 – 2020. The period 2010 – 2020 is relevant because the implementation of the new three-tier pension scheme in Ghana started in January, 2010.

Table 4.14: Annual average of 91 day TB interest rate and annual average inflation rate from 2010 – 2020 in percentages (%).

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
91 – T.B rate in %	12.27	10.30	22.90	18.80	25.79	23.12	16.81	13.33	14.56	14.69	14.08
Inflation rate in %	10.79	8.73	9.13	11.37	15.45	17.13	17.52	14.26	9.85	8.67	9.92
Real returns %	1.48	1.57	13.77	7.43	10.34	5.99	-0.71	-0.93	4.71	6.02	4.16

Source: Compiled by the researcher from data from Bank of Ghana

Figure 4.2: Comparison of Annual coverage of TB Rate and inflation rate from 2010 -2020



Source: Constructed by the researcher from Bank of Ghana data.

Table 4.14 and Figure 4.2 indicate that the annual average inflation had been declining since 2010 with the exception of 2016 and 2017 when the inflation rate exceeded the annual average of 91 day TB Rate. This trend shows a fluctuating level of the real rate of returns on investment in government securities.

Despite the fact that it is only the 91 day TB rate that offers the best quick and secure returns, its availability is also limited. The Bank of Ghana which is the Central Bank does a weekly auction of what is available for that week. The limited licensed auction buyers in turn sell to financial institutions including banks and other asset management companies to sell to various investors including pension funds and individuals (http://www.org.gov.gh).

The performance of the recently established bond market however seemed to be encouraging. This is part of the government financialization programme to facilitate the development of the fixed income market to take advantage of the accumulation of pension funds through privatization.

This is reflective of the allowable limit of investment approved by the NPRA for this sector as demonstrated in Table 4.13. It shows that as much as 35% of pension funds available for investment can be invested in fixed income securities.

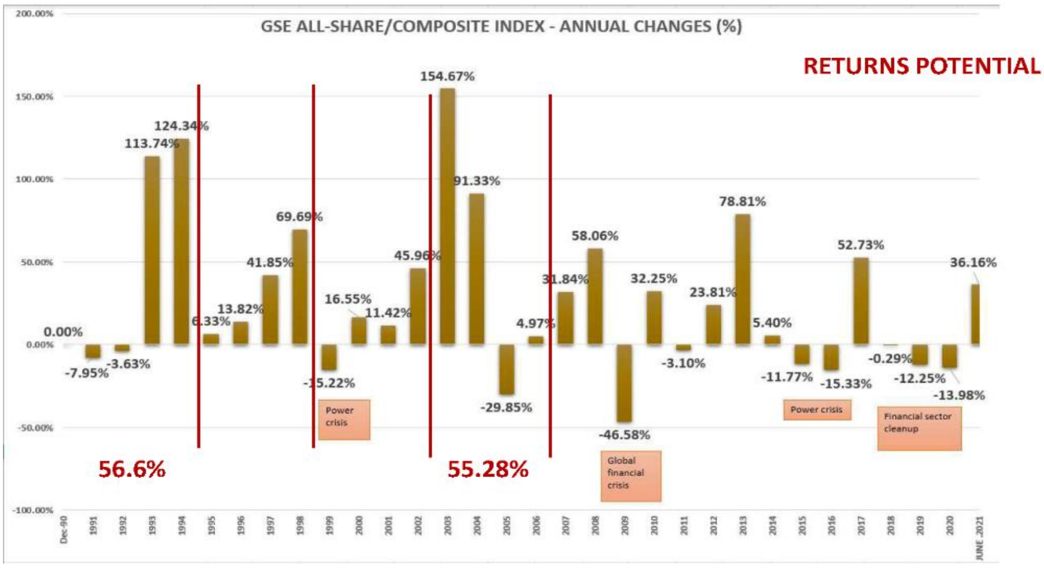
Perhaps, the poorest performing sector is equity investment. The performance of the listed companies on the Ghana Stock Exchange (GSE) does not encourage investment in stocks. It has been established through the study of daily and monthly stock prices and returns on the exchange that most equity stocks listed on the Ghana Stock Exchange are not sensitive in terms of returns to the composite index of the exchange.

A composite index is a statistical tool that measures the overall market performance of the stock exchange when the different equities are grouped together. (Amfo – Antriri & Quansah, 2017). The study further shows that investors can only benefit from the exchange by constructing portfolios that consist of equities from the financial sector and other non-financial sectors which are not insensitive in the long run.

The Ghana Stock Exchange (GSE) itself describes its composite index (GSE-CI) as a major stock market index that tracks the performance of all companies trading on the exchange. It is a capitalization weighted index with a base value of 1000 fixed as at 31 December 2010 (htt://gse.com.gh).

The overall performance of the Ghana stock exchange is reflective of the allowable percentage of investment of pension funds in equities as set by the NPRA. This is 20% of the total prescribed areas of investments. Figure 3 below shows the performance of GSE from 1990 – June 2021. It shows a consistently fluctuating negative and positive performance over the period.

Figure 4.3 performance of the Ghana Stock Exchange for the period Dec. 1990 – June 2021



Source: Ghana Stock Exchange.

The privatization of the mandatory second tier and the voluntary third tier of Ghana's new three- tier pension system, has introduced financialization into the pension industry. By this, various financial and investment intermediaries including banks and investment or asset management companies now play a major role as custodians, investment advisors and fund managers for the private pension schemes.

Moreover, several new jobs have been created through the implementation of the new three-tier pension system. The 2019 annual report of the NPRA revealed that 241 private pension schemes were registered from inception in 2010. These schemes were being administered by 30 corporate trustees, 1,046 individual trustees, 15 pension fund custodians, and 49 Pension fund investment advisory companies.

In terms of growth in the pension funds available for benefits, the total pension funds of all the three tiers for 2018 was Gh¢ 22.20 billion or USD 3.89 billion. This represents 7% growth over the year 2019 which recorded an increase of 18.5% over that of 2018 with Gh¢ 26.30 billion or USD 4.61 billion over 2017 growth.

Out of the Gh¢ 26.30 billion (USD 4.61 billion), the first tier, which is the state social security scheme being operated by SSNIT contributed Gh¢ 8.9 billion or USD 1.56 billion. The fairly new mandatory second and third tier voluntary schemes both being privately managed contributed Gh¢ 17.30 billion or USD 3.04 billion. (NPRA Annual Report, 2019).

It must however be added that, the privately managed second and third tiers have not fully commenced the payment of benefits in large numbers to the scheme members. The majority of scheme members will begin to take the retirement benefits under the second and third tiers in 2020 and that is ten years after the commencement of the three tier pension scheme in January 2010.

There is no dispute that there is an impressive growth of the pension funds. However, the allowable areas and limits of investment as depicted in Table 4.13 clearly revealed that areas for wider diversification of investment of the funds in the local Ghanaian economy are limited.

Even though the National Pension Act, 2008 Act 766 which sets up the three tier pension scheme, permits external investment of pension funds available for investment, the NPRA has not included any areas for external investment. The power to decide which portion of the pension fund to invest externally is vested in the NPRA to be exercised on the advice of the Minister of Finance.

The arguments advanced so far for not permitting external investment of the pension funds include fear of losing the investment. Others argue that the local Ghanaian economy requires many funds for investment to expand the economy and create more job opportunities. As a cycle, if more job opportunities are created in the economy, more workers will join the three tier pension scheme and contribute to increasing the value of the funds.

On the contrary, seeking the best secured and good returns on investment is the way to pursue the best financial interest of the members of the pension scheme. This is because, with the privatization and financialization of the pension industry, the adequacy or sufficiency of the pension benefit depends on the performance of the investment market. The market risk is on the individual members of the scheme.

Thus, if investments do not do well or the investment opportunities are not available in the local Ghanaian economy, it is the individual contributor who will be disadvantaged at the time of retirement. It is therefore important for the NPRA and the Finance Ministry of Ghana to carefully consider and permit some external investment with clearly prescribed guidelines for the pension schemes to follow in making offshore investments.

For instance, the retirement Benefits Authority which is the pension regulator in the Republic of Kenya, an African country like Ghana, recently amended its investment guidelines permitting pension funds to invest up to 10% of their assets in infrastructural ventures executed through consortiums. This led to the incorporation of the Kenya Pension Funds Investment Consortium (KPFIC) in 2015.

The consortium of Kenyan retirement funds work together with foreign pension investment funds as co-investors to collectively invest in long term infrastructural projects as an alternative asset investment. These are huge projects with very good returns but involving huge capital outlay and expertise which local Kenyan individuals or a few collective pension funds cannot undertake.

With such a strategy, the consortium can partner foreign co-investors and share infrastructural investment expertise and benefits. Through this process, the investment capacities of the individual pension funds are enhanced by learning from the foreign co-investors who are investment experts. (hhtps://kepfic.co.ke)

However, the restriction on external investment of pension funds based on the localization argument does not seem to be a case for Ghana alone. As far back as 1994, an OECD Development Centre Policy Brief made the case urging the OECD countries to consider removing regulatory constraints imposed on pension assets that deprive retirees of the pension improving benefits of global diversification.

Jean Bonvin, President of the OECD Development Centre also in January 1997 in a preface to OECD Working Paper No. AWP 5.3 on the liberalisation of foreign investment by pension funds observed on page 7 as follows:

"The ageing OECD member countries can avoid part of their demographic problems by investing in emerging economies. Helmut Reisen argues that the developing countries can also spread some of their idiosyncratic risk derived from higher exposure to country – specific shocks by investing some of their pension assets abroad".

Jean Brown further pointed out that cross –country evidence from Latin America which started pension privatization early, revealed that limiting foreign investment of pension funds on grounds of financial development arguments can hardly be justified. The argument for restriction can however hold for a specific time when transitioning from unfunded to a fully funded pension arrangement due to the initial fiscal costs involved in the transition.

Thus, the localization argument for not investing in pension funds abroad is not a strong point. The NPRA in Ghana will have to reconsider its position on off-shore investment.

4.5. Payment of pension benefits under the three-tier pension scheme.

As stated earlier, the first larger group of retirees under the new three-tier pension scheme was due to be paid their full retirement benefits in 2020. This is because the law that set up the scheme exempted all those who were aged 50 years as at 1 January, 2010 and above from the new scheme.

Further, the compulsory retirement age in Ghana is 60 years so it was in 2020 that the first larger group of retirees qualified to receive retirement benefits under the new scheme. Again, as indicated previously the main objective of the introduction of the new scheme was to ensure every worker belongs to a pension scheme and to make pensions better and more particularly to make the lump sum component of the pensions better for all workers.

The payment started in 2020 but the expectations of retirees as promised were not met. This development led to a complete expression of dissatisfaction with the retirement benefits especially with the lump sum component. The dissatisfaction was expressed by the labour unions and captured in many forms including the media across the country.

The Daily Graphic, a National daily newspaper of 26 November, 2020 captured it as follows "2020 Retirees worse off: they earn less under pension reforms. Workers retiring this year have turned out to be victims of the pension's reform that promised better retirement income, only to deliver less than what its predecessor gave to retirees". (Appendix 4).

In the story under the above caption, a worker retired as a Deputy Director in the public service under the new three-tier scheme after working for over 38 years. The retiree was paid a lump sum of Gh¢ 16,019.70 comprising Gh¢ 10,019.70 as past credit from the social security scheme and Gh¢ 6,000 from the second tier of the new three-tier scheme which is responsible for the lump sum component of the three-tier pension scheme.

Another worker who is a subordinate of the Deputy Director also retired under the old (1991) social security scheme and was paid a lump sum component of the retirement benefit in the sum of Gh¢ 62,607.23. This worker had also contributed to the social security scheme for 38 years.

This development became a country-wide issue. Many retirees were paid under the new scheme with the same lower lump-sum as compared with the lump-sum under the old social security scheme and under CAP 30 which is still in operation but limited to prescribed categories of public sector workers including the security services.

As a result, labour agitation ensued. The Government of Ghana had to intervene. The government assured public- sector retirees of payment of shortfalls that resulted from the differences between the 25% lump sum under the social security scheme and the total lump sum received under the new three-tier scheme.

This development led to the need to ask the question of whether the much expected improved retirement income which was a major objective of the 2008 major pension reform in Ghana had been achieved. It was so with the previous pension reforms discussed earlier which necessitated further reforms. Indeed this is the very basis of this study.

4.6. Testing of hypothesis

This trend of undertaking one reform only to undertake another within a short period because of the same reason of insufficiency of retirement benefits is the subject of this study. The hypothesis, pension reform does not guarantee an improved pension benefit is to test the relationship between pension reform and pension benefits. For purposes of emphasis and clarity, the main hypothesis comprising the null and the alternative are stated as follows:

Null (Ho) – pension reform does not guarantee improved pension benefits

Alternate (Ha) – pension reform is a guarantee for improved pension benefits. The study proceeded to test the null hypothesis.

The study used a qualitative methodology complemented by a quantitative approach to compare pension benefits under the 1991 reform social security scheme and the 2008 new three-tier pension scheme. The new scheme commenced payment of full pension benefits to the larger group of retirees from January 2020.

As presented in section 4 .3.1, of this Chapter, two groups of 200 retirees each under the 1991 social security reform scheme (the old scheme) and under the 2008 new three tier scheme (the new scheme) were selected as the population size for the study. All the retirees have been paid full pension benefits under each of the schemes for the same period. (2017 – 2019).

The profile and other relevant information about the respondents were analysed and classified in terms of their age, gender, level of education, the sector they worked in (public or private) and the period they contributed to the pension scheme under which they retired. Each respondent was requested to indicate the level of satisfaction with the lump sum component of the pension received as well as the monthly pension received under both the old and the new scheme respectively.

The levels of satisfaction were ranked in terms of superiority and in a way that will focus on testing the null hypothesis which is pension reform is not a guarantee for improved pension benefits. Thus, strongly dissatisfied is ranked highest with 1, followed by dissatisfied 2, neutral 3, satisfied 4 and strongly satisfied 5.

The qualitative information gathered was converted into descriptive statistics using central distribution processes to ascertain the mean, standard deviation, median, minimum and maximum distribution in terms of monthly pension and lump sum payments under the old and the new schemes. This was based on the selection of retirees of each of the two schemes and also on the gender distribution of male and female retirees or pensioners under each scheme.

4.6.1. Testing of data normality

As the data collected individually cannot produce any important conclusion, summary statistics of the data has to be undertaken. This involves the analysis, presentation and interpretation of the data.

The Descriptive statistics approach which summarises the data from each of the groups of retirees under both old and new schemes by describing the basic features of the data understudy using measures of central tendency (mean, median, standard deviation) was used. Measures of frequency or the number of times that each variable occurs were also used.

The descriptive statistics were combined with inferential statistics which draws conclusions from data that are subject to variations. The use of the inferential statistics helped in drawing the necessary conclusion from the study of the sample size of the population of the selected group of retirees under both schemes for generalization about all the retirees under both schemes.

In order to draw the relevant inferences or interpretation of statistical information, statistical methods that are used include assumptions. One of the major assumptions is the normality of the data. (Mishra et al, 2019).

Assessment of the normality of data or how evenly distributed data understudy is presented is an important prerequisite in statistical tests. This is because normal data is considered to be an assumption in parametric testing which assumes a normal distribution of values. In other words, it is assumed that data from the sample population size comes from a population that is adequately representative of the population. (https://www.sciencedirect.com).

Generally, there are some deficiencies in the measurements used in descriptive statistics. The measures of central tendency which uses mean, median and mode to find out about the representative value of a data set have demerits. In using the mean or median to make comparism between two or more groups, the representative values of the groups are determined and compared.

The comparism of the representative values helps in doing further statistical analysis to determine the measures of dispersion, skewness, correlation, t-test and others of the data based on the measures of central tendency. Thus, a representative value from a measure of central tendency can be described as good or bad. It is good when it is calculated using all the observations and also when it is not affected by extreme values or outliers. This is because measures of central tendency are used to do further analysis.

The Mean for instance is the mathematical average value of the set of data. It is the sum of all the observations divided by the number of observations. However if there are individual extreme values or outliers in the data set, the mean becomes unreliable as a fair representative value of the group.

On the other hand, the median which is the middlemost observation of the data, if arranged either in increasing or decreasing order, is not affected by extreme values or outliers. It is thus unique as there can be only one median in a data set for purposes of comparism between groups. However, the only demerit of the median over the mean is that the median is not popular as the mean. The mode is not normally used because in a data set, there can be none or more than one.

In deciding whether to use the mean or the median, it is the normality of the data which determines which of the two measures of central tendency should be used. That is to say, whether the mean or median should be used for the statistical testing. (Mishra et al, 2019).

Where the data follow a normal distribution, the mean value is used. It is important to emphasize that it is the operative value like the mean which is used for comparism between or among the groups to calculate the significance level of the p-value in the testing. Therefore where the data is not normally distributed the resultant mean cannot be considered a true or fair representative value of the data set.

The use or selection of the wrong mean as a representative value of a data set which is further used to calculate the significant level or the P-value will lead to a wrong interpretation or conclusion. This is the reason why it is necessary to first test the normality of the data before deciding whether to use the mean as the applicable representative value of the data or not.

If the mean is applicable to the situation, then the mean values of the groups are compared using the parametric test. A parametric test assumes that the population size under study is normally distributed. Where the mean is not applicable, medians of the groups are compared using non-parametric methods. The non-parametric tests are distribution free and therefore can be used for non-normal variables.

On the contrary, the central limit theorem stipulates that when the sample size has 100 or more observations, violation of the data normality rule is not a major issue. According to this theorem, the sampling distribution of the sample mean gets closer to a normal distribution of data as the sample size gets larger no matter the shape of the population distribution or size. (https://www.statisticshowto.com ; Ghasemi, 2012).

However, data from the pension payroll of the national social security pension scheme administered by SSNIT includes the group of 200 retirees selected from the old and new schemes. The ten highest pension amounts and the ten lowest pension amounts being paid to pensioners as of February 2021 revealed the following as stated in Table 4.17.

Table 4.17: Comparism of the ten highest and the ten lowest monthly pension amounts on the SSNIT pension payroll as at February 2021.

No	Ten Highest Gh¢	Ten Lowest Gh¢
1.	129,979.51	459.46
2.	98,911.26	454.48
3.	65,201.59	308.05
4.	58,333.66	306.23
5.	52,566.95	302.18
6.	47,786.05	302.18
7.	42,351.62	301.24
8.	41,630.55	300.64
9.	38,461.33	300.02
10.	37,264.82	300.00

Source: SSNIT

Indeed Table 4.17 above and the comparism of the monthly pension and the lump sum amounts in Appendices 2 and 3 suggest that there are cases of extreme values or outliers in the data set of the two retiree groups under consideration (old and the new schemes). On this basis and in order to arrive at a meaningful conclusion of the hypothesis testing, the assumption of normality or the testing of the normality of the data distribution was considered appropriate in the process of testing the hypothesis.

Two methods are used in assuring the normality of data. One is a graphical method that has the advantage of allowing good judgment to determine normality in the data. The other is a numerical or statistical test which makes an objective assessment of normality but is often not sensitive enough when the sample size is small.

Various methods are used in testing the normality of data. They include the Shapiro-Wilk test, skewness, kurtosis, histogram, boxplot, P-P Plot, Q-Q Plot and mean with standard deviation. In this study, the box plot, Q-Q plot and the Shapiro-Wilk methods were used in testing the normal distribution of the data on the two groups of 200 retirees each under the old and the new schemes

Further, with the aid of a boxplot the descriptive data gathered from the respondents were plotted to ascertain the dispersion of the data and outliers. A boxplot which is also referred to as a box-whisker plot is a graphical method of displaying variations in a set of data. It provides and allows more details in multiple sets of data to be displayed in the same graph.

A boxplot standardizes the display of the distribution of databased on a five number summary. The first is the minimum value or the smallest value in the data set. The second is the first quartile (q1) which is the value below which the lower 25% of the data under consideration is contained. The next is the median value which is the middle number in a range of numbers.

The fourth is the third quartile (q3) which is the value above which the upper 25% of the data are contained. Finally, the fifth is the maximum value described as the largest value in the data set under consideration. (Galarnyk 2018; https://asp.org/quality-reswourec/box-whisker-plot).

Boxplots can summarise data from multiple sources and show the results in a single graph. It is easy to read and also effective. It allows comparism of data from different categories for easy decision making. Boxplots can compare data sets from different sources that are related to each other in the same way.

Boxplots are therefore useful in comparing data from before and after a process change or similar features on one part of the same thing or data from duplicated processes. A boxplot can provide information about outliers that are numerically far away from the rest and what their values are in a data set. It can determine whether the data is symmetrical or exactly similar or equal. How closely the data is grouped and whether the data is skewed or distorted are the other things a boxplot can reveal. (Mahto, 2020).

On the other hand, a boxplot in most cases does not clearly show the original data. The mean and the mode cannot also be identified in a boxplot. Others believe it is confusing and used only for numerical data.

However, the choice of the boxplot in the analysis is considered appropriate because it helped in comparing the pension benefits under the old (which is before) and the new three-tier scheme (that is after the reform). It brought out outliers and how the data is distorted as well as similarities.

The quantitative analysis of the figures was gathered on the real pension amounts in monetary terms for monthly pensions and lump-sum paid under both schemes. These supplemented the analysis of the evaluation and the testing of the hypothesis based on the qualitative analysis.

The boxplot uses the median. It shows the median as a horizontal line inside the box. The length of the box represents the range between the smallest number and the median of the data set and the value between the median and the highest value of the data set. The vertical line extending from the top to the bottom of the box represents the minimum and the maximum values from either end of the box.

The values that are outside the boxplot are considered as outliers and extreme outliers respectively. A boxplot that has its median line at approximately in the centre of the box and symmetric or equal to the vertical line extending from the top to the bottom of the box indicate that the data is normally distributed. Where there are many outliers, then the data is not normally distributed.

The Shapiro-Wilk test is another method, under this method, where the value of the test is greater than 0.05 the data is said to have deviated significantly from the normal distribution.

The Q-Q plot is a scatter plot that is created by plotting two sets of quantities to determine which values in the data distribution are above or below a certain limit. One quartile is considered as the expected distribution of the data and the other shows the actual or observed distribution of the data.

Where the observed data distribution is approximate to the expected data, the two are considered statistically equal and therefore the data is normally distributed. The reverse situation means that the observed and expected data distribution is not equal and therefore the data is not normally distributed.

The above three methods were used in determining the normality of the data distribution of the retirees under the old and the new schemes. They were also used to test the normality of the data distribution based on gender (male and female) of respondents in each of the two groups of retirees (old and new schemes). The results are presented in section 4.7 of this chapter.

The analysis for testing the data normality and the main hypothesis was done with the aid of a Statistical Package for Social Sciences software by IBM which is referred to as 'SPSS' statistical software. The software is able to analyse descriptive statistics and normality plots with tests among many other functionalities. (Appendix 5).

4.6.2. Testing of the main hypothesis

As indicated earlier, the outcome of data normality testing guides the choice of statistical method for the hypothesis testing. In other words whether to use a parametric test approach that is applicable where the data distribution is normal or employ a nonparametric test method where data distribution is not normal is determined by the results of the test of data normality.

The result of the normality test revealed that the data distribution of the group of 200 pensioners each selected from the old and the new pension schemes are not normally distributed. On the basis of this finding, a non-parametric test approach must be used to test the main hypothesis of the study.

However, the central distribution theorem discussed earlier also states that violation of the rule of data normality does not matter when the sample size is more than 100 observations. This is because as the sample size gets larger the sampling distribution of the sample mean gets closer to a normal data distribution.

Thus, data normality can be assumed and a parametric test method is also employed in testing the main hypothesis of the study. Consequently, parametric and nonparametric tests have been used in the hypothesis testing. These are the T-Test and the Mann-Whitney U Test.

The t-test is a parametric test of inferential statistics used to determine if there is a significant difference between the means of two groups that may be related in certain ways. It is one of the many tests used in hypothesis testing. The t-test assumes that the data sets under consideration are independent, they are approximately normally distributed and have similar amount of variance within each group being compared.

Further ,the t-test uses three key data values. These are the differences between the mean values from each data set which is also called the mean difference, the standard deviation of each group and the number of data values of each group (Hayes, 2020).

On the basis of the fact that the results of the data normality indicated that the data distribution is not normal, the need to employ a non-parametric test of the hypothesis arose. The Mann-Whitney, U test method was selected. The test stipulates that for randomly selected values X and Y from two populations, the probability of X being greater than Y is equal to the probability of Y being greater than X.

This test which is also known as Mann – Whitney Wilcoxon Test or Wilcoxon Ranks Sum Test, is used to test whether two samples are likely derived from the same population. In other words, it determines whether the two populations have the same shape. As a nonparametric test it compares the outcome of two independent groups and also uses the medians.

In terms of procedure, the observations from each of the two groups are pooled into one combined sample. Samples from each group are observed and then ranked from the lowest to the highest. (LaMotte, 2017).

4.7. Results of Exploratory Data Analysis and testing of Normality of the data using box plot, Q-Q plot and Shapiro-Wilk test.

4.7.1. Boxplot test Results

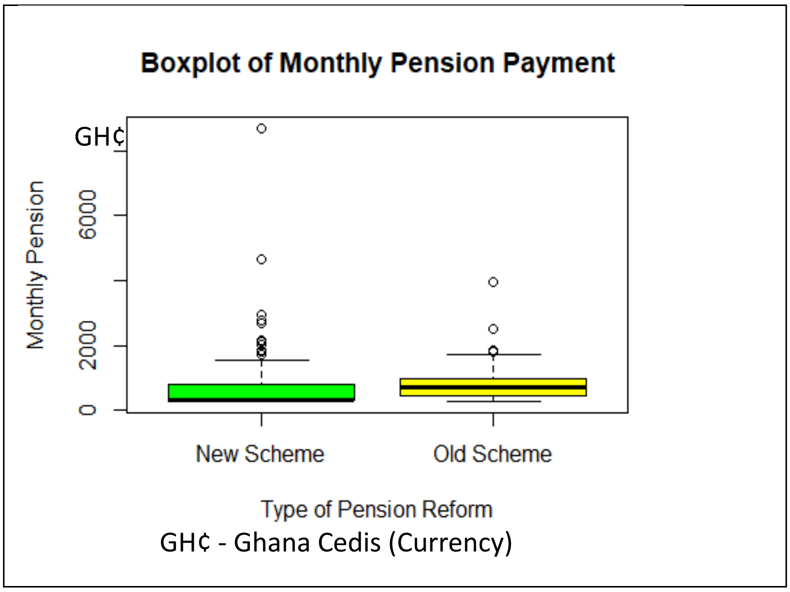
Table 4.15: Summary Statistics: Monthly Pension Payment

Pension Reform	n	mean	sd	min	median	max
New Scheme	**200**	**655.04**	805.33	276	327.00	8689
Old Scheme	**200**	**770.93**	450.01	276	714.50	3959

From Table 4.15, concerning the New Scheme, information was obtained from 200 pensioners. The range of monthly pension payment is from 276 to 8,689, with a mean of 655.04, a standard deviation of 805.33 and a median of 327.0. While for the old scheme, information was obtained from 200 pensioners. The range of monthly pension payment is from 276 to 3959, with a mean of 770.93, a standard deviation of 45.01 and a median of 714.50.

Thus, the pensioners under the old scheme have a higher average monthly pension payment and a lesser variability in monthly pension payment under the old scheme than that of the new scheme. Whether these observed differences in monthly pension payment reflect similar differences in all the pensioners and not just the ones included in the study will require further analysis of the data. This is done in subsequent work.

Figure 4.4: Boxplot of monthly pension payment of the new and old schemes



The thick lines in the yellow shaded portion in Figure 4.4 above and at the bottom of the green portion represents the median. Using the boxplot above, it is observed that the data appear to be skewed for monthly pension payments for pensioners under the New Scheme with a lot of outliers than pensioners under the Old Scheme. This indicates that the data is not normally distributed.

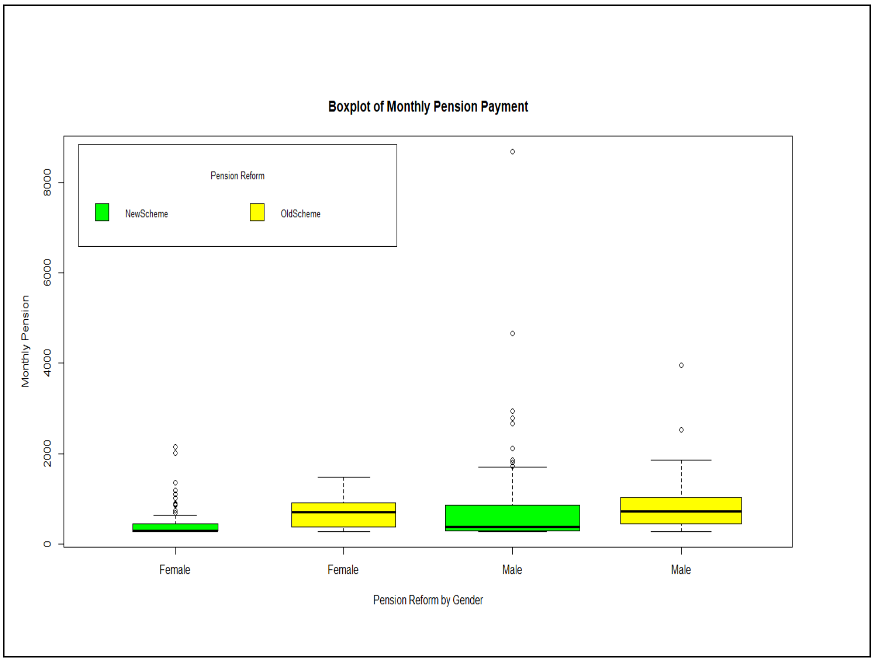
Table 4.16 Summary Statistics: Monthly Pension Payment by Gender

Gender	**Pension Reform**	**n**	**mean**	**sd**	**min**	**median**	**max**
Female	New Scheme	57	492.018	401.517	276	300	2154
Male	New Scheme	143	720.014	911.254	276	374	8689
Female	Old Scheme	85	704.918	327.979	276	709	1475
Male	Old Scheme	115	819.719	518.260	276	722	3959

From Table 4.16 concerning the new scheme information was obtained from 57 females out of the 200 respondents. The range of their monthly pension is from 246 to 2154 with a mean of 492.018 a standard deviation of 401.517 and a median of 300.00. For the old scheme, the total of females is 85 out of the 200 selected under the old scheme. The range of their monthly pension is from 276 to 1475 with a mean of 704.918, the standard deviation of 327,979 and a median of 709.

Male respondents under the new scheme are 143 out of the 200. The range of their monthly pension is from 276 to 8,689 with a mean of 720.014, standard deviation of 911.254 and a median of 374. Under the old scheme males are 115 out of the 200. Their monthly pension ranged from 276 to 3,959 with a mean of 819.719, standard deviation of 518.260 and a median of 722.

Figure 4.5: Boxplot of monthly pension of male and female of the old and new pension schemes.



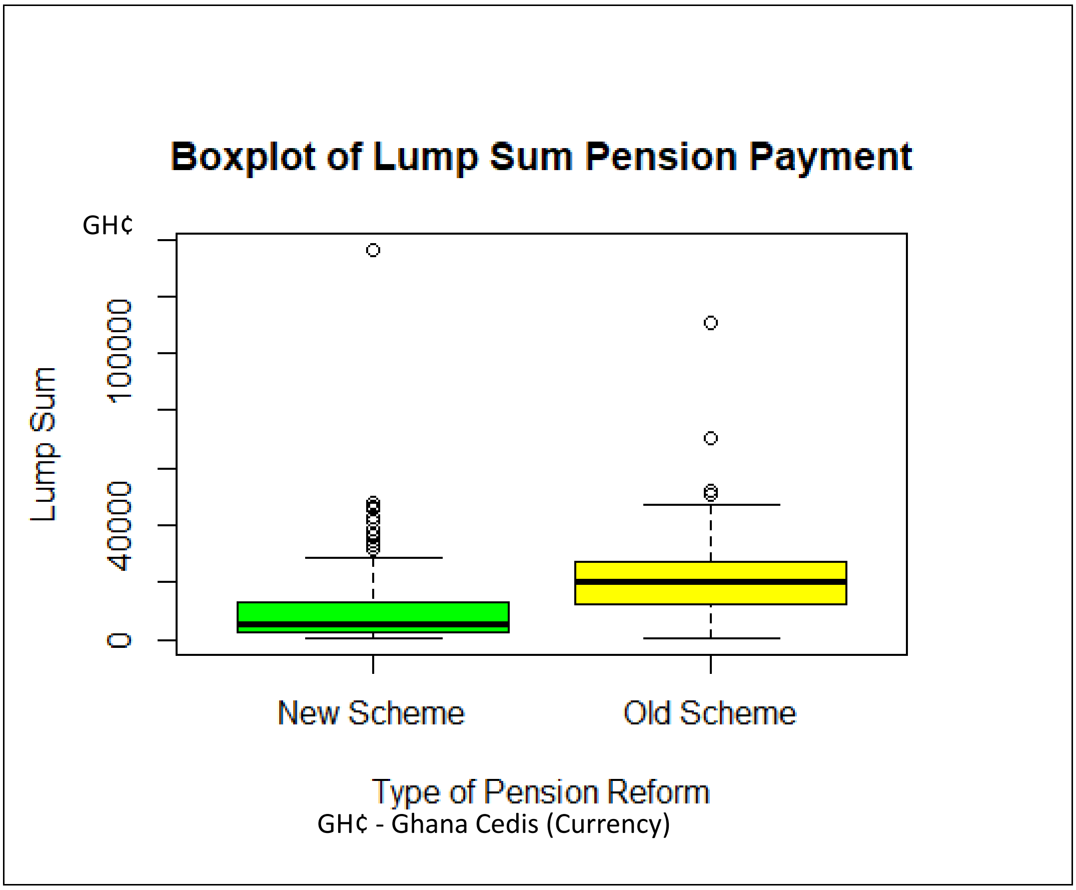
The boxplot (Figure 4.5) above shows that the data in respect of the new scheme contained extreme values or outliers for both female and male pensioners. Thus, the data cannot be said to be normally distributed.

Table 4.17: Summary Statistics: Lump Sum Payment under old and new schemes

Pension Reform	**n**	**mean**	**sd**	**min**	**median**	**max**
New Scheme	**200**	10088.69	13580.29	442	5659.5	136278
Old Scheme	**200**	21041.50	13165.95	681	20041.5	110438

From Table 4.17 information was obtained from 200 pensioners under each of the two schemes. The lump sum payment under the new scheme ranged from 442 to 136,278 with a mean of 10,088.69, standard deviation of 13,580.29 and a median of 5,659.50. The lump-sum payment under the old scheme ranged from 681 to 11, 0438 with a mean of 21,041.50, standard deviation of 13,165.65 and a median of 20,041.50.

Figure 4.6 Box plot of data distribution of lump-sum payment under the old and new schemes



The data distribution in Figure 4.6 above indicates there are extreme values or outliers in the data distribution of the lump sum payment under both schemes. This means that the data is not normally distributed.

Table 4.18: Summary Statistics: Lump Sum Payment by Gender under both new and old scheme

Gender	Pension Reform	n	mean	sd	min	median	max
Female	New Scheme	57	7598.193	8970.48	442	4507	46231
Male	New Scheme	143	11081.406	14941.12	1039	6391	136278
Female	Old Scheme	85	19084.306	10096.26	1300	19768	41144
Male	Old Scheme	115	22488.122	14916.83	681	20386	110438

Table 4.18 indicates the data distribution of lump-sum payment by gender (males and females). The column 'n' represents the total number of each gender under the new and the old schemes. The mean, standard deviation (sd), the ranges of the lump sum amounts from minimum (min) and maximum (max) and the median are presented.

Figure 4.7 Boxplot of data distribution of lump-sum payment by gender under both new and old schemes

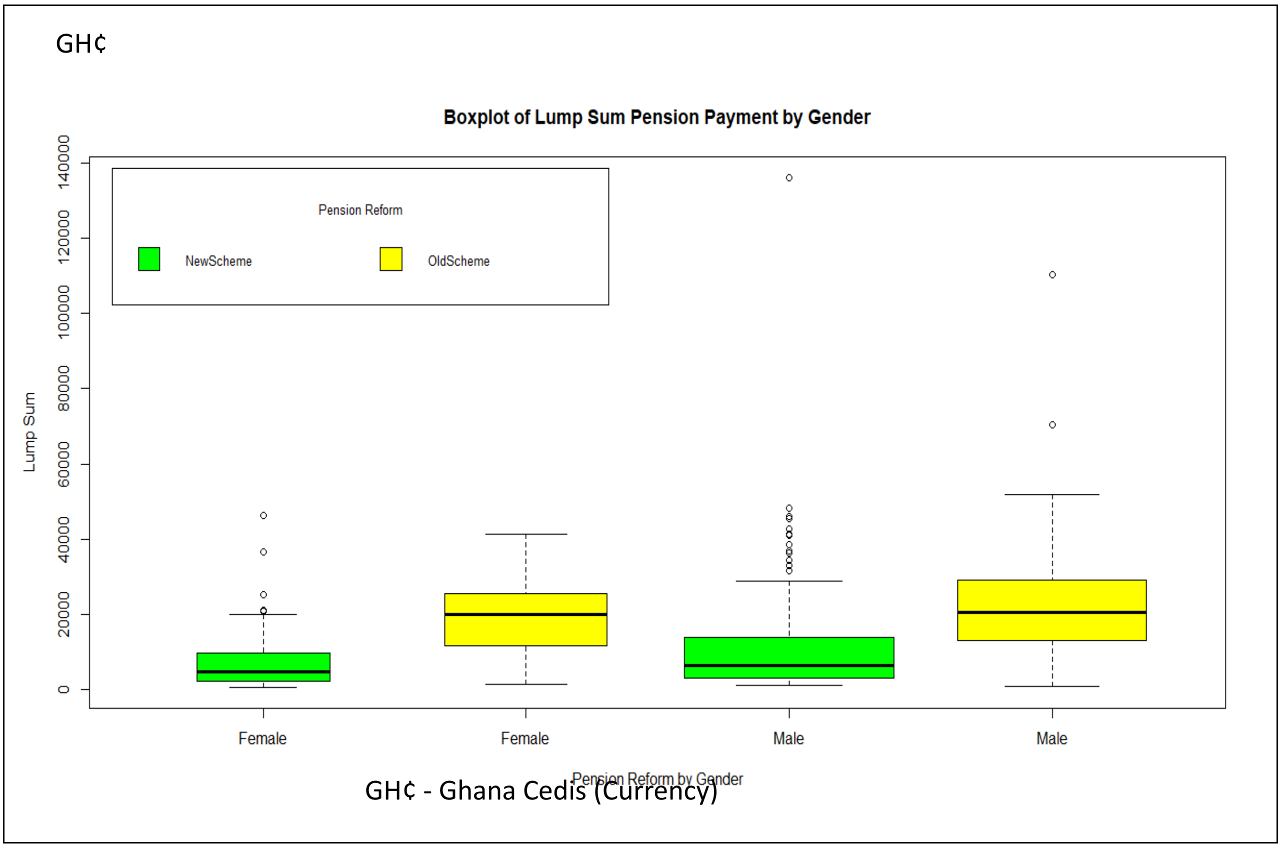
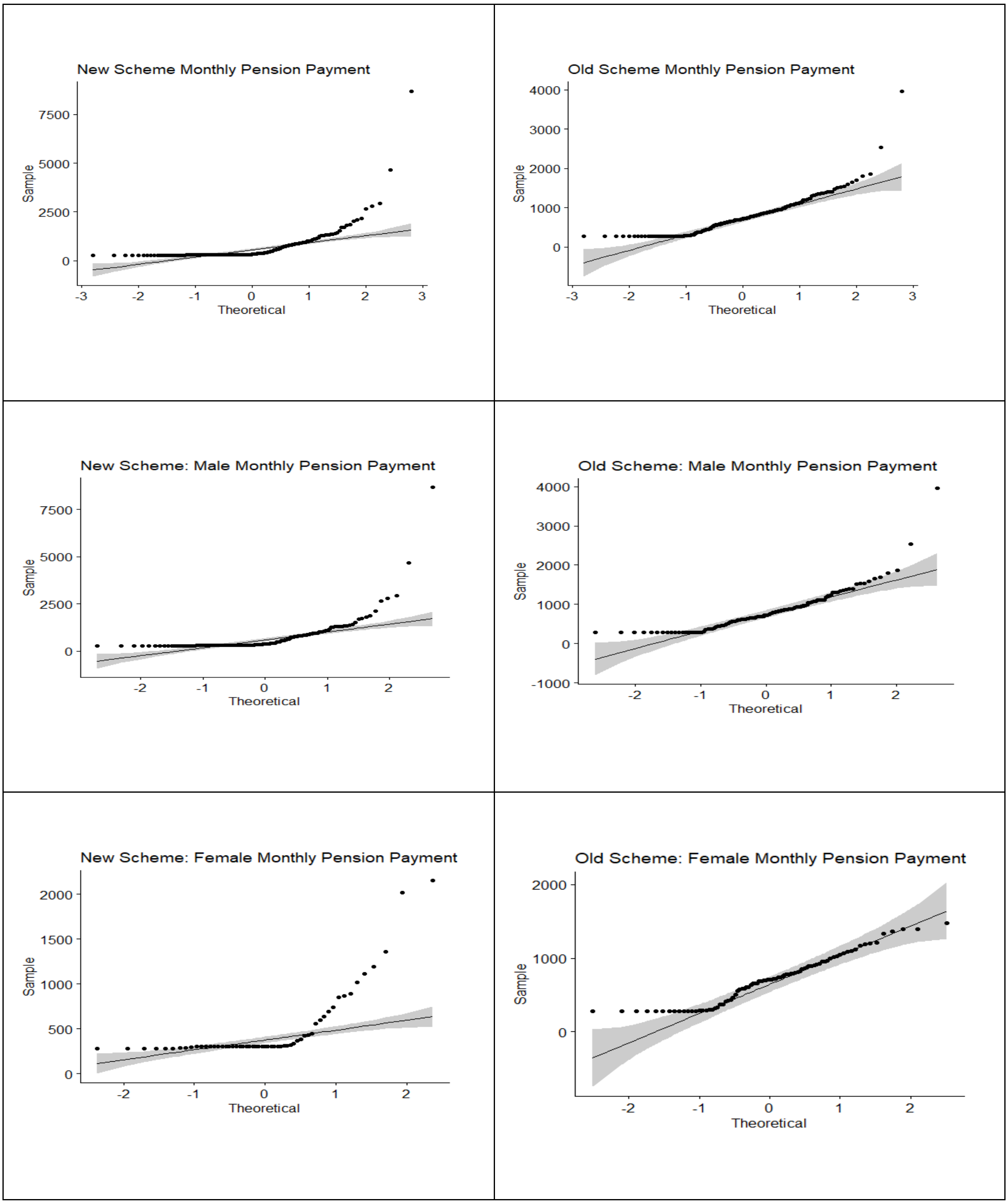


Figure 4.6 shows there are extreme values or outliers in the data distribution for lump-sum payment by gender. Therefore normality of data distribution cannot be assumed.

4.7.2 Result of data normality testing using Q-Q plot.

In Figure 4.8 below the continuous small line in the shaded portion represents the expected normal distribution of the data or the reference point. The observed or actual distribution of the data sets (the thick dotted lines) of monthly pension payments under both the old and the new schemes and by gender are expected to full approximately along the reference line in the shaded portion.

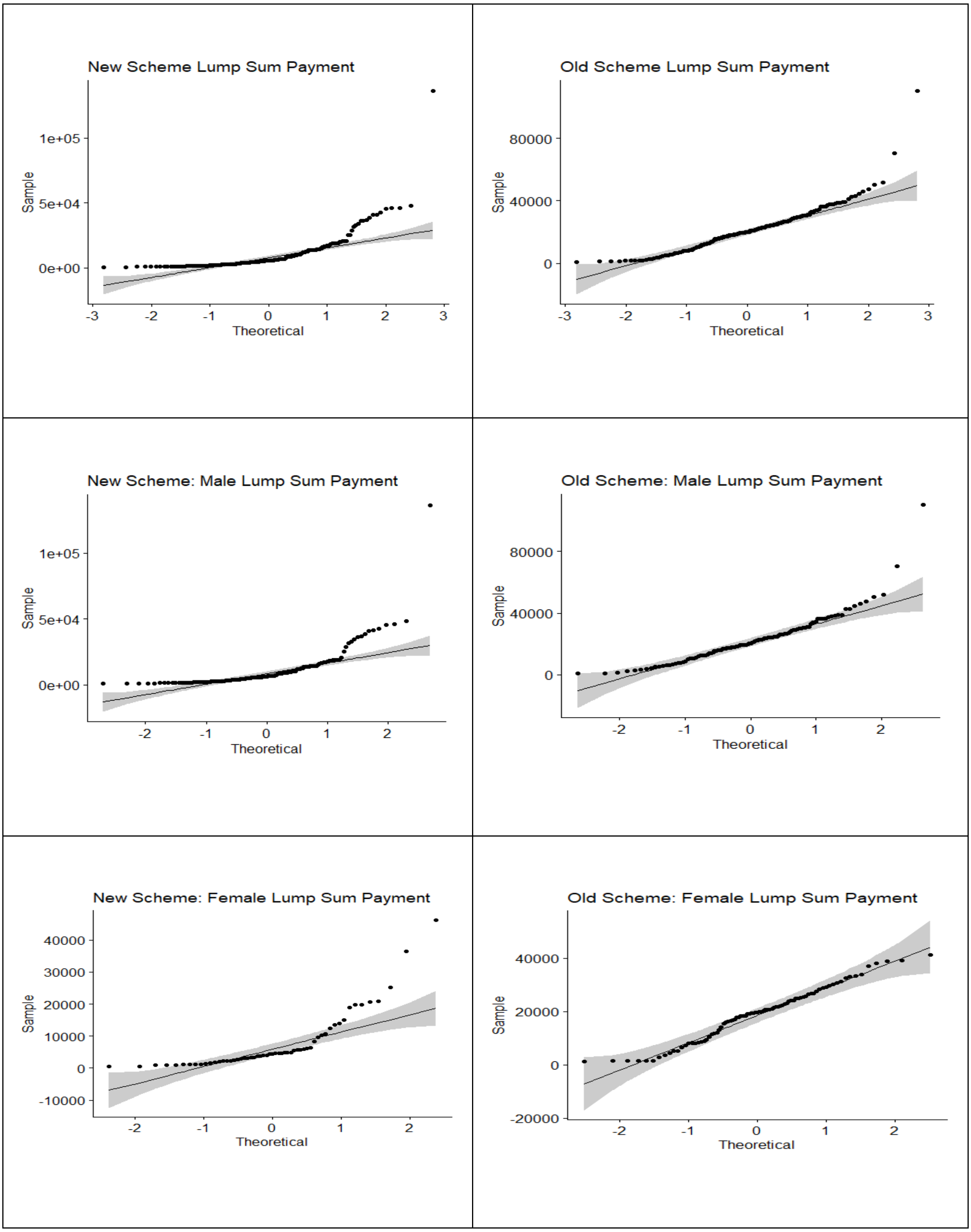
Figure 4.8 data distribution of monthly pension payment of new and old schemes and by gender (male and female)using Q-Q plot.



As not all the points fall approximately along the reference line, we cannot assume normality of the data distribution of the monthly pension payment.

4.7.3 Data Normality Test: (Q-Q plot) of lump-sum payment under new and old schemes and by gender (male and female).

Figure 4.6: Data distribution of lump-sum payment of new and old schemes and by gender using Q-Q plot.



As not all the points fall approximately along the reference line, we cannot assume normality of the data distribution of the lump-sum payment.

4.7.4 Data normality Test using Shapiro-Wilk test.

The hypothesis used for the testing:

Ho: Data follows a normal distribution

Ha: Data does not follow a normal distribution

Interpretation: P-value < 0.05 means data is not normally distributed.

(i) Monthly Pension Payment

Table 4.19: Presentation of results of monthly pension payment data distribution of old and new scheme and by gender

Monthly pension payment under the New Scheme

```
## # A tibble: 1 x 4
##   variable      statistic  p.value p.value.signif
##   <chr>             <dbl>    <dbl> <chr>
## 1 New_Scheme_mp     0.464 3.34e-24 ****
```

Monthly pension payment under the Old Scheme

```
## # A tibble: 1 x 4
##   variable      statistic  p.value p.value.signif
##   <chr>             <dbl>    <dbl> <chr>
## 1 Old_Scheme_mp     0.834 7.77e-14 ****
```

Monthly pension payment under the New Scheme for Male

```
## # A tibble: 1 x 4
##   variable       statistic  p.value p.value.signif
##   <chr>              <dbl>    <dbl> <chr>
## 1 New_Scheme_mpM     0.476 1.77e-20 ****
```

Monthly pension payment under the Old Scheme for Male

```
## # A tibble: 1 x 4
##   variable       statistic  p.value p.value.signif
##   <chr>              <dbl>    <dbl> <chr>
## 1 Old_Scheme_mpM     0.813 9.12e-11 ****
```

Monthly pension payment under the New Scheme for female

```
## # A tibble: 1 x 4
##   variable       statistic  p.value p.value.signif
```

```
##   <chr>             <dbl>    <dbl> <chr>
## 1 New_Scheme_mpF     0.579 1.58e-11 ****
```

Monthly pension payment under the Old Scheme for female

```
## # A tibble: 1 x 4
##   variable       statistic  p.value p.value.signif
##   <chr>             <dbl>    <dbl> <chr>
## 1 Old_Scheme_mpF     0.940 0.000641 ***
```

Table 4.20: Table of the result of the Shapiro-Wilk Normality Test of monthly pension payment data presented in the table 4.19

Data	n	statistic	p	p.signif
New Scheme	200	0.464	3.34e-24	****
Old scheme	200	0.834	7.77e-14	****
New scheme male	143	0.476	1.77e-20	****
Old Scheme Male	115	0.813	9.12e-11	****
New Scheme Female	57	0.579	1.53e-11	****
Old Scheme Female	85	0.940	0.000641	****

From the output in Table 4.20 above, all the p-values are less than 0.05. For instance the p-value for the new scheme is 3.34e-24< 0.05. This is because the expression 3.34e-24 means 3.34 proceeded by 24 zeros or with 24 zeros in front. It implies that the distributions of the data are significantly different from normal distribution. In other words, the normality of data distribution for monthly pension payment under both schemes and by gender cannot be assumed.

Table 4.21: Presentation Lump Sum payment data distribution of old and new scheme and by gender (male and female) results.

(ii) Lump Sum payment under the New Scheme

```
## # A tibble: 1 x 4
##   variable      statistic  p.value p.value.signif
##   <chr>            <dbl>    <dbl> <chr>
## 1 New_Scheme_ls     0.586 1.17e-21 ****
```

Lump Sum payment under the Old Scheme

```
## # A tibble: 1 x 4
##   variable      statistic  p.value p.value.signif
##   <chr>            <dbl>    <dbl> <chr>
## 1 Old_Scheme_ls     0.884 2.80e-11 ****
```

Lump Sum payment under the New Scheme for Male

```
## # A tibble: 1 x 4
##   variable       statistic  p.value p.value.signif
##   <chr>              <dbl>    <dbl> <chr>
## 1 New_Scheme_lsM     0.575 1.27e-18 ****
```

Lump Sum payment under the Old Scheme for Male

```
## # A tibble: 1 x 4
##   variable       statistic       p.value p.value.signif
##   <chr>              <dbl>         <dbl> <chr>
## 1 Old_Scheme_lsM     0.858 0.00000000426 ****
```

Lump Sum payment under the New Scheme for female

```
## # A tibble: 1 x 4
##   variable       statistic       p.value p.value.signif
##   <chr>              <dbl>         <dbl> <chr>
## 1 New_Scheme_lsF     0.713 0.00000000303 ****
```

Lump Sum payment under the Old Scheme for female

```
## # A tibble: 1 x 4
##   variable       statistic p.value p.value.signif
##   <chr>              <dbl>   <dbl> <chr>
## 1 Old_Scheme_lsF     0.974  0.0834 ns
```

Table 4.22: Table of Shapiro-Wilk Normality Test results of lump-sum payment data.

Data	n	statistic	p	p.signif
New scheme	200	0.586	1.17e-21	****
Old scheme	200	0.884	2.50e-11	****
New scheme male	143	0.575	1.27e -18	****
Old scheme	115	0.858	0.00000000426	****
New scheme	57	0.713	0.00000000303	****
Old scheme	85	0.974	0.0834	****

From the output in Table 4.22, all the p-values are less than 0.05. For example the p-value of the new scheme is p-value = 1.17e-21< 0.05 implying that the distribution of the data are significantly different from normal distribution. In other words, the normality for data distribution for lump sum payment under the two schemes and by gender cannot be assumed.

4.8. Result of the main hypothesis testing using T-test, a parametric test method and Mann Whitney U test, a non-parametric test method.

In conducting the test on the main hypothesis for the study using the above two methods to aid the process, each mini hypothesis is described as the hypothesis used for the testing. The purpose is to use the outcomes of the mini hypothesis to draw the appropriate conclusion on the null hypothesis of the study which is the main subject of the testing. Moreover, in the testing, group 1 refers to the new scheme and group 2 refers to the old scheme.

4.8.1. T-test

The hypothesis used for the testing:

Ho: Mean of group 1 is equal to that of group 2

Ha: Mean of group 1 is not equal to that of group 2 at 95% significance level.

Interpretation: A p-value <0.05 implies that the two groups have different mean values

i. **Monthly Pension Payment**

Figure 4.10: Monthly pension payment between the New and the Old Scheme

```
##   .y.   group1     group2       n1    n2 statistic    df      p p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl> <dbl>  <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme   200   200     -1.78   398 0.0764 ns
```

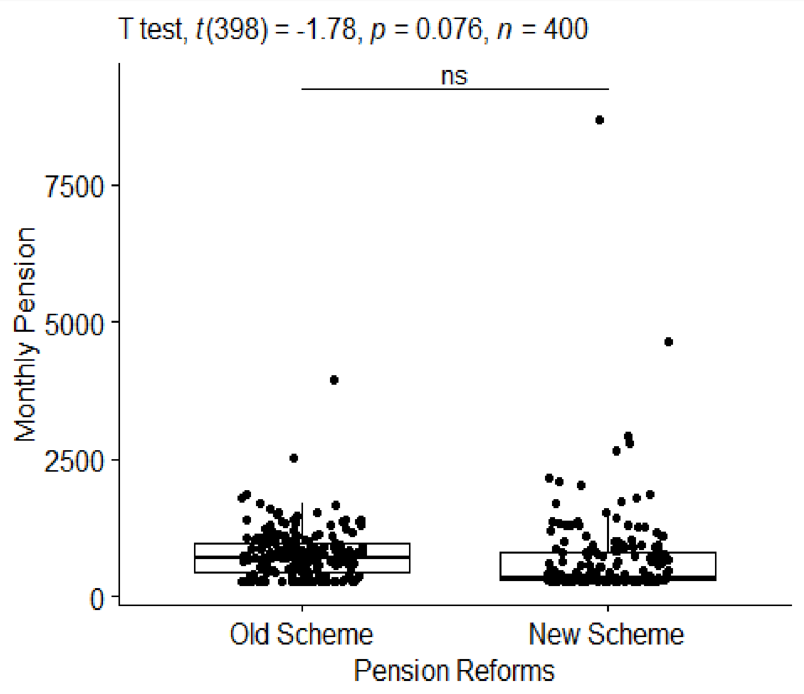


Figure 4.11: Monthly pension payment between the New and the Old Scheme for male

```
##   .y.    group1     group2       n1    n2 statistic    df     p p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl> <dbl> <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme   143   115     -1.05   256 0.297 ns
```

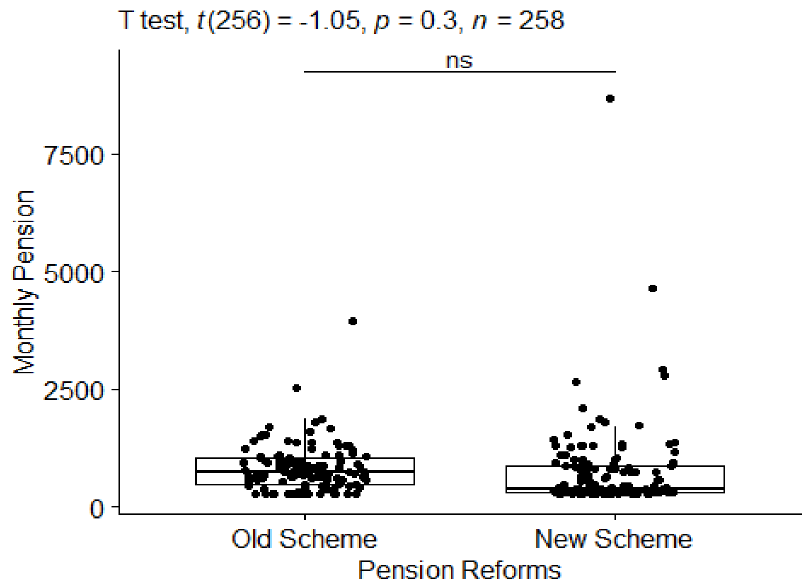


Figure 4.12: Monthly pension payment between the New and the Old Scheme for female

```
##   .y.    group1     group2       n1    n2 statistic    df        p p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl> <dbl>    <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme    57    85     -3.46   140 0.000711 ***
```

Table 4.23: Table of two independent sample T-Test results **of monthly pension payment of the two schemes and by gender**

Data	group1	group2	n1	n2	statistic	df	p	p.signif
Monthly Pension	new scheme	old scheme	200	200	-1.78	398	0.0764	Ns
Monthly Pension	new scheme male	old scheme male	143	115	-1.05	256	0.297	Ns
Monthly Pension	new scheme female	old scheme female	57	85	-3.46	140	0.000711	***

Conclusion: The p-value for the old and the new schemes is 0.0764, more significant than 0.05. Therefore, at the 5% significance level, we fail to reject the null hypothesis, and we conclude that monthly pension payments are significantly not different between the new and the old schemes.

For the male group, the p-value is 0.297, more significant than 0.05. Therefore at the 5% significance level, the rejection of the null hypothesis fails, and it indicates that monthly pension payments are significantly different between the new and old schemes.

The p-value in respect of the female group is 0.000711. It is less than 0.05, meaning the rejection of the null hypothesis. And it is concluded that the monthly pension payments under the old and new schemes are significantly different.

Applying the above conclusions to the central null hypothesis, which is pension reform is not a guarantee for improved pension benefits, the result is the rejection of the null hypothesis. The tests established that the monthly pension between the old 1991 scheme and the new 2010 three-tier scheme is not significantly different even though the objective of the new scheme is to make the pension better than it was under the old scheme.

This development further confirms the results of the comparison of the formulae for the computation of pensions under both schemes. In effect, it confirms that where a worker achieves the maximum contribution period of 480 months or 40 years under any of the two schemes, the monthly pension amounts are equal or are the same.

The maximum pension suitable for the 480 months under the old scheme is 80%, and the new scheme is 60%. The difference of 25% of the original 80% now belongs to the second tier for the lump-sum component of the pension during retirement. So it means that the 80% under the old scheme comprises the 25% lump-sum and the monthly pension. (Appendix 6).

Further, the minimum contribution period to qualify for a monthly pension under the old scheme is 20 years, and the new scheme is 15 years.

Thus, the monthly pension for two workers where one retired on the old scheme and the other on the new scheme with the average of three best years salaries being 1000 and both contributed for 480 months or 40 years each, the following will be their monthly pension:

The formula **for** the **computation of pension under the new and old scheme as stated in their respective legislation**

Old scheme (Social Security Law, 1991 PNDC law 247)

The minimum pension is 50% of the average annual salary for the best three years (36 months) of a members' working life.

Where the member works beyond the minimum contribution period, the pension payable is increased by 1.50% for every additional year worked up to a maximum of 80%

New scheme (National Pensions Act, 2008, Act 766)

The minimum pension is 37. 5% of the average annual salary for the best three years (36 months) of a members' working life.

Where the member works beyond the minimum contribution period, the pension payable is increased by 1.125% for every additional year worked up to a maximum of 60%

Computation of benefit under the old scheme

• Average of best three years salary-1000

• Period of contribution - 480 monthly or 40 years

• Pension rights earned:

First 20 years – 50% plus

Every additional year of 1.5% up to a maximum of 80% = 1.5 x 20= 30%

• Total pension right : 50% + 30% = 80%

• Total pension 80% of 1000 = 800 less 25% lump-sum (25 of 800) = 200

• Monthly pension is total pension less 25% lump-sum i.e. 800 – 200 = 600

• Monthly pension is 600

Computation of benefit under the new scheme

• Average of best three years' salary – 1000

• Period of contributions - 480 months or 40 years

• Pension rights earned:

First 15 years 37.5% plus

Every additional year of 1.125% up to a maximum of 60% (1.125% x 25 = 22.5%)

• Total pension right is 37.5% + 22.5% = 60%

The 60% represents only monthly pension rights because 25% belongs to the second-tier scheme.

• Monthly pension is 60% of 1000 = 600

The monthly pension at a maximum contribution of 40 years with the same terminal salary produces the same monthly pension. In this case, it is 600 under both the old and the new schemes.

The result of the female group in respect of monthly pension indicates the opposite. This result means that for the female group, there is a significant difference in the monthly pension amount for females between the two groups. This departure requires further study. However, the result of the data normality, which shows that all the data distributions do not follow a normal distribution, could account for it.

4.8.2 Presentation of T-test result of Lump sum Payment

Figure 4.13 Lump Sum payment between the New and the Old Scheme

```
##   .y.      group1     group2       n1    n2 statistic    df    p p.signif
## * <chr>    <chr>      <chr>      <int> <int>     <dbl> <dbl>   <dbl> <chr>
## 1 lump_sum New Scheme Old Scheme   200   200     -8.19   398 3.61e-15 ****
```

Figure 4.14: Lump Sum payment between the New and the Old Scheme for male

```
## .y. group1 group2 n1 n2 statistic df p p.signif
## * <chr> <chr> <chr> <int> <int> <dbl> <dbl> <dbl> <chr>
## 1 lump_sum New Scheme Old Sche~ 143 115 -6.10 256 3.9e-9 ****
```

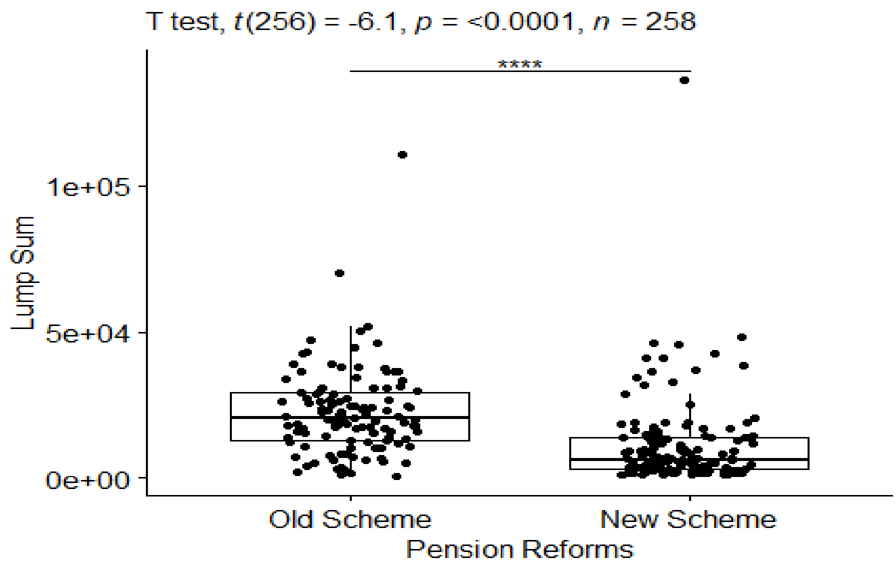


Figure 4.15: Lump Sum payment between the New and the Old Scheme for female

```
## .y. group1 group2 n1 n2 statistic df p p.signif
## * <chr> <chr> <chr> <int> <int> <dbl> <dbl> <dbl> <chr>
## 1 lump_sum New Scheme Old Scheme 57 85 -6.94 140 1.31e-10 ****
```

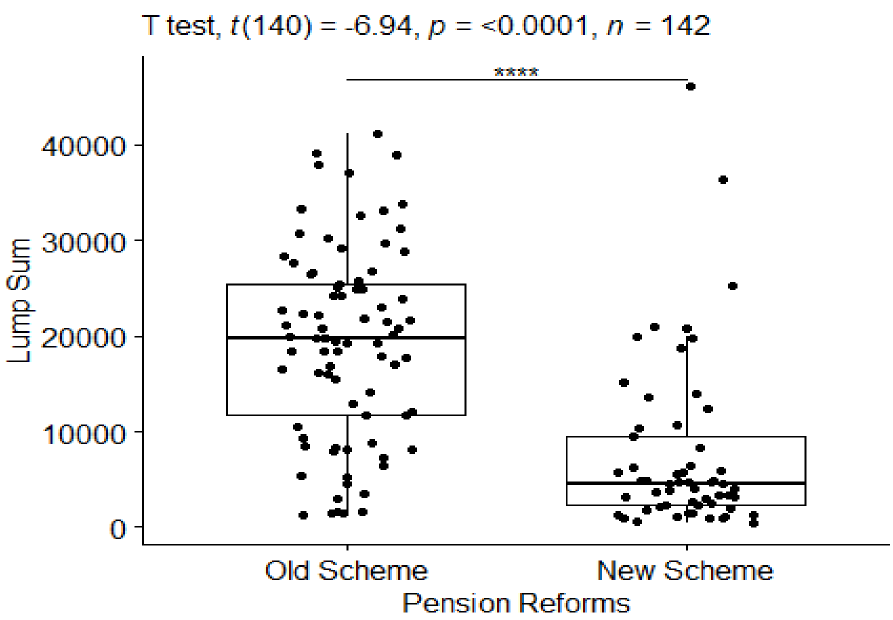


Table 4.24: Table of two independent sample T-test results of a lump-sum **payment of both old and new schemes and by gender.**

Data	group1	group2	n1	n2	statistic	df	p	p.signif
Lump-sum	New Scheme	Old Scheme	200	200	-8.19	398	3.61e-15	****
Lump-sum	New Scheme male	Old Scheme Male	143	115	-6.10	256	3.9e-9	****
Lump-sum	New scheme Female	Old Scheme Female	57	85	-6.94	140	1.31e-10	****

Conclusion: The p-value of the old and new schemes is 3.61e-15 which is less than 0.05. Therefore, at the 5% significance level, the null hypothesis is rejected, and it means that lump sum pension payments are significantly different between the new and the old schemes.

The p-value of the male group is 3.9e-9, and it is less than 0.05. Thus, at a 5% significant level, the hypothesis is rejected, and it means that lump sum pension payments are significantly different between the new and the old schemes.

For the Female group, the p-value is 1.31e-10, which is less than 0.05. Therefore, at a 5% significant level, the null hypothesis is rejected, and it means that lump sum pension payments are significantly different between the new and the old schemes.

The effect of the rejection of the mini null hypothesis on the central null hypothesis of the thesis is that there is a significant difference between lump-sum pension payments between the old and the new schemes. It is the same in terms of gender (male and female).

A comparison of the mean and median values of the lump-sum pension amounts, as illustrated in Table 4.24, revealed that the lump-sum pension amount under the old scheme is significantly higher than that of the new scheme, which has been in existence for the past 11 years. The conclusion, therefore, on the central null hypothesis of the thesis is that at a 5% significance level, there can be no rejection of the null hypothesis pension reform does not guarantee improved pension benefits.

Table 4.24: mean, median, maximum, **and minimum distribution of lump-sum pension payment between the old and the new schemes and gender.**

Group	**Both old & new**		**Male**		**Female**	
Scheme type	Old	New	Old	New	Old	New
Mean	21,041.50	10,088.69	22,488.12	11,081.41	19,084.31	7,598.93
Medium	20,041.50	5,659.50	20,386.00	6,391.00	19,768.00	4,507.00

4.9. Result of the main hypothesis testing using Mann-Whitney U Test

4.9.1 Monthly Pension payment

The hypotheses used for the testing:

H0: The monthly pension payment of pensioners under the new scheme is the same for those under the old scheme, against

H1: The monthly pension payment of pensioners under the old scheme is more significant than those under the new scheme, at the 5% significance level.

Interpretation: A p-value <0.05 implies that monthly pension payments under the old and new schemes are not the same

Figure 4.16: Monthly pension payment between the New and the Old Scheme

```
##   .y.    group1     group2       n1    n2 statistic          p p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl>      <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme   200   200     14540 0.00000217 ****
```

Figure 4.17: Monthly pension payment between the New and the Old Scheme for male

```
##   .y.    group1     group2       n1    n2 statistic        p p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl>    <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme   143   115      6153 0.000498 ***
```

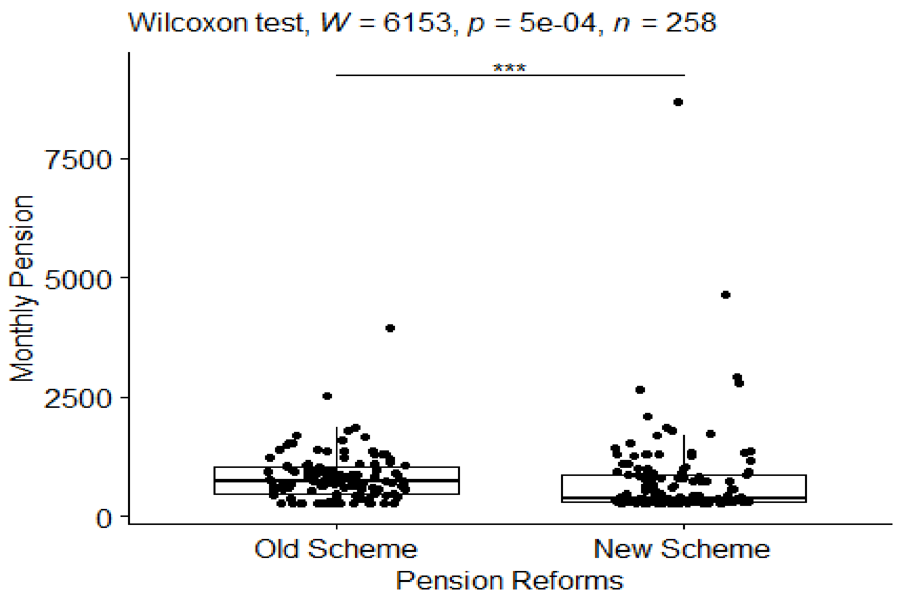


Figure 4.18: Monthly pension payment between the New and the Old Scheme for female

```
##   .y.    group1     group2       n1    n2 statistic        p p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl>    <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme    57    85     1512. 0.000142 ***
```

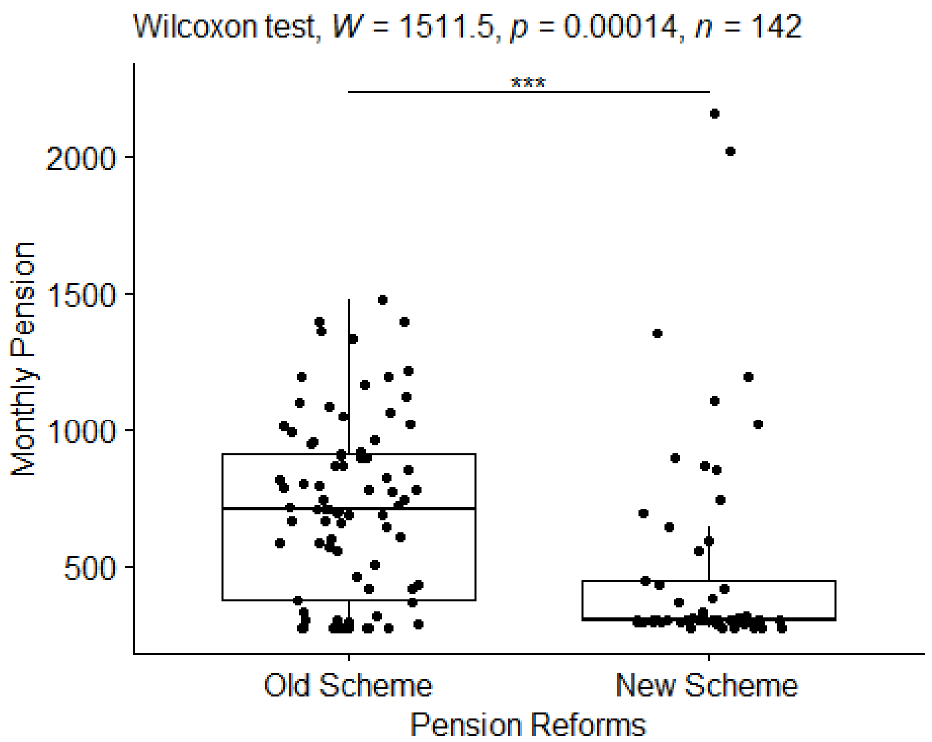


Table 4.25: The **result of the main hypothesis testing using two independent Mann-Whitney U Test of monthly pension payment between the old and the new** schemes and **by gender.**

Data	group1	group2	n1	n2	statistic	p	p.signif
Monthly Pension	new scheme	old scheme	200	200	14540	0.00000217	****
Monthly Pension	new scheme male	old scheme male	143	115	6153	0.000498	****
Monthly pension	new scheme female	old scheme female	57	85	1512	0.000142	****

Conclusion: The p-value of the old and the new scheme is 0.00000217, and it is less than 0.05. Therefore, at the 5% significance level, we reject the null hypothesis, and we conclude that monthly pension payments for pensioners are significantly different between the new and the old schemes.

The p-value for the male group is 0.000498. It is less than 0.05. therefore at the 5% significance level, the null hypothesis is rejected, and it concluded that monthly pension payments for pensioners are significantly different between new and the old schemes.

For the female group, the p-value is 0.0000142. It is less than 0.05. Therefore at a 5% significant level, the null hypothesis is rejected, and it means that monthly pension payments for pensioners are significantly different between the new and old schemes.

The rejection of the null hypothesis of the mini hypothesis used for the testing means that monthly pension benefits are different between the two schemes. It is also the acceptance of the mini alternate hypothesis that monthly pension under the old scheme is better than that of the new scheme. By this conclusion, there can be no rejection of the null hypothesis of the thesis. It follows that pension reform does not guarantee improved pension benefits.

4.9.2 Lump-sum payment using independent Mann-Whitney U Test

The hypotheses used for the testing:

H0: The lump-sum pension payment of pensioners under the new scheme is the same for those under the old scheme, against

Ha: The lump-sum pension payment of pensioners under the old scheme is more significant than those under the new scheme, at the 5% significance level.

Figure 4.19: Lump Sum payment between the New and the Old Scheme

```
## .y. group1 group2 n1 n2 statistic p p.signif
## * <chr> <chr> <chr> <int> <int> <dbl> <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme 200 200 14540 0.00000217 ****
```

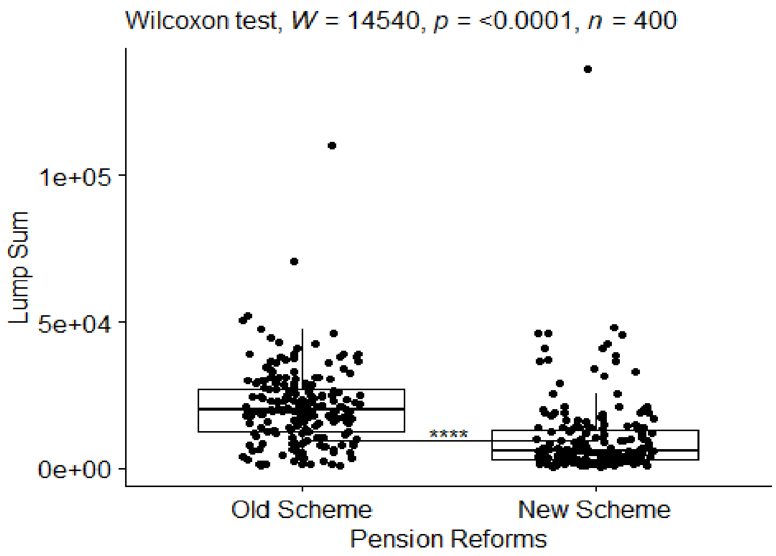


Figure 4.20 Lump Sum payment between the New and the Old Scheme for male

```
## .y. group1 group2 n1 n2 statistic p p.signif
## * <chr> <chr> <chr> <int> <int> <dbl> <dbl> <chr>
## 1 lump_sum New Scheme Old Scheme 143 115 3468 1.47e-15 ****
```

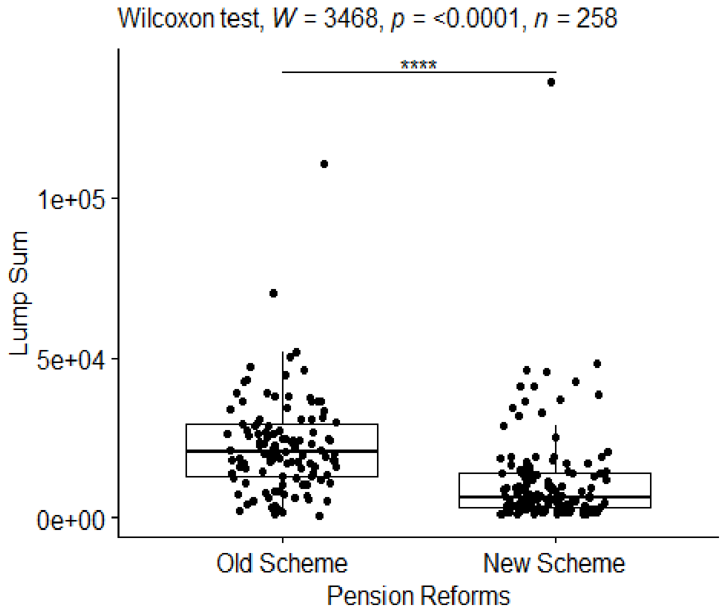


Figure 4.21 Lump-sum payment between the new and the old scheme for female

```
## .y. group1 group2 n1 n2 statistic p p.signif
## * <chr> <chr> <chr> <int> <int> <dbl> <dbl> <chr>
## 1 lump_sum New Scheme Old Scheme 57 85 877 1.28e-10 ****
```

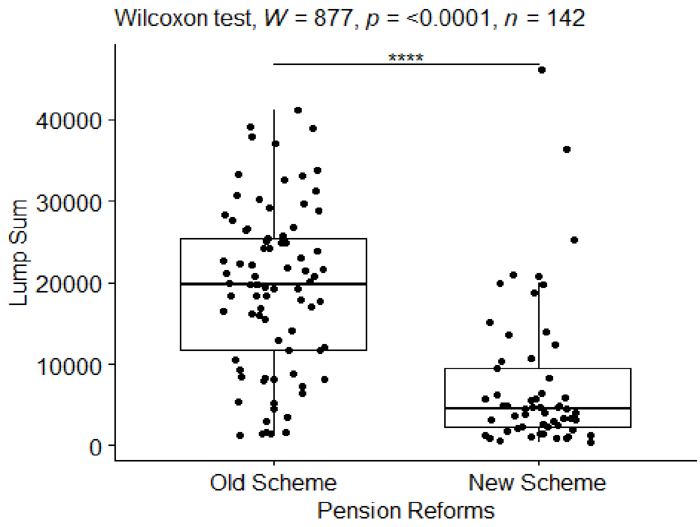


Table 4.26: Table of two independent Mann-Whitney U Test results **of** lump-sum **pension payment under the old and the new schemes and gender.**

Data	group1	group2	n1	n2	statistic	p	p.signif
Monthly Pension	New Scheme	Old Scheme	200	200	14540	0.00000217	****
Monthly Pension	New Scheme Male	Old Scheme Male	143	115	3461	1.47e-15	****
Monthly pension	New Scheme Female	Old scheme Female	57	85	877	1.28e-11	****

Conclusion: The p-value of the old and new schemes is 0.00000217, which is less than 0.05. Therefore, at the 5% significance level, we reject the null hypothesis and conclude that lump-sum pension payments for pensioners are significantly different between the new and the old scheme.

The p-value for the male group is 1.47e-15. It is less than 0.05. Therefore, at a 5% significance level, the null hypothesis is rejected. It indicates that lump-sum pension payments for male pensioners are significantly different between the new and the old schemes.

With regards to the female group, the p-value is 1.28e-10. It is less than 0.05. Therefore at a 5% significance level, the null hypothesis is rejected. It means that lump-sum pension payments for female pensioners are significantly different between the new and the old schemes.

The rejection of the null hypothesis of the mini hypothesis used for the testing means the acceptance of the alternate mini hypothesis that at a 5% significance level, lump-sum pension under the old scheme is better than that of the old scheme. It implies no rejection of the central null hypothesis of the thesis.

It means that at a 5% significant level, lump-sum pension under the old scheme is better than that of the new scheme. It follows that at a 5% significant level, pension reform does not guarantee improved pension benefits.

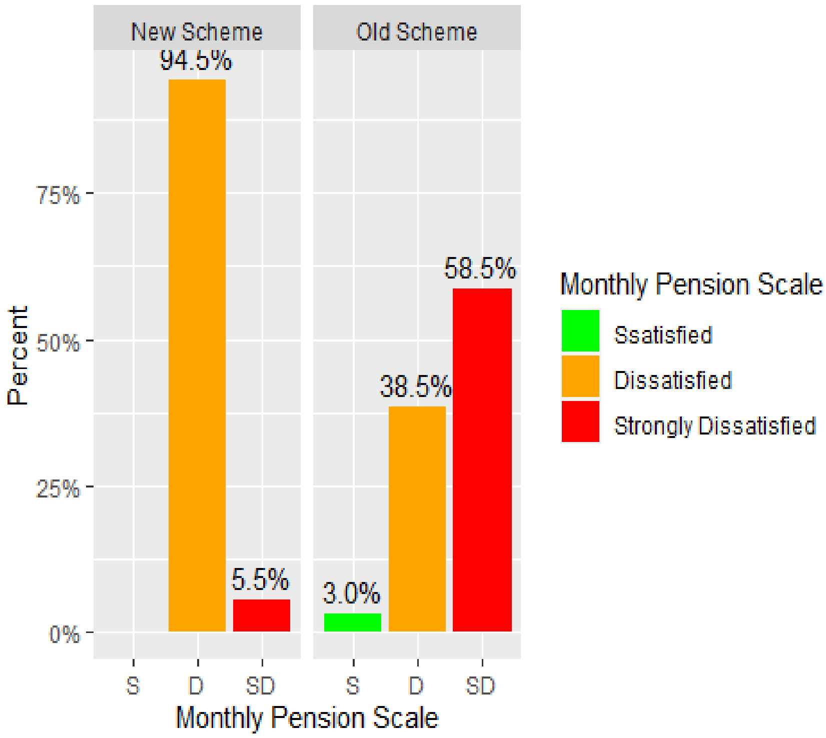
4.10. Qualitative results of the hypothesis testing

4.10.1Monthly Pension Payment

Table 4.27: Table of cross-tabulation **of pension reforms and level of satisfaction of monthly pension payment between the old and the new schemes**

Pension Reform	Satisfied	Dissatisfied	Strongly Dissatisfied
New Scheme	0 (0%)	189 (94.5%)	11 (5.5%)
Old Scheme	6 (3%)	77 (38.5%)	117 (58.5%)

Figure 4.22: Bar chart of the **level of satisfaction of monthly pension payment under the new and old schemes**



The summary statistics and the Bar Chart, Table 4.27 and Figure 4.18 on the satisfaction level of pensioners in respect of their monthly pension under the new and the old schemes revealed that 189 pensioners representing 94.5% are dissatisfied with the monthly pension under the new scheme as against 38.5% or 77 pensioners who are dissatisfied with the monthly pension under the old scheme.

Regarding strongly dissatisfied, 117 pensioners or 58.5% under the old scheme against 11 pensioners or 5.5% under the new scheme were strongly dissatisfied. No pensioner was satisfied with the monthly pension under the new scheme, and six pensioners or 3% of pensioners were satisfied with the monthly pension under the old scheme.

The overwhelming dissatisfaction with the monthly pension under the new scheme represented 94.5% dissatisfaction together with the 5.5% strong dissatisfaction totaling 100%. It indicates no pensioner is satisfied with the monthly pension under the new scheme. This development seemed to be consistent with the outcome of the hypothesis, which suggests that monthly pension payments under the new and the old schemes are significantly different.

Further, and in a similar vein, 58% and 38.5% are dissatisfied and strongly dissatisfied, respectively, with the monthly pension under the old scheme. It represents a total of 97% dissatisfaction with the monthly pension under the old scheme, with only 3% or six pensioners expressing satisfaction with the monthly pension under the old scheme.

Thus, this trend suggests that the aim of the new three-tier pension scheme to improve pensions seems not to be the case with the monthly pension. The outcome of the hypothesis testing in terms of gender also suggests that monthly pensions under the old and the new schemes for males are not significantly different. The mean monthly pension for the new scheme is 655, and that of the old scheme is 770.93. Medians are 327 and 714, respectively.

The outcome of the hypothesis for monthly pension for females instead suggests there are significant differences in the monthly pension for females under the new and the old schemes. The conclusion was arrived at using the T-test method, which is parametric and assumes normality of the data sets. The data normality tests conducted using all three test methods concluded that the distribution of the data sets is not normal.

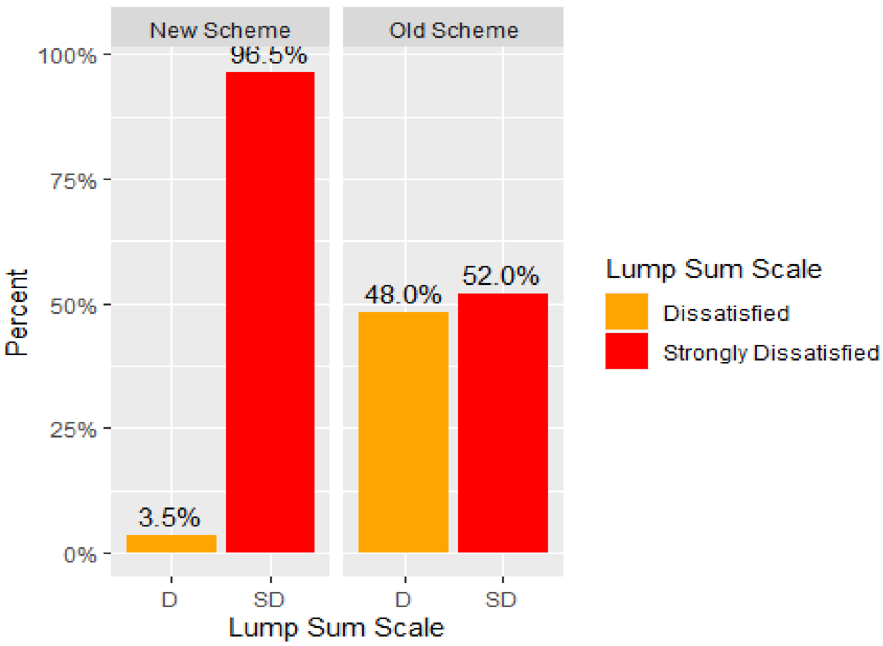
The position of the female group requires further inquiry. However, the immediate possible cause of this inconsistency is the extreme values or outliers in the data sets used for the study.

7.10.2 Lump-sum payment

Table 4.28: Cross-tabulation **of pension reforms and level of satisfaction of lump-sum pension payment between the old and the new schemes.**

Pension Reform	Satisfied	Dissatisfied	Strongly Dissatisfied
New Scheme	0 (0%)	7 (3.5%)	193 (96.5%)
Old Scheme	0 (0%)	96 (48%)	104 (52%)

Figure 4.23: Bar chart of the **level of satisfaction of lump-sum pension payment under the new and old schemes**



The summary statistics of lump-sum pension payment as depicted by Table 4.28 and Figure 4.19, the bar chart, has two straight response levels of satisfaction under the new scheme. Strongly dissatisfied under the new scheme is 96.5% or 193 pensioners against 52.0% or 104 pensioners of the old scheme. Dissatisfaction is 3.5% under the new scheme against 48.0% of the old scheme.

Again, this finding is consistent with the outcome of the hypothesis testing, which suggests that lump-sum pension payments under the new and the old schemes are significantly different. The comparison of the mean of the lump-sum payment under the old scheme (21,042) and median (20, 0042) as against the mean of the new scheme (10, 0089) and median (5,660) respectively revealed that lump-sum under the old scheme is better than that of the new scheme.

Indeed there is an independent confirmation of a better lump sum under the old scheme than the new three-tier scheme by the African Centre for Retirement Research based in Accra, Ghana. The center conducted quantitative research on the lump-sum pension under the old and the new schemes. The center released its report in March 2021.

In line with the Center's mission of contributing to national policy dialogue on social protection, retirement, and pensions, the Center decided to conduct research into the retirees' lump-sum shortfalls under the new three-tier scheme and its policy implications for the Government of Ghana. This decision of the Center followed the public outcry in 2020 when full payment of pensions under the new scheme to the more significant majority of retirees started.

As done in this study, the Center obtained information on actual lump-sum received by 981 retirees under the new scheme who retired in 2020. The lump-sum for each of the 981 retirees, as the sample size, was made up of their accumulated funds in the second tier defined-contribution scheme and the past credit lump sum from SSNIT.

The Centre also used the information to compute the 25%lump-sum of the total pension which they would have individually earned if each of them had retired under the old scheme operated by SSNIT. The estimated 25% lump-sum of the old scheme compared with the lump-sum they received under the second tier of the new three-tier scheme.

The result published by the Center indicates that 81% of retirees under the new scheme who received their lump-sums experienced shortfalls when compared with the 25% lump-sum under the old scheme. Public sector workers were the most affected, with shortfalls of over 90% as compared to 64% shortfalls experienced by private-sector workers.

Further, a statistical test conducted by the Center confirmed a significant difference between the lump-sum under the new scheme and the old scheme. The lump-sum under the old scheme was significantly higher than that of the new scheme, and the shortfalls suffered by retirees of the new scheme were widespread and significant. (Odah, March 2021; mobile.ghanaweb.com).

In sum, the 2010 three-tier pension reform in Ghana, although aimed at improving pension benefits, cannot be said to have achieved its aim. Thus, pension reform is not a guarantee for improved pension benefits. The developments in Chile, the pacesetter in pension reforms, and other Latin American countries continue to implement further reforms to improve pension benefits. (Bertranou et al., 2018; IMF, 2021).

4.11. Gender inequality

The study also revealed the gender inequality situation between male and female pensioners in the Republic of Ghana. In the literature review in Chapter 2, one of the issues discussed was gender inequality in pensions. It includes inequality in pension coverage and the quantum of pension benefits between male and female pensioners. Inequality in pension systems is a global phenomenon

Various factors came to the fore in section 2.7 of Chapter 2 as the cause of the inequality. An attempt was therefore made in the study to look at the situation in Ghana, the country under study.

The results of the study and analysis of the data based on gender were presented in Table 4.16, indicating the summary statistics of monthly pension payments of male and female pensioners under the old and the new pension scheme: Table 4.18 also presents the summary statistics of lump-sum pension payment between the male and female pensioners of both schemes.

Out of the 200 respondents who participated in the study under the old scheme, 85 or 42.5% are females, while 115 or 57.5% are males. Similarly, under the new scheme, the male pensioners are 143 or 71.5%, and the female pensioners are 57 or 28.5%. It clearly shows that the male pensioners are more than their female counterparts.

These findings necessitated further efforts to look at the whole pension payroll of all pensioners receiving monthly payments under both old and new schemes combined.

SSNIT is the operator of the state's social security scheme and the first tier of the three-tier pension scheme. The report of SSNIT shows that as of April 2021, the total number of all pensioners (both male and female) on the pension payroll was 230,972.

Out of the 230,972 male pensioners numbered 164,413, female pensioners numbered 66,558, representing 28.82% of all the total pensioners as against 71.18% of male pensioners.

Table 4.29 Pensioners (both old and new scheme) on the pension payroll of SSNIT as of **30th April 2021 by gender**.

Pensioners (old and new scheme)	**Total numbers**	**Percentage (%)**
Old and new scheme	230,972	100
Males	164,413	71.18%
Females	66,558	28.82%

In terms of active workers who are working and contributing to the social security scheme, including the first tier managed by SSNIT, Table 4.30 below illustrates the position as at 30th April 2021.

Table 4.30: number of current contributors on both old and new schemes at SSNIT as at 30th April 2021.

Male	**Female**	**Total**
998,534 62.40%	601,429 37.60%	1,599,963 100%

Table 4.30 shows that the proportion of active female contributors or workers who are members of the state social security scheme, including the new first-tier scheme, represents 37.60% as against that of males of 62.40%. This trend is comparable with the distribution of pensioners in the same month of April 2021 of male pensioners 71.18% and the female pensioners 28.82%.

These developments revealed that the female working population covered by the pension system is much lower than the male counterparts. Meanwhile, the 2020 World Bank collection of development indicators compiled on Ghana shows that Ghana's female labor force in 2020 was 46.44% of the total labor force.

The total labor force or working population in Ghana in 2020 was 12,934,257 (i.e., people aged 15 years and older) as reported by World Bank Development indicators. It includes people who are currently employed and those unemployed.

The percentage of the female working population out of the total is 46.44%, or 6,006,669. The total number of workers covered by the mandatory social security scheme in Ghana as of 30th April 2021 is 1,599,963, out of which 601,429 are females(Table 4.30).

In effect 5,405,239 (6,006,669 – 601,429) females are not covered by the social security scheme. For the male counterparts, the total working population as of 2020 was 6,927,588 out of the country's total labor force of 12,934,257. From the SSNIT data on contributors to the compulsory social security scheme, male contributors are 998,534.

It means 5,929,054 males of the working population in Ghana are not part of the mandatory social security scheme. However, the number of males covered being 998,534 or 62.40%, is still better than that of females representing 37.60%

The analysis also disclosed significant differences in the monthly pension and lump-sum pension amounts between male and female pensioners under both old and new schemes. Table 4.16 presents the summary statistics of the monthly pension payment by gender.

Regarding the old scheme, the result of the central distribution shows that the mean for female pensioners is 704.918 and that for male pensioners is 819,719. The median is 709 and 722, respectively. The maximum amount for females is 1,475, and that for males is 3,959. It shows a trend of male pensioners having higher monthly pension amounts than that female pensioners.

The position is not different under the new scheme. Under the new scheme, the mean for females is 492.018, and that of males is 720.014. The maximum is 2,154 and 8,689, respectively. Maximum pension amounts for the male group are 374 and the female group 300. The summary statistics for lump-sum payment by gender are in Table 4.18.

Again, the analysis shows that the trend of female pensioners receiving lower pension amounts than their male counterparts is reflected in the lump-sum payment as well. The female group under the new scheme has a mean of 7,598.193; the male group has 11,081.406.

The medians are 4,507 and 6,391, respectively. The maximum for females is 46,231, and that of the male group is 136,278.

The central tendency distribution under the old scheme in terms of the lump-sum indicates a mean of 19,084.306 for female pensioners and 22,488.122 for their male counterparts, and the median is 19,768 20,386 respectively.

The result of this analysis is consistent with the global picture, which indicates the inclusion of more male workers in the pension systems and receipt of a better amount of pension benefits than their female counterparts (Raday, 2013). Furthermore, the World Bank World Development Report of 2012 on Gender Equality and Development revealed the gender inequality of pension benefits between men and women.

"Data from 25 European countries shows that only in 6 countries is the share of elderly women receiving a pension more significant than the equivalent share for men. The share is as low as 40% (Luxembourg) or 60% (Austria, Greece, and Malta). In the United States currently, women and men have similar coverage rates (around 65%), but the amounts women have accumulated in their accounts are on average half that of men.

In China, pensions are the primary source of income for 57% of retired men in urban areas but for only 35% of women who tend to rely more on family support".

Similarly, the World Bank Group discussion paper No. 1917, April 2019 on Social Protection Jobs in the EU Countries revealed that women's pensions are significantly lower than men's in the European Union countries. Averagely in the EU countries between 2013 and 2014, women's pensions were 27% lower than men's. The paper indicated that the position or the gap was, however, closing up in some countries.

Several arguments have come up as the reason for the inequality. Among them is that gender equality is an integral part of social policy. That pension systems operate within a complex social and institutional environment that underlies inequalities between the outcomes of men and women (Gellecum & Boreham, 2009).

Key among the social structural problems are the labor market inequalities where women have lower employment rates, higher rates of part-time work, and lower wages in some countries. The issues of childbearing and caring roles within the family also impact. These are against the background that the capacity to save for retirement and living standards is highly dependent on labor market experiences throughout working life.

The situation is not different in Ghana when it comes to employment. The majority of the female working population is in the economy's informal sector. The majority are engaged in small economic activities where there is no consistent flow of income.

The study findings on gender inequality in the pension system in Ghana indicate that there is a need to do more to increase female coverage. However, the situation is becoming better when analyzed and compared with the male counterparts who are current contributors under the mandatory social security scheme. In summary, the study confirms the global picture of gender inequality in the pension system in Ghana, south of the Sahara.

4.12. Chapter conclusion

In a nutshell, this chapter presented and analyzed the primary research conducted on beneficiaries under the old and the new three-tier pension scheme introduced in Ghana. The testing and the results of the central hypothesis for the study using qualitative methods complemented by a quantitative approach featured prominently.

Also covered is the test on the normality of the primary data gathered as a guide for selecting which best method of hypothesis testing should be applied. The central tendency distribution approach was the basis for comparing the old and new schemes.

The testing of the central hypothesis for the study was with mini hypotheses as a tool. There was no rejection of the null hypothesis in the testing on both lump-sum payments and monthly pension payments under both schemes. Also tested was the gender inequality dimension of pension coverage and pension benefits between male and female pensioners under Ghana's pension system. The next is Chapter 5, which concludes the thesis.

Chapter 5 Conclusion, implications and recommendations

5.1 Introduction

In this study, the point has been made about the essential nature of pensions as a human need globally. It has become a universal right of every human being and an income distribution arrangement for the life cycle to avoid poverty and guarantee a decent standard of living throughout life for everyone. Pension schemes are instituted within every country's environmental, cultural, and economic capacity and therefore differ in their dynamics from country to country.

Again, pension plans face various challenges that threaten their very existence or their ability to continue delivering the pension benefits they provide. At the same time, beneficiaries of pension schemes continue to have high and, in some cases changing expectations about pension services and, more particularly, the sufficiency or adequacy of pension benefits to meet a decent and equally changing standard of living.

Thus, pension schemes worldwide are under constant pressure to undertake various reforms to make them better. These pension reforms are necessary for pension systems to continue to exist long-term to deliver vital pension services to beneficiaries when the appropriate life contingencies arise.

Indeed, pension reforms' impact on pension benefits requires a better understanding and appreciation because pension systems exist to provide pension benefits as their core mandate. The issue, however, is, do these reforms always lead to better pension benefits? This study determines whether these reforms always lead to better pension benefits. In the concluding chapter, and to facilitate understanding, some of the major points made and the statistical analysis results are briefly summarized. The findings and results of the hypothesis are also highlighted and further discussed.

Subsequently, it stated the contribution to the literature the practical implications for academia, the pension industry, and policymakers. The chapter concludes by pointing out some limitations of the study and suggestions for future research opportunities.

5.1.1 Summary of the Report

For a better understanding of pension reform and to establish the reasons or causes behind it, the study undertook a comprehensive review of the theoretical literature about pension reforms. Among the theories are global social policy schools that believe that external factors such as international institutions influence national social policy. Therefore, the economic transformations' including pension reforms in matured welfare states, resulted from globalization. (Ellison, 2006; Deacon et al., 2009; Yeates & Holden, 2009).

Whereas this strand of thought fits into the role of the World Bank and other international financial institutions in pension reforms around the World, the emphasis had been on privatization of pension management and deep involvement of financial institutions and the capital market. In contrast, pension systems with adequate or improved pension benefits were not concerned.

Subsequent developments in countries which implemented the World Bank pension reform prescription had undergone further reforms. The conversion of pension as a social provision which is the responsibility of the state, employer, and the worker into financialization and reliance on the capital market to protect the financial interest of the worker in terms of pension, failed to achieve the intended objective.

The new political economy school had argued that the socio-economic and environmental circumstances that existed at the time of establishing pension systems have changed, so it is necessary to reform pension systems. This view dwelt much on cost containment without looking critically at what is required to change the dynamics to maintain the already created standard of living and poverty prevention by pension systems.

However, mature welfare countries spend far more on pensions and other social provisions. Further, there was an introduction of more interventions to become more market-oriented. (Farnsworth & Irving, 2011). This development has resulted in a decline in average social expenditure over the years in some countries (OECD, 2020).

Obliviously improved pension benefits are not a core argument of this school. However, the significant contribution of this new political school is that the early assumptions which informed the establishment of pension systems were on labor market dynamics. They include the assumptions that there would be continuity of employment or security of jobs for workers. Workers' incomes will continue to increase, and young ones will continue to join the labor force to support the aged ones or the pensioners.

The labor market dynamics, however, changed. Job losses occurred in many countries through restructuring, rationalization, downsizing, and others to sustain businesses in both private and public sectors. The unemployment situation has also increased. Thus, the expected income flows through contributions and taxes to support the pension system had dwindled.

The welfare regime school is a dominant view on social policy discussions. The basis is on the classification of welfare systems. (Blakemore & Griggs 2007; Esping-Andersen 1990; Ellison 2006). It focuses on similarities in countries' social policies. The major argument is the need to sustain pension systems by decreasing pension spending and tightening eligibility criteria to cope with the aging problem to reform the pension system. Cost containment appears to be a major concern.

The basis of this cost containment prescription arose from the fact that this strand of thought considered pension provision as just one of the different social provisions. Therefore not much attention is paid to it as an indispensable social provision. It also ignores significant pension reforms, such as introducing a free market system, privatization, and global factors influencing social policy.

Thus, the adequacy of pension benefits could not have been a focus of the welfare school of thought. The study established that the three schools of thought could not provide convincing arguments to explain the causes of pension reforms worldwide fully.

There is noticeable diversity in pension architecture regarding objectives, scope, coverage, and benefits. Just as the design of pensions differs, their vulnerabilities, opportunities, and approaches to implementing pension reforms differ (Palacio & Pallares – Millares 2000; Gillion el at 2000). In effect, pension schemes face many uncertainties and vulnerabilities.

The literature review established significant pension causes reform to include demographic changes, especially in the aging population, which is dominant and confronts all countries in various forms irrespective of their levels of development (UN, 2013; Fall et al. 2014; ILO, 2014). There is no single or universal solution. A context-specific based on each country's needs to develop the right policy mix appropriate to its situation appears to be the right approach (George, 2014).

A policy mix approach will also ensure the provision of sufficient pension for the retiree. The financial sustainability of the pension system is another factor that has driven pension reforms. Population aging, slow economic growth, and budgetary constraints have contributed to the rising cost of pensions and declining resources with which governments could finance pension liabilities (Chand & Jaeger, 1996).

The effort to address the issue of financial sustainability has led to the development of various pension system models or designs primarily to shift the bulk of pension financing from the state to the individual. Some of the designs include restructuring the PAYG defined benefit to include a funded defined contribution system (World Bank, 1997) and creating reserves or buffer funds to meet shocks from the increasing cost of pensions (Holzmann, 1999).

Others are the introduction of the National Defined Contribution (NDC) with defined benefit and defined contribution features (Fox & Palmer, 1999). There was significant dissatisfaction with these pension reform approaches.

For instance, the fully funded schemes also introduced privatization of pension which is funded and invests pension contribution in the financial market, which determines the final quantum of pension benefit to the retiree instead of the traditional expectations from pension schemes. These reform approaches also meant pension provision for only those who can afford whereas pension provision is necessary for those who have and the have nots.

The inadequacies led to a third central approach to pension reform prescribed again by the World Bank. This approach is the multi-pillar system comprising a combination of five essential elements. The first is a non-contributory or zero pillar, a form of social assistance to provide a minimum level of protection for everyone.

The second is the first pillar contributory system, based on varying degrees of earnings, and the third or the second pillar is a form of mandatory individual savings account system. The fourth is a third-tier voluntary arrangement, and the fifth pillar is both financial and non-financial support in the form of access to health care and housing (Holzmann & Hinz, 2005; Louise & Palmer, 2000).

The multi-pillar system has an inherent capacity to diversify the administration, funding, and structure of benefits of the pension system. It tries to address and manage the risks of various social and economic contingencies which face pension schemes.

The multi-pillar system has been around since the late 1990s. Still, it also relies on financialization or the financial market's performance to determine the quantum of pension benefits paid out. It, therefore, cannot be a guarantee for better pension benefits. Regulation and supervision of pensions and the financial and capital markets are a way of protecting the financial interest of workers in both public and private pension schemes (Schwarz, 2006)

However, the success of regulation and supervision depends on the level of maturity and competence of the regulatory institution. Extending pension system coverage to include more people is another primary reason for pension reforms. Pension is considered a universal right for every human being (UDHR, 1948). Pension is a necessity for every human being, but it is a high public expenditure item and therefore faces political challenges.

The pension system is often considered a limiting factor on national income growth and raises concerns about the amount of expenditure on existing pension systems. There is a general belief that these increasing expenditures are not economically sustainable and, therefore, impossible to sustain into the future (ILO, 2000). It is why countries keep pension coverage at relatively low levels for a long time and instead prioritize private or individual efforts of citizens to provide for themselves.

In some countries, pension coverage is limited to those who can afford it through the formal economy, and others are left to be cared for by the extended family system. Private pension arrangements do not usually provide sufficient pension benefits in many cases. (ILO, 2000).

Thus, pension reform to extend coverage and include many more people into the pension system has been a primary global agenda of the United Nations (UNSDG, 2015), the ILO, and other continental and sub-regional organizations such as the EU and the African Union. This study revealed that at least 75% of the population needs to be covered to ease the pressure for reform to increase coverage. (Allianz, 2020 report).

However, pension reforms to include the masses do not guarantee improved pension benefits. The study revealed that a pension system that does not cover most of its people is under-developed, and therefore pressure for reform will continue to include all.

Gender inequality in the coverage of men and women in the pension system is another crucial factor for pension reforms. The inequality in terms of more men covered than women and the quantum of pension benefits of men higher than that of women is a global phenomenon. (Raday 2013; UN, 2007; World Bank, 2012).

Reform based on bridging the inequality gap aims to remove discriminatory provisions and programs in the pension system and labor market practices to help women catch up with in terms of coverage and quantum of benefits provided by the pension system.

This study established that what compels or triggers the pension reform process by countries' governments differs from country to country. Some of the triggers include likely significant future changes in the pension system arising from an already implemented reform, low number of persons covered by the pension system, the financial strength or soundness of the funded pension systems, and sustainability of the public pension system. (www.allianz.com)

Reform can also aim at effecting administrative changes or operational efficiency. It could also be to introduce regulation and supervision of the key players in the pension industry, especially where privatization is part of the provision of pensions. The aim then will be to ensure the operators of the private pensions and investment companies operate within the law and standards set by the legislation and regulations of the regulatory agencies and to protect the interest of the individual contributors there are.

There are two types of regulatory models. It could be one centralized agency in charge of all aspects of the pension system or a decentralized system where separate or independent agencies regulate respective areas of the pension system but coordinate their activities.

The study identified four different types of pension reforms. These are parametric, systemic, regulatory, and administrative. Parametric reform involves changing the existing standards of the pension framework to fall within political and demographic acceptable limits. These may include the benefits framework, contribution framework, and eligibility conditions for accessing pension. (Schwarz, 2006).

Systemic pension reform is a major structural reform. It entails a shift. For instance, from an existing defined contribution pension system to a hybrid incorporating defined benefit and defined contribution features. It could also shift to a single comprehensive pillar or a multiple pillar pension system (Odia & Okoye, 2012).

The regulatory pension reform type strengthens pension regulation and supervision. It helps ensure sound management of contributions paid to the pension schemes and that the promised benefits are made available to the worker at the right time during retirement. It also ensures that the financial interest of contributors is protected (Schwarz, 2006).

An administrative pension reform focuses on bringing together all the relevant administrative structures in the pension system in a country. The aim is to achieve effectiveness and efficiency in the governance and management of an existing pension system or develop a new pension system (Schwarz, 2006).

The administrative reform will typically include refining contribution collection and benefits services, introducing an integrated information communication technology system, and maintaining appropriate databases. Others are measures to improve record-keeping, strengthen eligibility standards, and combine contribution collection with the tax collection system.

The study revealed that all four pension reforms have specific aims and objectives. Unless improvement in pension benefits is a significant objective of the reform, none of such reforms can guarantee improvement or the adequacy of pension benefits for a decent standard of living for retirees.

Thus, the impact of any pension reform on pension benefits is significant. The reason is that pension reform, in some cases, worsens the plight of workers. The case study on Ghana's new significant pension 2010 reform is an example.

The literature review has revealed that pension reform is an ongoing topical issue. The Allianz research in its 2020 report indicated that it is not possible to overhaul an existing pension system from scratch. Instead, governments have to implement gradual reforms. They must take into account the legal claims of existing pensioners and contributors.

It emphasized that there is no one-size-fits-all solution. The World Bank had built pension reform experience over the years. The Bank has been involved in over 80 countries to carry out pension reforms (Holzmann et al., 2005; George, 2014).

The experience revealed various challenges with pension reform implementation. Indeed pension reform is not only concerned about deciding to undertake pension reform and prescribing the nature of the reform and the implementing institutions or operations of the system.

There is a need for adherence to the goal and core principles of the reform. The capacity to achieve a flexible and context-specific set of social and economic outcomes from implementing the reform is also critical.

The pension reform process, including factors like a credible and stable political environment and sufficient conditions for full implementation and maturation, is necessary. The support and active participation of the local political class, technicians, and general acceptability of the country's population to undertake the reform are indispensable (Holzmann & Hinz, 2005).

Pension reform goes beyond changes to the existing pension legislation. It involves a change in the pension provision. It requires changes in governance, contribution collection, record-keeping, client information, assets management, regulation, supervision, and benefits administration (Holzmann et al., 2005). Another factor of the process is sufficient capacity building and implementation.

Thus, the passage of pension reform legislation is just a tiny part of the work. The crucial part is an investment in local capacity building and implementation. In some cases, even the institution implementing the reform had created challenges. Further, there is a difference between reform implementation flaws and the reform flaws or the challenges that the implementation of the reform itself brings about.

The implementation of pension reform requires focus. Other issues may also arise which will require further reform. Therefore without a dedicated body solely focused on the implementation, the process could fail. Some countries have used reform commissions, such as UK and US (George, 2014). Others used designated offices for the reform (Orenstein, 2000; Holzmann & Hinz, 2005).

These commissions placed significant emphasis on making a case for reform. Additionally, the commissions served as national experts on the subject (George, 2014).

Where the reform intends to involve the private sector or establish the reform on complete financialization of the economy, then the capacity of the financial institutions must be a key consideration. In other words, the financial market must be well developed for diversified investment management (Holzmann & Hinz, 2005; Beck et al., 2000; Levine, 2003)

If the financial market is undeveloped, the introduction of funded schemes must be gradual. However, minimum conditions such as a few solid core banks and other financial institutions offering reliable administrative and asset management services must be in place (Karacadag et al., 2003).

5.2. Conclusion about the research question and hypothesis

This study has revealed the importance of pensions for a decent standard of living during retirement. Indeed the only way to measure the success of any pension scheme is the sufficiency of what a beneficiary receives at the end of the day to meet the basic needs of food, clothing, health, and shelter (Obiri-Yeboah & Obiri-Yeboah, 2014).

On the contrary, by design, the pension does not replace total income or meet all financial needs in retirement fully. However, the scope and level of social protection or pension a society wants to offer its members are determined to a large extent by its values, traditions, and development strategy and much less by its economic capacity (Bonilla Garcia & Gruat, 2003).

Whatever the level of wealth, a society can afford and offer a sufficient level of pension to its members so long as the members of the society themselves and the society or state is willing to finance such levels of pensions through taxes or contributions (Cichon et al. & ILO, 2003).

The necessity for excellent or adequate pension benefits to meet the worker's financial needs in retirement is a significant concern for every worker (Schwarz, 2006; Aaron, 1999). However, this study revealed that multiple factors and circumstances affect the existence and smooth operation of pension systems. In other words, income security arrangements for people continue to be very dynamic and fluid due to rapid economic, social, technological, and environmental changes around the globe.

Some of these changes or events leading to a total or partial loss of income or hardships to individuals occur suddenly or unexpectedly, for instance, Covid-19. No one can have total or complete control over these changes and events, so these factors will continue to necessitate pension reforms and reviews of pension systems in the World. Whatever form, nature, or goals these pension reforms intend to achieve impact the pension system.

Consequently, the impact of any pension reform on pension benefits is significant. The extent to which these pension reforms address or focus on the sufficiency of pension benefits appeared to be the central gap revealed by this study. This finding constituted the basis of the research question, the extent to which pension reform leads to improved pension benefits.

Further, the research question developed became the hypothesis for testing the null hypothesis that pension reform is not a guarantee for improved pension benefits. The study used a primary exploratory research methodology with Ghana as the country for the case study. The study covered the evolution of pensions and pension reforms in Ghana from 1940 to 2010. Ghana undertook pension reforms in 1940, 1960, 1965,1972,1975,1991 and 2010.

The first reform in 1940 and the subsequent ones in 1960, 1965, and 1972 came about due to the need to increase coverage and include more workers in the pension system. Labor agitations drove 1975, 1991, and 2020 significant pension reforms in Ghana for better pension benefits.

The agitation arose from a necessary comparison of the two parallel pension systems in Ghana. The public sector non-contributory CAP 30 defined benefit scheme and the social security contributory defined benefit pension scheme.

The study established that before 1991, the CAP 30 scheme offered public sector workers who were members a monthly pension and lump-sum payment on retirement. The social security scheme, which also covered public sector workers and those in the private sector, offered only a lump-sum or one-time payment on retirement.

High inflation in the country further eroded the value of the lump-sums. Consequently, the 1991 reform converted the social security scheme into a contributory social insurance defined benefit pension scheme. The 1991 reform also introduced a monthly pension and a lump-sum pension component to equal the same two types of benefits offered by the non-contributory CAP 30 scheme.

The study further established that the lump-sum under CAP 30 with its generous benefit formula outstripped the lump-sum under the social security scheme and, in some cases, over 200% to 300% on a comparative basis. The labor agitation that ensued led to the 2010 reform, which introduced a significant reform into the pension system with a multi-pillar pension model and privatization and regulation of pensions.

The study revealed that the new 2010 reform promised a much improved and better pension benefit than what exists under CAP 30 and the 1991 social security schemes. However, the payment of full retirement benefits to the more significant majority of beneficiaries of the 2010 reform led to a public outcry across the country because the much-promised better retirement benefits under the 2010 reform never materialized and were worse than the 1991 reform and CAP 30.

The finding of this study was on a comparison of sample retirees paid under the 1991 and 2010 schemes. The findings revealed that the monthly pensions under both the old and the new schemes are not significantly different. Chapter 4 of the study thoroughly discussed this development.

The finding regarding the lump-sum revealed that the lump-sum under the old scheme is better than that of the new scheme. These findings based on qualitative data analysis complemented the quantitative data analysis using pension amounts or figures under both schemes (old and new).

The hypothesis testing conclusion is consistent with the findings of the African Center for Retirement Research based in Ghana. The Center released a report in March 2021. The Centre conducted quantitative research on the lump-sum pension paid under the old and the new schemes using information collected from 981 retirees as the sample size discussed in Chapter 4.

The report published by the Centre indicated that 81% of the retirees under the new scheme who received the lump-sum experience shortfalls when compared with lump-sum payment under the old scheme. In some cases, the shortfalls were as much as 90% in the case of public sector workers and 64% shortfalls experienced by retirees from the private sector. A further statistical test conducted by the Center also confirmed the significant difference between the lump-sum under the new scheme and the old scheme.

The findings of this study raised further issues as to the causes of the failure of 1975, 1991, and the 2010 pension reforms in Ghana to achieve the ultimate aim of pension sufficiency or adequacy. More importantly, whether privatization and financialization, especially of the second tier mandatory defined contribution scheme meant to produce lump-sum better than the old 1991 scheme and even the more generous CAP 30, have worked as expected.

The findings of this study revealed that embarking on pension reform per se may not necessarily guarantee a better pension benefit, even if that was the aim of the reform. Further, a pension model for the reform, such as a comprehensive single pillar or a pillar with a fully funded defined contribution element with privatization or the non-financial defined contribution (NDC) or the World Bank multi-pillar system, may not guarantee improved pension benefits.

It has been demonstrated by the shifting of one model to the other in some countries, as demonstrated in Chapter 2. Moreover, pension reforms in Chile, the pacesetter in pension reform, including privatization from the 1990s, 2005, 2007 up to 2020, were all aimed at increasing the number of persons covered by the pension system and improving pension benefits (Kritzer, 2008).

The position in Argentina is not different. A major parametric and structural pension reform took place in 1993. The economic deterioration, labor market conditions, and public finance indicators ignited the pressure for further reforms.

By 2001 – 2002, low coverage rates and inadequacy of pension benefits became apparent. These indications led to another reform in Argentina aimed at improving pension adequacy by changing the pension calculation formula and restoring the defined benefit pay-as-you-go scheme supported by tax revenue.

In 2008 Argentina undertook another review and reversed the privatization or private management of pensions and re-nationalized the pension system (Bertranour et al., 2018). On the contrary, Australia has maintained one comprehensive pillar pension system that is financially sound and robust over the years, but it has not suffered much pressure to reform. It appears more persons are covered by the pension system also, and benefits seem to be sufficient (Allianz pension sustainability index report, 2020).

The need for financial sustainability of pension systems arising from the increasing cost of pension provision due to the aging factor has turned to focus more on cost containment. The aging factor has arisen out of a decline in fertility, increase in life expectancy, and labor market distortions, including unemployment.

The unemployment situation has made it impossible for younger ones to be employed to increase the number of persons covered by the pension system. By the principle of contract of generations, the young ones in employment would have continued to pay the needed taxes or contributions to support the aging ones.

The pension system has eliminated old age poverty to a large extent in countries where the pension coverage rate is high. For this reason, the financial sustainability of the pension system must not be the only concern. The level of income of pensioners is also an essential factor of concern. Thus, a focus in pension reform on only pension system financial sustainability may worsen the pension income of pensioners.

In some cases, the rate of increase of pension was higher than that of market income or price inflation. In other words, the pension amount for pensioners did not keep pace with the increase in average wage growth, thus leading to a substantial reduction in pension income. For instance, the 2006 Eurostar report on pension incomes revealed that over 27% of 65 years and above in Ireland were at risk of poverty. It took a firm government policy to increase the value of pensions for state pensioners.

It follows that reform carried out to achieve pension system sustainability must be combined with concerns for maintaining pensioners' incomes. Reform based on pension sustainability alone cannot guarantee the maintenance of income of pensioners, let alone improvement of pension income.

Analyses of financial sustainability of pension issues with macro-economic models where average public pension expenditures constitute the basis are different from issues of income distribution and poverty or inequality in pension income distribution. Pension income distribution requires more complex information such as age, distribution of income sources, and distribution of family characteristics (McMorrow & Roger, 2002; Fahey & Fitzgerald, 1997; O'Donoghue & Baroni, 2008).

Pension privatization or the involvement of the private sector in the management and provision of pension services, as has been introduced in Ghana's new major pension reform, is also not a guarantee for improved pension benefits. Pension reforms in developing countries such as Ghana mostly imply the development of the financial market (Becher et al., 2012).

The development of financial markets concerning pension funds has profound implications. If the structures for implementing the reform are not clearly defined, the pension reform may end up in its implementation in a way that instead focuses or prioritizes the financial motives of the capital market institutions or the financial institutions at the expense of the traditional expectations from pension schemes.

In other words, pension income becomes a means of feeding the capital market rather than the pensioner. The operators of the privatization process may approach pension funds as a new profit-making opportunity.

Further, privatization tries to structure the pension system in the financial sphere, which does not target social rights or the life cycle income flow of the worker. In addition, privatization focuses on providing for those who are financially capable. Unless the state provides for the have-nots, the latter may have to provide for themselves.

Privatization also links pension income to financial market returns rather than a traditionally established mechanism between the state, workers, and employers. It is aside from the administrative and service charges passed on the contributor, which cumulatively over the contributor's working life may constitute a significant portion of the future pension income of the worker.

The level of fees, however, can be controlled through regulation and supervision. In sum, pension reform by way of privatization can, in reality, be pension financialization (Deken, 2013). In this regard, financial institutions become integrated into the policymaking process of the reform with financial objectives linked to pensions which are supposed to be purely a social provision.

Ideas such as increasing savings and contributions spring up to develop the capital market. Even in the countries where the pay-as-you-go public pension system is not entirely replaced by privatization, some kinds of financial schemes have been introduced, pointing to the primary purpose of strengthening the private financial involvement in the pension systems.

As previously indicated, some countries kept pension provision at relatively low levels for a long time and instead prioritized private or individual measures. This practice has proven to be insufficient. (Scholz et al. & ILO, 2000). The ultimate aim of a pension system, whatever way it operates, must ensure the well-being of the pensioner because increasing savings or contributions and growth are not ends in themselves. Still, a means to an end and is improving the well-being of the pensioner. (Orszag & Slitz, 1999).

There are macroeconomic implications for maintaining pension coverage at a superficial level because of fear of financial sustainability. Embedded in pension systems is the redistribution of a meaningful amount of the nationally produced income. Income redistribution helps in preventing poverty.

Income redistribution through the pension system enables the aged and others vulnerable to have some level of effective demand to patronize goods and services produced in the country. They also pay indirect taxes to the state as they spend on consumption.

Extensive patronage of goods and services enables the productive sector to invest more, increase production and also create more job opportunities for more people to get employed and pay contributions or taxes to support the pension system. The observation is that the lack of recognition of pension provision as a prominent element of market economics had been one of the main reasons for the failure of market capitalism in Africa in the 1990s.

It is also responsible for the failure of market capitalism in Asia, Latin America, and the Russian Federation (Scholz et al. & ILO, 2000). Thus, the pension system stabilizes an economy and does not destabilize it as had been the fear.

The study also established the existence of significant inequality in terms of coverage of the number of women and men in the pension system in Ghana. The position in terms of pension amount is not different. Men have an advantage in both over women.

As demonstrated in Chapter 3, aged women are in the majority and live longer than men. The disadvantage in pension coverage and pension amount will make them vulnerable to old-age pension poverty. The study shows that in Ghana, women are the majority of the working population.

However, the majority are in the informal economy. Less than 29% of total pensioners on the state social security pension payroll are women compared to 71% of men per April 2021 figures of the state pension scheme (SSNIT). Even though the records seemed to be pointing at the improvement in coverage, more work is needed. Coverage as of April 2021 indicates female contributors were 37.6% as against male contributors of 62.4%.

A significant possible way of addressing the inequality in terms of coverage is to establish a national informal sector pension scheme with incentives. The incentives may include tax exemptions, contribution matching, or administrative expenses subsidies to reduce charges or management fees payable by contributors.

Using the state pension scheme (SSNIT) to implement the national informal sector scheme will be the easiest and fastest. Indeed it has its infrastructure and offices spread across the country to operate a national informal sector scheme as a second scheme and at a lower cost to the nation and contributors.

If Ghana does not address the vast deficit coverage gap, the pressure to undertake reforms will increase. This study revealed that it must cover at least 75% of the population to ease reform pressure (Allianz report, 2020).

Closely linked with the issue and the need for Ghana to increase coverage is the availability of a monthly pension for all. Indeed, the major pension reform of 1991 in Ghana arose from the absence of a monthly pension for public and private sector workers from the mandatory social security scheme compared to the CAP 30 pension scheme.

The 1991 reform converted the social security provident fund scheme into a pension scheme, this resolving discrimination. The 2010 major pension reform that introduced the multi-pillar system promised the provision of periodic pensions for all. Thus, those who do not qualify to join the first tier basic social security scheme by age exemption (45 years and above) must pay all the contributions to the second tier defined contribution scheme.

All informal sector workers must also join the third tier voluntary defined contribution scheme. The new scheme provides that 75% of the total contribution plus returns in the individual account of those above 45 years who joined the second tier and all informal sector members of the third tier shall buy an annuity from an insurance company licensed by the Ghana Insurance Commission so that they could also get some monthly or periodic payment.

However, this study revealed that, since 2010, no annuity product has existed to enable retirees to take advantage of a monthly pension.

This development is another discrimination caused by the reform implementation, and if not addressed, the pressure for reform will mount gradually shortly. The situation is even more difficult because most women who are likely to live longer are in the informal sector.

Additionally, as revealed by the study, investment opportunities are limited in Ghana. Thus, the prospects of investing a lump-sum as the only retirement income at the end of working life create the problem of how to spread such lump-sum pension income over the rest of the life cycle of the retiree.

As demonstrated in Chapter 4, there is no reliable investment opportunity or asset class to invest the lump-sum to earn a real periodic income for the rest of the years ahead. This position is mainly due to high inflation and currency depreciation.

In effect, mixed pension reform policy action to achieve a balance with a primary focus of achieving maintenance and improved pension income, whether through public or private pension providers, is the way to go. Reform with a primary focus on achieving other objectives cannot guarantee the ultimate aim of a pension system which is the sufficiency of pension income.

A mixed policy pension reform comes about to help the pension system. Public investment in education, housing, and digital infrastructure increase participation in the labor market and labor productivity. (Krebs & Scheff,l, 2017).

A study of the mixed policy pension reform in Germany, for instance, indicates that investment in the three areas of education, housing, and digital infrastructure can stimulate the labor market in several ways. It can increase productivity, generate an increase in aggregate output and employment, and contribute substantially to the sustainability of public finances.

5.3. Contributions to the literature

Pension reform has become an ongoing phenomenon around the World. The arguments for the causes, the pressures for reform, the types of reforms, and implementation approaches, have been the subject of discussion in this thesis by drawing mainly on the existing literature.

All major pension reforms, including pension integration, affect pension income or benefit, which is why the establishment of pension systems. From the theoretical framework of pension reforms and all other factors for reforms analyzed, the need to ensure that an improved pension benefit is a central goal of the reform appears to be a gap in the literature that this study has brought out.

After implementing an earlier reform in Latin America, the ongoing reform addresses the adequacy of pension benefits. In some cases, the Government has to intervene to increase the pension amounts of pensioners (Morleng et al., 2006). As revealed by this study, the situation in Ghana's 2010 reform also confirms that the Government of Ghana has to step in to make the shortfalls in the lump-sum benefits under the new pension scheme (Odah, March 2021).

When pension adequacy becomes a primary central goal of every significant pension reform, attention will be on the processes in the approach chosen for implementing a significant pension reform. Requisite evaluation and impact assessment on pension benefits will become a central focus in every significant pension reform, so this study contributes to pension reform.

For, pension reform is not a guarantee for improving pension benefits. In some cases, it could not even maintain the level of the pension income before the reform. It instead made pension income worse.

From the theoretical perspective, the study analyzed the three theories and their causal arguments as the reasons for pension reforms. As discussed earlier, this study established that the causal arguments put forward by the three strands of thought could not fully explain the causes of pension reform across the globe.

Indeed there are several other reasons, as revealed by the literature review. Some of the other factors for pension reforms are to increase coverage, eliminate gender inequality, improve the effectiveness and efficiency of the system, introduce regulation and supervision, and ensure financial sustainability or pension integration, among others.

Another contribution is the emphasis on the need for every significant pension reform to have an expert national body or group to guide the implementation process (George, 2014). The literature review indicated that only the reforms in the US and the UK, a commission as expert persons, guided the reform process.

In some cases, the major pension reform created new institutions charged to be part of the reform process. Naturally, the new bodies had to find their feet first before proceeding with the role of implementing the reforms. It was the case in Ghana.

A pension regulatory body came into being as part of the reform, and it commenced the implementation of the reform intended under the scheme in 2010. Due to the lack of capacity and the need to set itself up first, the implementation of the reform got delayed.

Some of the processes, including setting up a regulatory system in respect of the existing social security scheme, the CAP 30 scheme, a unification of all public sector pension schemes in Ghana by the end of 2015, had been abandoned mainly because a lack of requisite capacity of the new regulatory body and lack of political will by the government.

The continuation of the initial presidential commission on pensions as an expert group to supervise the reform could have saved the situation. The commission comprised persons with varied backgrounds from academia, organized labor groups, employers' associations, and pension practitioners.

This group could have been a national expert body to supervise the full implementation of the 2010 major pension reforms in Ghana. Pension systems may look good on paper, but unless implemented effectively, they may fail or lead to ad-hoc and inconsistent adjustments or even a complete policy reversal. (George, 2014).

Three sets of skills are necessary for effective pension reform. These are skills in policy design, administrative and technical implementation, and political implementation. (Barr & Diamond, 2008). Thus, if implementation issues do not receive serious attention at the pension reform design stage but become an add-on or an extra, it can create serious challenges for the real reform.

Thus bringing to the fore the necessity of a national expert group or body as a necessary part of the pension reform process is a significant contribution to the literature. It is indeed a shift in the approach to effective pension reform implementation.

Again, in another unique way, the study strove to fill a significant gap in the existing literature. So far, the theoretical development and empirical testing of the gender inequality dimension of pension reforms are in the developed country context.

The case study of Ghana's 2010 major pension reform has also established, without doubt, the existence of inequality in pension coverage and pension income amount between men and women in a developing country. Indeed women are at a disadvantage in the developed country context.

Thus, the situation in Ghana, a middle-income country south of the Sahara, is not different from the global picture. Research conducted in Ghana by Comic Relief, a non-government organization that works on the aged, revealed that 90% of older persons who are destitute have never belonged to any pension system. This finding can be reasonably applied to the pension systems within Africa due to the similarities in the socio-economic environment of many African countries, including Ghana.

More significantly, the qualitative interview data contribute to the understanding of pensioners' viewpoints enhanced their knowledge and experiences within the same environment. The data validate the conceptual view that pension reform does not guarantee improved pension benefits. The qualitative findings are complemented by the quantitative findings and thereby validate and supplement the results of this study.

Additionally, the investigation or evaluation of the new pension scheme in Ghana is a fundamental contribution because tiers one and two are mandatory for workers. The third tier is to cover the entire informal sector of the economy.

Moreover, it is to make retirement income, especially lump-sums, better based on the introduction of pension privatization. Thus, highlighting the critical consequences of the reform in its eleventh year of implementation contributes to the importance and the need for evaluation of the 2010 pension reform in Ghana.

Finally, the study revealed that pension reform is a prominent multidisciplinary subject. However, relevant information about the subject is scattered.

Information about pension reform can be found in various materials by various researchers and authors who addressed various parts of the subject in articles, reports, and books. A contribution of this thesis is an attempt, even if minor, to bring together in one report almost all the relevant issues about pension reform which has become an ongoing topical subject for governments, workers, employers, researchers, and interested international organizations.

5.4. Implications for policy and practice

The findings of this study have significant implications for policymakers as well as various stakeholders in the pension industry, especially in Ghana but also possible for adaptation generally. The review of the literature in Chapter 2 and the findings of the qualitative and quantitative study, as well as the desk analysis of other secondary sources, raised fundamental issues.

This segment of the concluding discussions identified a number of the is, sues with appropriate recommendations for purposes of policy formulation. The study of the new 2010 three-tier pension scheme has revealed that after ten years of implementation, the expected better pension could not materialize. This development led to agitation and the subsequent decision by the government to make good the shortfalls in the lump-sum received by pensioners in 2020.

The issue is whether the Government can sustain the payment of shortfalls. The reality is that there was no evaluation of the new scheme since its inception in 2010 to ascertain whether or not it was possible to pay the promised better benefits in 2020. As revealed by the literature review, pension reform goes beyond the mere passage of pension reform legislation. The various actions taken to implement the reform determines the outcome.

There is no blueprint or guidelines for the full implementation of the reform. Implementation guidelines should have been part of the strategies and steps, including evaluation criteria to ensure the implementation was on target to achieve the set objectives. It is the reason the Government appeared to have been surprised by the detailed inadequacy of the pension benefits under the new scheme.

The absence of detailed and publish implementation guidelines also resulted in the abandonment of some of the significant aspects of the reform provisions in the new legislation. Some of them include the absence of a clear documented regulatory and supervision structure of the first tier compulsory basic social security scheme and no proper compliance and enforcement of the law regarding many employers who default in the payment of the second tier mandatory scheme contributions. The second tier is a defined contribution scheme based on privatization and market performance-linked returns as a determinant of the final pension benefit of the retiree. Therefore, any delay in payment or non-payment by the employer directly affects the worker's pension benefit.

The private operators do not have the mandate to enforce the law against defaulting employers. The regulatory authority has also not come out with any clear enforcement guidelines to deal with defaulting employers. This development has severe implications for the new scheme.

The other areas abandoned are regulation of the old CAP 30 pension scheme, including its decentralization to make accessibility of its services accessible. Since its inception in 1940, CAP 30 had continuously operated in the nation's capital city, Accra. The reform legislation provides for the regulation of CAP 30 by the new regulatory body to make its operations efficient. The regulator has not achieved this after ten years of implementing the scheme.

Another significant provision in the 2010 reform legislation is unifying all parallel public sector pension schemes. As discussed in Chapter 4, six public sector schemes comprising CAP 30, the social security first-tier mandatory scheme, the police service, prison service, public law officers, fire service, the securities and intelligence services, and universities superannuation schemes which are all covered by the public sector or government workers were to become one public scheme under the reform legislation through a process of unification.

The rationale for the unification is that the formula for the computation of benefits is more generous under the seven parallel public sector schemes than the social security benefit formula. Further, all the public sector or government workers under the social security scheme pay contributions towards their future pension benefits.

On the other hand, the seven other public schemes are non-contributory. The pension benefits come from state taxes. With increasing numbers of the seven schemes, the portion of state revenue for paying salaries of active workers and pensioners is increasing. With the increasing life expectancy rate, the situation is getting into unsustainable proportions, where a more significant portion of state revenue will go into payment of their benefits.

Moreover, the generous benefit formula under the seven non-contributory pension schemes has always compared pension benefits. Most public sector workers covered by the mandatory contributory social security scheme always compare their pension benefits with those of the public schemes because the same Government employs them as their employer.

The comparison and the result of sharp disparity in the quantum and types of benefits, namely monthly pension and lump-sum under CAP 30 and only a lump-sum under the 1972 reform, led to the 1991 pension reform. This reform introduced monthly pension and lump-sum as types of benefits under the social security scheme.

One would have thought that with the equal types of benefits now available under the social security scheme and the other public sector schemes, the issue of discrimination ended with the 1991 reforms. The issue of disparity in the quantum of benefits could also have ended.

However, as it turned out, the worsening of the lump-sum component of the pension under the social security scheme compared to CAP 30 and the other public sector parallel non-contributory schemes led to the 2010 pension reform. As revealed by the study, the 2010 reform has also turned out not to have achieved its aim of making pension benefits comparatively better than under the old schemes.

Unfortunately, the implementation of the intended unification stopped. The new regulatory body (NPRA) can not continue because the government lacks the political will to support the unification. Therefore, the basis of comparison and the financial unsustainability of the seven public Sector parallel schemes will continue.

As discussed earlier, annuity products issued by insurance companies licensed by the national insurance commission were to provide periodic payments equivalent to a monthly pension for informal sector contributors under the third-tier and those in the formal sector who by age exemption cannot join the mandatory first tier. Ten years after the commencement of implementations, no annuity market and products exist. This development is a significant flaw of the reform implementation.

Ghana had a minimum developed financial structure, such as fund management companies and the capital market, with regulators such as the SEC and the Bank of Ghana. So the privatization took effect with some ease. However, it is not so with the insurance sector. The Government should have facilitated the development of the insurance sector to enable the development of the insurance sector products.

The Government should have ensured or mandated the availability of indexed price annuities to reflect inflation trends as applicable to monthly pensions through annual indexation. It is achievable by Government issuing appropriate inflation-indexed or other specialized instruments to enable the annuity market to develop.

Ideally, the development of the insurance sector should also have been facilitated and pursued within the ten years by adopting the appropriate modern legislation to regulate and supervise the annuity market. Further, encouraging and promoting appropriate actuarial training, encouraging reinsurance arrangements with foreign or highly reputable reinsurers, and opening the local insurance industry for foreign participation would have helped the development of the annuity market (Impavido et al., 2002).

The inequality of pension coverage and the quantum of benefits is a fundamental finding discussed. The majority of the working population is in the informal sector. Thus, to increase coverage of a significant number of the population in the pension system and to reduce the pressure for future reforms, the establishment of a national informal sector scheme must be encouraged.

The extension of pension coverage to the informal sector must not be for privatization alone. The following are some reasons for establishing a national informal sector pension scheme in Ghana.

Apart from being a constitutional mandate of the Government of Ghana, the need to emphasize and facilitate the creation of access to social protection for the larger informal economy through deliberate state or national policy and legislative interventions also finds support from the ILO Recommendations No 202 on Social Protection Floors and the ILO Recommendation No 204 on the transition from informal to formal economy.

The others are recommendations for the maintenance of social security rights, the United Nations Sustainable Development Goals (SDG1.3), which requires the extension of coverage to all by the year 2030 and the African Union Social Policy Framework, 2008, which also requires member states to implement appropriate measures for all-inclusive minimum social, protection services as well as the African Union's social protection plan for the informal economy and rural workers (Malabo July 2011).

The Republic of Ghana is part of all these international instruments on Social Protection. The quite familiar with ILO convention No. 102 also requires that states make statutory provisions to create fiscal space for poverty reduction strategies in terms of social protection coverage for retired workers and other vulnerable citizens of all states across the planet.

In addition, Article 37 of the 1992 Constitution of the Republic of Ghana imposed a duty on the Government to establish income security schemes for the working population. The Republic of Ghana, therefore, has a responsibility to meet all the above requirements of providing, through legislation, and other actions, a safety net by way of social protection cover for its citizenry.

Historically, all legislations dealing with the social security scheme in Ghana since 1965 have provided for coverage of all workers except those expressly exempted by law. The informal sector constitutes about 86.2% of the working population of Ghana.

A World Bank report on the informal sector in Ghana revealed that the informal sector workers have a wide range of income levels, labor-intensive production processes, insecure employment, unpredictable income stream, and poor access to credit. Others include a predominance of small companies and the self-employed and wide diversity of the sector regarding income-earning patterns.

The World Bank team, through extensive engagement with participants in the sector, identified challenges that needed inclusion in the design of an informal sector scheme. The challenges included unstable income-earning characteristics, which made it impracticable for making regular contributions, the poor growth rate in coverage due to lack of business expansion, the risk of high scheme administrative overheads, and unwillingness or inability to pay regular contributions.

The others are pre-disposition of the sector to short-term savings, which provided a means of pooling and distribution of resources and the inability to comply with contribution payment requirements directly at the branch offices. Perception of non-responsiveness of the scheme to immediate needs of the contributors, bias of the sector against bureaucratic procedures and systems which called for modifications to the administrative procedures were other challenges identified.

The reality is that the current basic social security scheme or first-tier does not favor the informal sector workers. The reasons are that the informal sector workers have peculiar needs which are quite different from formal sector workers. The dynamics of the sector are quite different, and the major one is that they do not have a regular income.

They have a pretty tall wish list which the current first-tier scheme cannot provide. Some are to have access to some portion of their funds periodically. The need to provide them with monthly pension and the issuance of introductory letters to banks to access credit whenever they requested it are some of their wishes.

Others are to make it possible for them to access Healthcare through NHIA like the formal sector workers and the opportunity to pay contributions on flexible terms and also at their convenience. Another is to offer opportunities to informal sector workers who have once contributed to the first tier to continue under the new national informal sector scheme.

There are other challenges, including general unawareness, the expectation of the operators in the informal economy, affordability, and fear of losing their funds in some cases. As noted earlier, the legal framework for the informal economy workers, including migrants, to join the social protection schemes voluntarily had been there since 1965, when the state social security scheme came into being.

The informal sector workers' expectations from an informal sector social protection scheme are different. Due to the unstable nature of their operations and uncertainty in income, the majority may need to have access to a portion of their benefits to plow back into their business or meet other commitments.

The mode of enrolling in the first tier scheme and paying contributions by going to offices to fill forms and return regularly to pay contributions or going to a bank is also a significant problem. Most private scheme operators also do not have offices in many locations to offer their services. The workers in the informal economy will not leave their small businesses to pursue bureaucracy.

Some operators in the informal economy also do not have trust in the private schemes trying to cover the sector. In particular, the extension of coverage to the informal sector must be led and facilitated by the Government and launched as a national scheme, whether contributory or not.

Due to constraints on fiscal space, there is a need for deliberate efforts to set up affordable contributory schemes for all workers in the informal sector who can join contributory schemes to do so. The state social security first-tier scheme can do this easily because of its infrastructure and presence in the whole country.

Those who cannot genuinely contribute may then reduce in number. A limited number of uncovered citizens can be cared for through social assistance arrangements such as Livelihood Empowerment Against Poverty Scheme.

Furthermore, there is a rapidly changing nature of the traditional job for life concept, adversely affecting schemes designed primarily on employer payroll deductions due to the emerging trends in both public and private sector to reduce cost through measures such as downsizing, rationalization, restructuring, outsourcing of non-core jobs and to some extent use of technology.

As a result, it is not uncommon in one organization to find different classes of workers working in that same organization. They may include full-time/permanent, part-timers, casuals, others on contract, outsourced workers, and others working as independent contractors or their own accord.

The development of the virtual economy, where many people work independently but the information technology platform of others, has also created another dimension of challenge for schemes designed on direct-payroll deductions. For instance, a research article published by Open Research Europe 2021 and updated in October 2021 estimated the number of workers operating as freelancers in the virtual economy around the World at 163 million.

It is, however, the responsibility of the Government to devise appropriate means to extend coverage to all. It can be done through national strategies to cover all workers in the informal sector.

It is necessary to adopt flexibility, innovativeness, and technology in contribution collection and benefits administration for the workers in the informal economy. A sustained and continuous improvement in these areas can help achieve the desired results. However, it is equally important to improve digital literacy among the citizens.

Private sector involvement in providing social l protection services to the informal economy must be encouraged. However, experience has shown that it is not a reliable means of providing social protection for the informal economy workers.

Private schemes must make some gains on their investments, and so they may only focus on the few areas of high economic activities. On the contrary, social protection is coverage for all.

Government and SSNIT must therefore take up the issue of coverage for all by first engaging in national sensitization and education of the informal economy workers. Second, by launching an informal national scheme through the existing SSNIT national pension or first-tier structures.

5.4.1 Policy and practice recommendations for the new three-tier scheme

To ensure complete and well-thought-through implementation of the 2010 reform, and based on the findings of this study, the following recommendations are worth considering.

Undertake a baseline assessment on implementing the new three pension schemes from January 2010. Such assessment will cover the all aspects of the reform implemented so far. Assessment and evaluation of the regulatory body set up to implement the scheme must also be part of it. There must be identification and separation of implementation flaws or shortfalls and appropriate strategies adopted to correct and improve them.

The specific areas not implemented, including the unification of the public sector and schemes, development of annuity products, regulation of the CAP 30 pension scheme, and establishment of a regulatory structure over the first tier basic social security scheme, among others, must be identified. Implementing these areas in the legislation requires deliberate, carefully thought-out strategies that take statutory guidelines. It requires the identification of all relevant stakeholders of the implementation for their engagement. National experts must be involved. Implementation schedules must be developed with timelines and incorporated in the national guidelines.

Further, any necessary policy or legislation to guide the implementation, such as the annuity insurance market, must also be part of the national implementation guidelines. The desk analysis of the reports from SSNIT indicated that the pensioner population is increasing faster than contributors. The 2014 ILO actuarial report on the SSNIT scheme revealed that the contributor population grew at 2.2% annually, the pensioner population grew at 9.9 % per annum.

In other words, the pension dependency ratio, which is the number of contributors to the scheme divided by the number of pensioners on the pension payroll, revealed that the number of active contributors or workers supporting each pensioner has been dwindling.

At inception in about 1991, it was 52 to 1 pensioner. By 2005 it was 27 to 1 pensioner. The 2016 and 2019 ILO actuarial reports on the scheme, however, revealed that from 2013 the ratio had reduced to 8 to 1 pensioner and had remained so consistently with a reduction in the decimal numbers after the 8.

The number of new persons entering formal sector employment in public and private sectors is not significantly increasing. The scheme is mandatory for all formal sector workers, which indicates the unavailability of jobs in the formal public and private sectors.

As discussed in the literature review, the prediction is that by 2050 the aging population will catch up with Africa and other developing countries (ILO, 2017). The ratio of persons aged 65 years and above to persons working will be 1 to 4 by 2050.

It requires a mixed policy approach of taking deliberate action to create more jobs and increase the current compulsory legal retirement age from 60 years to 65 years. That deliberate action must begin now. (George, 2014). The mixed approach will allow new staff to be employed and increase the number of contributors. Older workers will also remain in their jobs for five more years and contribute to the scheme.

On the part of pension practitioners or operators, workers, employers, and labor organizations, workers' reactions through agitation over the years must be a significant concern. The reactions occur suddenly. The labor reactions had fortunately led to the various pension reforms in the country, including the 20l0 major pension reform.

As the study shows, the new reform has also led to another agitation and expression of public outcry about the quantum of the lump-sum component of the first majority of workers who retired under the new scheme in 2020. The situations that lead to pension inadequacy do not just happen in a day.

. If workers and organized labor had taken a keen interest in pension matters and occasionally called for evaluation and trends analysis of pension benefits, it would have come up earlier for some corrective actions.

For instance, if there were an assessment of the new scheme within the first seven years, the red flag would have shown for any corrective action. Unfortunately, this did not happen.

Alternatively, a policy intervention could have avoided the surprises that followed the payment of the benefits and the sudden agitation and public outcry. The situation is more serious when the nature of the three-tier scheme is critically analyzed. It is only the first tier basic social security scheme, a defined benefit scheme that offers a monthly pension. The coverage of the first tier, as the study revealed, is not even 20% of the working population.

The second tier mandatory occupational scheme and the third tier voluntary scheme meant to provide coverage for the more significant majority of the working population are defined contribution schemes. In other words, the benefit is a lump-sum or one-time payment.

The annuities envisaged providing periodic income for the second and third-tier contributors do not exist. The primary issue is how the retiree who received lump-sum as the only benefit will manage it for the rest of the life cycle.

The study further revealed the absence of reliable investment instruments to make a real periodic income in an inflationary situation in Ghana. Deliberate policy actions are necessary to avoid these challenges.

Employers and workers, as well as organized labor such as Trade Unions, must develop a continuous interest in pension matters. Stakeholder meetings with the pension service providers, especially the first and second-tier mandatory schemes, to know how the schemes are performing, especially regarding the delivery of future retirement income for workers, must be held periodically.

The Presidential Commission on pensions that recommended the three-tier pension scheme also recommended a mandatory annual stakeholders meeting of the first tier mandatory social security scheme. At such meetings, the annual audited accounts and operational reports, and other relevant information are published and copies made available to the stakeholders. Experts, academia, and the media scrutinize the reports and raise relevant issues for answers from the scheme administrators

Regrettably, the parent legislation and the implementation regulations made no provision for the stakeholder meetings. So since 2010, no stakeholder meeting has been held regarding the state's first-tier mandatory social security scheme.

The privatized second-tier mandatory occupational pension schemes, as well as the voluntary third-tier schemes, have also not had any. It is thus not surprising that there was a public outcry about the inadequacy of the retirement benefits paid under the new scheme to retirees in 2020, which was ten years after the commencement of the implementation.

The stakeholder meeting must therefore become mandatory for all the schemes. A statutory guideline issued by the regulatory authority can satisfy this requirement. Secondly, there is a need to introduce and institutionalize training for all workers on preparations for retirement.

Another critical area is financial education for workers. With privatization and defined contribution pension schemes, the individual worker is virtually responsible for their future retirement income.

In other words, adequacy and how to ensure that the lump-sum retirement income offered by a defined contribution scheme covers the remaining entire life cycle of the worker in retirement is now the worker's responsibility.

It is for this reason that the financial literacy of the worker becomes necessary. The worker place is the ideal environment to increase the financial literacy of the worker. Financial literacy in this context does not require sophisticated training to obtain a certificate to manage one's financial matters.

What is required is an understanding of basic knowledge of when to save, when to borrow, when to invest, when to take early retirement, and when working longer will be better. (Pickering, 2008). The suggestion is that without a successful pension plan design and financial education, a well-structured pension plan can fail to achieve retirement savings goals. (Olsen & Whitman, 2008).

Distribution of income over the career and during retirement is an issue that an employer must consider in a retirement plan for workers. The employer also controls core aspects of financial literacy at the workplace.

Matters such as the topics to be covered, delivery methods, and the frequency with which the education is available and offered are for the employer. How the worker in the compulsory second tier or the third tier voluntary schemes that are defined contribution schemes will distribute the lump-sum benefit for the rest of life in retirement can only be possible through financial education.

The involvement of both the employer and the labor Union in ensuring the institutionalization of financial literacy will help the workers now and during retirement. The surprises and outcry over the inadequacy of retirement income only after retirement will also end.

5.5. Limitations

This study examined pension reform as a specific aspect of pensions which is a broader and multi-disciplinary subject. Despite the validity of the findings in this study, there is a need for some amount of caution in any attempt to generalize. The reason is that by the vast range of the field of pensions, various external factors can inherently affect the study results.

Furthermore, this study investigated a limited subset as a sample size of a more significant number of pensioners with varying life circumstances. Consequently, it is essential to verify the findings carefully in a decision to generalize.

With the preceding in mind, it is necessary to note the following limitations.

The Covid-19 pandemic prevented the participation of more retirees in other semi-urban and rural communities where the cost of living may be comparatively cheaper. The findings also relied on the various respondents' self-reported data. These self-reported data may not necessarily reflect changing situations or circumstances of the retirees.

Further, the data have been collected from a single country, the Republic of Ghana, and used as a case study. It facilitated the data collection and use of the limited available resource. However, it has an inherent limitation for generalizing the findings.

In addition, the researcher, as a pension practitioner, is very familiar with the pension industry and many stakeholders in the industry in Ghana. This familiarity could create some element of bias, but it instead facilitated data collection.

Despite these limitations, the research effectively brought out a complete understanding of pension reforms and their impact on pension benefits. The study thoroughly established an understanding of pension reforms and their impact on pension benefits. The study validates the finding that it is critically vital that improvement on pension benefits or adequacy is a central goal and a focus in pension reforms to avoid reform after reform or reform reversal in some cases. (George, 2014).

5.6. Future research directions

As indicated in Chapter 1 of this thesis, the research envisaged a developing country context which is an overlooked area in academic research on pension reforms. So the findings of this research, for instance, the prevalence of gender inequity in pensions, provide some insights and directions for future research.

Additionally, this study, through a combination of qualitative and quantitative data, raised several challenges and issues, which provides opportunities for further research into pension reforms. Thus, the following suggestions are vital for further research.

In the first place, some of the findings based on the data from a developing country that validated the findings of this study are also not entirely new evidence, and some could be tentative findings. Therefore, there is a need for further studies to validate from different country contexts.

A study from another developing country similar to Ghana could also be worthwhile in further validating the findings. Replicating this study in another developing country will also enhance the generalization of the present findings.

Secondly, this study thoroughly examined the causes of the failure of the new three-tier pension scheme to provide better pension benefits than the old 1991 scheme. It is vital as an immediate future research avenue to investigate the causal factors.

It is crucial because the recommendations of the Presidential Commission for the three-tier multi-pillar system also based its work and predictions of a better pension on actuarial assessment and statistics. Such further research will help take future proactive measures to improve the new scheme. Issues like what led to a lower lump-sum under the new scheme in the privatization of pension linked to market performance need a careful investigation. What accounted for the sharp inequality between men and women in the pension system in Ghana and how to avoid the phenomenon of reform after reform all require investigation with appropriate recommendations.

Finally, this research did not assess the competencies, knowledge, and experience of the regulatory authority staff required to fully implement the reform provisions contained in the legislation (National Pensions Act, 2008, Act 766). They ensure that the new scheme achieved its stated objectives, including better pensions.

The regulatory authority is a one-stop model required to have all the competencies to regulate and supervise everything about the pension industry. These include licensing all operators under the privatization arrangement investment of the funds, among many others. The investigations of the competencies of the regulatory body to execute its mandate effectively and efficiently provide another good research opportunity.

Finally, the pension has become an indispensable need and a universal human right of every human being. The design and setup of the pension system by every country are according to the economic, social, political, cultural, and environmental circumstances of that country. By nature, embedded in every pension system are various risks that constitute challenges for the overall sustainability of the system.

To this end, socio-economic and technological changes also affect pensions coupled with continuously changing expectations of beneficiaries about the sufficiency of pension benefits to meet their daily necessities of life. There is thus pressure on the pension systems to undergo reforms to meet the challenges and make things better.

Some of the reforms required are major, and others are minor. It requires the political will, stakeholder involvement, innovation from scheme administrators, and availability of resources to carry out the necessary reforms. The pressure for reforms of pension systems will always be there; however, to build a reasonably sustainable pension system in the future, a periodical evaluation of the pension system is necessary. The evaluation helps improve and deal with likely causes or pressures for reform. This study established that pension reform does not necessarily improve pension benefits.

Reforms must be well planned and implemented with expertise and focus, bearing in mind that there is no one-size-fits-all approach to pension reform. So long as pension benefits are sufficient to meet the daily necessities of beneficiaries and the pension system covers the majority of the citizenry, there will exist minimal pressure for reform.

APPENDIX 1

RESULT OF RESPONSES TO THE SURVEY INTERVIEW (OLD 1991 SSNIT PENSION SCHEME PNDC LAW 247) 25% LUMP SUM BENEFIT									
NO	**GENDER**	**AGE RETIRED**	**LEVEL OF EDUCATION**	**TYPES OF PENSION SCHEME**	**SECTOR WORKED**		**PERIOD OF CONTRIBUTION (YEARS)**	**LEVEL OF SATISFACTION**	
					PUBLIC	**PRIVATE**		**MONTHLY PENSION**	**LUMP SUM**
1	M	60	1ST DEG	OLD SCHEME	X		26	SD	SD
2	M	60	1ST DEG	OLD SCHEME		X	29	D	D
3	F	60	DIP.	OLD SCHEME	X		40	D	SD
4	M	60	1ST DEG	OLD SCHEME		X	26	D	SD
5	M	60	DOCTORATE	OLD SCHEME	X		33	SD	SD
6	M	60	DIP.	OLD SCHEME	X		26	SD	D
7	F	60	PROF. Q	OLD SCHEME		X	39	D	SD
8	M	55	SECTEC	OLD SCHEME	X	X	26	SD	SD
9	M	60	1ST DEG	OLD SCHEME		X	34	D	SD
10	F	60	SECTEC	OLD SCHEME	X		31	SD	D
11	M	60	DIP.	OLD SCHEME	X		26	SD	D
12	M	60	1ST DEG	OLD SCHEME	X		35	D	SD
13	F	59	SECTEC	OLD SCHEME	X		30	SD	D
14	M	60	1ST DEG	OLD SCHEME	X		28	SD	SD
15	M	60	MASTERS	OLD SCHEME		X	26	D	SD

16	F	60	SECTEC	OLD SCHEME	X		25	SD	SD
17	M	59	SECTEC	OLD SCHEME		X	30	D	D
18	M	61	1ST DEG	OLD SCHEME	X		23	SD	SD
19	F	60	1ST DEG	OLD SCHEME	X		29	D	D
20	M	60	1ST DEG	OLD SCHEME		X	26	SD	D
21	M	60	MASTERS	OLD SCHEME	X		21	SD	D
22	F	60	DEP.	OLD SCHEME		X	35	D	D
23	F	58	SECTEC	OLD SCHEME		X	26	SD	D
24	M	60	1ST DEG	OLD SCHEME	X		21	SD	SD
25	F	60	DIP.	OLD SCHEME	X		33	D	D
26	M	62	1ST DEG	OLD SCHEME	X		28	D	SD
27	F	60	SECTEC	OLD SCHEME	X		26	D	D
28	M	60	MSLC	OLD SCHEME	X		24	SD	SD
29	M	61	DOCTORATE	OLD SCHEME		X	40	D	D
30	F	60	DIP.	OLD SCHEME	X		26	SD	D
31	F	60	1ST DEG	OLD SCHEME	X		31	SD	SD
32	M	60	PROF. Q	OLD SCHEME	X		26	SD	D
33	M	57	DIP.	OLD SCHEME	X		28	SD	SD
34	M	60	1ST DEG	OLD SCHEME	X		34	S	D
35	F	60	MASTERS	OLD SCHEME	X		31	D	D

36	M	59	DIP.	OLD SCHEME		X	33	D	SD
37	F	61	1ST DEG	OLD SCHEME		X	39	S	D
38	F	61	1ST DEG	OLD SCHEME	X		27	D	SD
39	M	59	DIP.	OLD SCHEME	X		29	SD	SD
40	F	60	1ST DEG	OLD SCHEME		X	31	D	D
41	M	61	DIP.	OLD SCHEME	X		21	SD	SD
42	F	60	1ST DEG	OLD SCHEME	X		29	SD	D
43	F	60	1ST DEG	OLD SCHEME		X	31	S	D
44	M	59	1ST DEG	OLD SCHEME	X		21	SD	SD
45	M	60	1ST DEG	OLD SCHEME	X		26	D	D
46	M	60	DIP.	OLD SCHEME	X		27	D	D
47	F	60	1ST DEG	OLD SCHEME		X	37	SD	SD
48	M	61	DIP.	OLD SCHEME	X		26	SD	D
49	M	60	MASTERS	OLD SCHEME	X		34	SD	SD
50	F	59	DIP.	OLD SCHEME		X	21	SD	SD
51	M	62	DIP.	OLD SCHEME	X		33	D	SD
52	F	60	MSLC	OLD SCHEME	X		21	SD	D
53	M	60	PROF. Q	OLD SCHEME	X		28	SD	SD
54	F	60	NO EDUCATION	OLD SCHEME	X		20	SD	D
55	M	63	1ST DEG	OLD SCHEME		X	30	SD	SD

56	F	60	MSLC	OLD SCHEME	X		28	SD	D
57	F	60	1ST DEG	OLD SCHEME	X		35	S	D
58	M	55	SECTEC	OLD SCHEME	X		27	SD	SD
59	M	60	1ST DEG	OLD SCHEME		X	33	D	D
60	M	60	MASTERS	OLD SCHEME	X		29	SD	SD
61	F	60	DIP.	OLD SCHEME	X		26	D	D
62	M	61	MSLC	OLD SCHEME	X		27	SD	SD
63	F	60	1ST DEG	OLD SCHEME		X	36	SD	D
64	M	56	SECTEC	OLD SCHEME	X		28	SD	SD
65	F	60	DIP.	OLD SCHEME	X		26	SD	SD
66	M	62	MSLC	OLD SCHEME		X	40	D	D
67	M	60	1ST DEG	OLD SCHEME	X		27	SD	D
68	F	60	DIP.	OLD SCHEME		X	31	D	SD
69	M	60	MASTERS	OLD SCHEME	X		26	D	D
70	M	57	SECTEC	OLD SCHEME	X		21	SD	D
71	F	60	1ST DEG	OLD SCHEME		X	29	SD	SD
72	M	60	SECTEC	OLD SCHEME	X		26	SD	D
73	F	60	SECTEC	OLD SCHEME	X		27	SD	SD
74	M	60	1ST DEG	OLD SCHEME		X	28	D	D
75	M	61	PROF. Q	OLD SCHEME		X	34	SD	SD

76	F	60	DIP.	OLD SCHEME	X		29	D	SD
77	M	56	DIP.	OLD SCHEME	X		20	SD	D
78	F	60	DIP.	OLD SCHEME		X	27	SD	SD
79	M	63	DIP.	OLD SCHEME	X		31	D	D
80	F	60	1ST DEG	OLD SCHEME		X	24	SD	SD
81	F	60	SECTEC	OLD SCHEME	X		26	SD	D
82	M	59	1ST DEG	OLD SCHEME	X		39	D	SD
83	M	57	DIP.	OLD SCHEME	X		29	SD	D
84	F	60	NO EDUCATION	OLD SCHEME	X		32	D	D
85	M	62	DIP.	OLD SCHEME		X	27	SD	SD
86	M	60	DOCTORATE	OLD SCHEME	X		31	D	D
87	F	60	NO EDUCATION	OLD SCHEME		X	29	SD	D
88	M	60	DIP.	OLD SCHEME	X		27	SD	SD
89	F	60	1ST DEG	OLD SCHEME	X		30	S	D
90	M	62	SECTEC	OLD SCHEME	X		26	SD	SD
91	F	60	DIP.	OLD SCHEME	X		27	SD	D
92	M	60	1ST DEG	OLD SCHEME		X	31	D	D
93	M	55	DIP.	OLD SCHEME	X		27	SD	SD
94	F	60	PROF. Q	OLD SCHEME		X	36	D	D
95	M	60	DIP.	OLD SCHEME	X		27	SD	D

96	F	60	SECTEC	OLD SCHEME	X		30	D	SD
97	M	61	MASTERS	OLD SCHEME	X		26	SD	D
98	M	60	NO EDUCATION	OLD SCHEME	X		29	D	SD
99	M	58	SECTEC	OLD SCHEME		X	27	SD	D
100	F	60	1ST DEG	OLD SCHEME	X		27	SD	SD
101	M	59	1ST DEG	OLD SCHEME		X	35	D	D
102	F	60	NP	OLD SCHEME	X		26	SD	D
103	M	62	DIP.	OLD SCHEME	X		31	SD	SD
104	F	60	NO EDUCATION	OLD SCHEME	X		29	SD	D
105	M	61	SECTEC	OLD SCHEME	X		36	D	SD
106	F	60	DIP.	OLD SCHEME		X	32	D	D
107	M	60	MASTERS	OLD SCHEME	X		29	SD	SD
108	M	60	DIP.	OLD SCHEME	X		26	SD	SD
109	F	61	SECTEC	OLD SCHEME		X	29	SD	D
110	F	60	DIP.	OLD SCHEME	X		27	SD	SD
111	F	59	SECTEC	OLD SCHEME		X	32	D	SD
112	M	60	DIP.	OLD SCHEME	X		34	D	SD
113	M	60	1ST DEG	OLD SCHEME		X	26	SD	D
114	F	60	DIP.	OLD SCHEME	X		27	SD	SD
115	M	58	1ST DEG	OLD SCHEME	X		20	SD	SD

116	F	60	DIP.	OLD SCHEME		X	32	D	D
117	M	60	1ST DEG	OLD SCHEME	X		26	SD	SD
118	F	60	DOCTORATE	OLD SCHEME	X		27	SD	D
119	M	56	DIP.	OLD SCHEME		X	29	D	SD
120	M	60	1ST DEG	OLD SCHEME	X		27	SD	D
121	F	60	NO EDUCATION	OLD SCHEME	X		26	SD	SD
122	F	60	1ST DEG	OLD SCHEME		X	35	D	D
123	F	60	DIP.	OLD SCHEME	X		27	SD	D
124	M	61	1ST DEG	OLD SCHEME	X		29	D	D
125	M	60	NO EDUCATION	OLD SCHEME	X		26	SD	SD
126	M	60	PROF. Q	OLD SCHEME		X	34	D	D
127	F	60	DIP.	OLD SCHEME		X	29	D	D
128	M	57	DI[P	OLD SCHEME	X		25	SD	SD
129	M	62	DIP.	OLD SCHEME	X		26	SD	SD
130	F	60	1ST DEG	OLD SCHEME		X	39	D	D
131	M	59	SECTEC	OLD SCHEME		X	32	D	D
132	F	60	MSLC	OLD SCHEME	X		26	SD	SD
133	M	60	MASTERS	OLD SCHEME	X		32	D	D
134	M	60	MSLC	OLD SCHEME	X		29	SD	SD
135	F	60	1ST DEG	OLD SCHEME	X		25	SD	SD

136	M	60	SECTEC	OLD SCHEME		X	29	D	D
137	M	60	DIP.	OLD SCHEME	X		26	SD	SD
138	F	61	1ST DEG	OLD SCHEME		X	38	D	SD
139	F	60	DIP.	OLD SCHEME	X		32	D	D
140	M	59	1ST DEG	OLD SCHEME	X		26	SD	SD
141	F	60	MASTERS	OLD SCHEME		X	36	D	D
142	M	60	1ST DEG	OLD SCHEME	X		27	SD	SD
143	M	63	SECTEC	OLD SCHEME		X	33	D	SD
144	M	60	1ST DEG	OLD SCHEME	X		31	D	D
145	F	59	SECTEC	OLD SCHEME	X		20	SD	SD
146	M	62	1ST DEG	OLD SCHEME		X	31	D	D
147	F	60	1ST DEG	OLD SCHEME	X		27	SD	DD
148	M	60	1ST DEG	OLD SCHEME	X		33	S	D
149	F	60	DIP.	OLD SCHEME		X	31	D	D
150	M	59	DIP.	OLD SCHEME	X		22	SD	SD
151	M	60	MASTERS	OLD SCHEME	X		29	D	SD
152	M	60	PROF. Q	OLD SCHEME		X	26	SD	D
153	F	60	1ST DEG	OLD SCHEME	X		25	SD	SD
154	M	60	MSLC	OLD SCHEME	X		20	SD	D
155	F	60	DIP.	OLD SCHEME	X		31	D	SD

156	M	57	SECTEC	OLD SCHEME		X	20	SD	D
157	F	60	DIP.	OLD SCHEME	X		38	D	SD
158	M	60	1ST DEG	OLD SCHEME	X		29	SD	D
159	F	60	SECTEC	OLD SCHEME	X		26	SD	SD
160	M	61	NO EDUCATION	OLD SCHEME	X		33	D	SD
161	M	60	PROF. Q	OLD SCHEME		X	26	SD	D
162	F	60	SECTEC	OLD SCHEME	X		22	SD	SD
163	M	60	NO EDUCATION	OLD SCHEME	X		20	SD	SD
164	M	59	DIP.	OLD SCHEME		X	33	D	SD
165	F	60	BO	OLD SCHEME	X		23	SD	SD
166	M	56	SECTEC	OLD SCHEME	X		29	D	SD
167	F	60	MSLC	OLD SCHEME		X	22	SD	SD
168	F	60	1ST DEG	OLD SCHEME	X		37	D	D
169	F	60	SECTEC	OLD SCHEME	X		29	SD	SD
170	M	63	MASTERS	OLD SCHEME		X	26	D	D
171	F	57	SECTEC	OLD SCHEME	X		23	SD	D
172	M	60	PROF. Q	OLD SCHEME		X	26	SD	SD
173	M	60	1ST DEG	OLD SCHEME	X		22	SD	D
174	F	60	NO EDUCATION	OLD SCHEME	X		25	SD	SD
175	F	60	DIP.	OLD SCHEME	X		37	D	D

176	M	61	DIP.	OLD SCHEME	X		29	SD	SD
177	M	60	NO EDUCATION	OLD SCHEME		X	22	SD	SD
178	M	59	SECTEC	OLD SCHEME	X		25	SD	SD
179	F	60	PROF. Q	OLD SCHEME	X		33	D	D
180	M	60	MATS	OLD SCHEME	X		29	SD	SD
181	M	60	SECTEC	OLD SCHEME		X	29	SD	SD
182	F	60	SECTEC	OLD SCHEME	X		21	SD	SD
183	M	60	DIP.	OLD SCHEME	X		29	D	D
184	M	60	SECTEC	OLD SCHEME		X	21	SD	SD
185	F	60	1ST DEG	OLD SCHEME	X		31	D	D
186	M	60	DIP.	OLD SCHEME	X		27	D	SD
187	M	60	DIP.	OLD SCHEME		X	22	SD	D
188	F	60	1ST DEG	OLD SCHEME	X		31	D	SD
189	M	62	MSLC	OLD SCHEME		X	22	SD	SD
190	F	60	1ST DEG	OLD SCHEME	X		26	SD	D
191	F	60	MSLC	OLD SCHEME	X		29	D	D
192	M	59	SECTEC	OLD SCHEME	X		26	SD	SD
193	F	60	MSLC	OLD SCHEME	X		29	SD	SD
194	M	58	SECTEC	OLD SCHEME	X		22	SD	D
195	M	61	PROF. Q	OLD SCHEME	X		35	D	D

196	F	60	MSLC	OLD SCHEME	X		26	SD	SD
197	M	59	SECTEC	OLD SCHEME	X		29	SD	SD
198	F	60	SECTEC	OLD SCHEME	X		37	D	SD
199	M	60	1ST DEG	OLD SCHEME		X	32	D	D
200	M	60	1ST DEG	OLD SCHEME	X		35	D	SD

Key to meaning of level of satisfaction:

D - Dissatisfied

SD-Strongly Dissatisfied

S- Satisfied

APPENDIX 2

RESULT OF RESPONSES TO THE SURVEY INTERVIEW (2010 NEW THREE TIER PENSION SCHEME ACT 766) PAST CREDIT PLUS SECOND TIER LUMP SUM BENEFIT									
NO	**GENDER**	**AGE RETIRED**	**LEVEL OF EDUCATION**	**TYPES OF PENSION SCHEME**	**SECTOR WORKED**		**PERIOD OF CONTRIBUTION (YEARS)**	**LEVEL OF SATISFACTION**	
					PUBLIC	**PRIVATE**		**MONTHLY PENSION**	**LUMP SUM**
1	M	60	1ST DEG	NEW SCHEME	X		33	D	SD
2	M	60	SECTEC	NEW SCHEME		X	25	D	SD
3	F	58	DIP.	NEW SCHEME	X		20	SD	D
4	M	60	PROF. Q	NEW SCHEME		X	28	D	SD
5	F	57	1ST DEG	NEW SCHEME	X		21	SD	SD
6	M	60	MSLC	NEW SCHEME	X		27	SD	SD
7	M	55	1ST DEG	NEW SCHEME		X	18	SD	SD
8	M	60	PROF. Q	NEW SCHEME	X		36	D	SD
9	F	59	SECTEC	NEW SCHEME	X		21	D	SD
10	M	61	DOCTORATE	NEW SCHEME		X	33	D	SD
11	M	60	1ST DEG	NEW SCHEME	X		18	D	SD
12	M	56	DIP.	NEW SCHEME	X		31	D	SD
13	M	60	1ST DEG	NEW	X		27	D	SD

				SCHEME					
14	M	61	1ST DEG	NEW SCHEME		X	25	D	SD
15	F	60	MASTERS	NEW SCHEME	X		35	D	SD
16	F	56	1ST DEG	NEW SCHEME	X		21	D	SD
17	M	60	DEP.	NEW SCHEME	X		18	D	SD
18	M	60	1ST DEG	NEW SCHEME		X	27	D	SD
19	M	60	SECTEC	NEW SCHEME	X		30	D	SD
20	F	60	PROF. Q	NEW SCHEME	X		30	D	SD
21	M	55	1ST DEG	NEW SCHEME	X		18	D	SD
22	M	59	DEP.	NEW SCHEME	X		33	D	SD
23	M	60	DOCTORATE	NEW SCHEME	X		28	D	SD
24	M	56	SECTEC	NEW SCHEME		X	19	D	SD
25	M	60	DIP.	NEW SCHEME	X		35	D	SD
26	F	60	DIP.	NEW SCHEME	X		35	D	SD
27	M	57	DIP.	NEW SCHEME		X	23	D	SD
28	M	60	PROF. Q	NEW SCHEME	X		29	D	SD
29	M	58	MASTERS	NEW SCHEME	X		25	D	SD

30	M	60	DIP.	NEW SCHEME	X		40	D	SD
31	M	60	MASTERS	NEW SCHEME	X		29	D	SD
32	M	60	1ST DEG	NEW SCHEME		X	31	D	SD
33	F	60	MSLC	NEW SCHEME	X		26	D	SD
34	M	55	DIP.	NEW SCHEME	X		20	D	SD
35	M	59	PROF. Q	NEW SCHEME		X	31	D	SD
36	M	57	DIP.	NEW SCHEME	X		18	D	SD
37	M	61	SECTEC	NEW SCHEME	X		26	D	SD
38	M	60	1ST DEG	NEW SCHEME		X	15	D	SD
39	M	58	MASTERS	NEW SCHEME	X		31	D	SD
40	M	60	DIP.	NEW SCHEME	X		26	D	SD
41	F	60	1ST DEG	NEW SCHEME		X	27	D	SD
42	M	55	DIP.	NEW SCHEME	X		15	D	SD
43	M	56	DIP.	NEW SCHEME	X		18	D	SD
44	M	59	SECTEC	NEW SCHEME	X		21	D	SD
45	F	62	MASTERS	NEW SCHEME		X	27	D	SD
46	F	60	DIP.	NEW	X		23	D	SD

				SCHEME					
47	F	60	DOCTORATE	NEW SCHEME	X		29	D	SD
48	M	55	SECTEC	NEW SCHEME	X		19	D	SD
49	M	57	DIP.	NEW SCHEME	X		18	D	SD
50	M	62	SECTEC	NEW SCHEME	X		19	D	SD
51	F	60	DIP.	NEW SCHEME	X		37	D	SD
52	M	57	1ST DEG	NEW SCHEME		X	19	D	SD
53	M	60	PROF. Q	NEW SCHEME	X		31	D	SD
54	M	56	MASTERS	NEW SCHEME	X		30	D	SD
55	F	59	1ST DEG	NEW SCHEME		X	21	D	SD
56	M	60	DIP.	NEW SCHEME	X		35	D	SD
57	M	58	DIP.	NEW SCHEME	X		27	D	SD
58	M	60	SECTEC	NEW SCHEME	X		26	D	SD
59	F	60	DIP.	NEW SCHEME	X		27	D	SD
60	M	57	SECTEC	NEW SCHEME	X		15	D	SD
61	M	60	DIP.	NEW SCHEME	X		23	D	SD
62	M	60	PROF. Q	NEW SCHEME		X	31	D	SD

63	M	55	1ST DEG	NEW SCHEME	X		36	D	SD
64	M	60	DIP.	NEW SCHEME	X		33	D	SD
65	M	57	SECTEC	NEW SCHEME	X		27	D	SD
66	F	60	1ST DEG	NEW SCHEME		X	29	D	SD
67	M	62	1ST DEG	NEW SCHEME		X	26	D	SD
68	M	60	PROF. Q	NEW SCHEME	X		27	D	SD
69	M	56	MSLC	NEW SCHEME	X		24	D	SD
70	F	60	1ST DEG	NEW SCHEME	X		31	D	SD
71	M	59	DIP.	NEW SCHEME		X	27	D	SD
72	M	60	DIP.	NEW SCHEME	X		24	D	SD
73	M	65	SECTEC	NEW SCHEME		X	26	D	SD
74	F	60	DIP.	NEW SCHEME	X		21	D	SD
75	M	62	PROF. Q	NEW SCHEME		X	27	D	SD
76	M	59	DIP.	NEW SCHEME	X		17	D	SD
77	M	60	DOCTORATE	NEW SCHEME	X		25	D	SD
78	M	61	1ST DEG	NEW SCHEME		X	31	D	D
79	F	60	DIP.	NEW	X		20	D	SD

				SCHEME					
80	M	60	SECTEC	NEW SCHEME	X		19	D	SD
81	M	55	DIP.	NEW SCHEME	X		27	D	SD
82	M	60	1ST DEG	NEW SCHEME	X		31	D	SD
83	M	60	PROF. Q	NEW SCHEME		X	29	D	SD
84	F	60	SECTEC	NEW SCHEME	X		20	D	SD
85	M	56	1ST DEG	NEW SCHEME		X	15	D	SD
86	M	60	1ST DEG	NEW SCHEME	X		24	D	SD
87	M	58	DIP.	NEW SCHEME	X		19	D	SD
88	M	60	SECTEC	NEW SCHEME	X		21	D	SD
89	F	57	1ST DEG	NEW SCHEME	X		37	D	SD
90	M	60	DIP.	NEW SCHEME	X		20	D	SD
91	M	55	1ST DEG	NEW SCHEME		X	19	D	SD
92	F	60	DIP.	NEW SCHEME	X		33	D	SD
93	F	60	PROF. Q	NEW SCHEME		X	24	D	SD
94	M	54	DIP.	NEW SCHEME	X		22	D	SD
95	M	60	NO EDUCATION	NEW SCHEME	X		19	D	SD

96	F	60	DIP.	NEW SCHEME		X	35	D	D
97	M	54	SECTEC	NEW SCHEME	X		26	D	SD
98	M	60	DIP.	NEW SCHEME	X		22	D	SD
99	F	60	1ST DEG	NEW SCHEME		X	22	D	SD
100	M	60	1ST DEG	NEW SCHEME	X		26	D	SD
101	M	60	1ST DEG	NEW SCHEME	X		30	D	SD
102	M	60	MSLC	NEW SCHEME	X		19	D	SD
103	F	60	1ST DEG	NEW SCHEME	X		40	D	SD
104	M	56	PROF. Q	NEW SCHEME		X	25	D	SD
105	M	60	1ST DEG	NEW SCHEME	X		26	D	SD
106	M	57	SECTEC	NEW SCHEME		X	20	D	SD
107	M	59	DIP.	NEW SCHEME	X		26	D	SD
108	F	60	1ST DEG	NEW SCHEME		X	26	D	SD
109	M	57	1ST DEG	NEW SCHEME	X		16	D	SD
110	F	60	SECTEC	NEW SCHEME	X		19	D	SD
111	M	60	DIP.	NEW SCHEME	X		17	D	SD
11	F	60	DOCTORATE	NEW	X		22	D	SD

2				SCHEME					
113	M	56	1ST DEG	NEW SCHEME		X	15	D	SD
114	M	59	DIP.	NEW SCHEME	X		20	D	SD
115	M	60	1ST DEG	NEW SCHEME		X	20	D	SD
116	M	57	SECTEC	NEW SCHEME	X		18	D	SD
117	F	60	DIP.	NEW SCHEME	X		26	D	SD
118	F	60	1ST DEG	NEW SCHEME	X		20	D	SD
119	F	58	MASTERS	NEW SCHEME		X	18	D	SD
120	M	60	SECTEC	NEW SCHEME	X		22	D	SD
121	M	55	MSLC	NEW SCHEME	X		18	D	SD
122	M	60	1ST DEG	NEW SCHEME		X	31	D	SD
123	F	56	SECTEC	NEW SCHEME	X		26	D	SD
124	M	59	PROF. Q	NEW SCHEME		X	22	D	SD
125	M	61	1ST DEG	NEW SCHEME	X		20	D	SD
126	M	60	SECTEC	NEW SCHEME	X		26	D	SD
127	F	60	MASTERS	NEW SCHEME		X	23	D	SD
128	M	60	1ST DEG	NEW SCHEME	X		26	D	SD

129	F	60	DIP.	NEW SCHEME	X		18	D	SD
130	M	57	SECTEC	NEW SCHEME	X		15	D	SD
131	M	59	PROF. Q	NEW SCHEME	X		26	D	SD
132	F	60	DIP.	NEW SCHEME		X	39	D	SD
133	M	60	MASTERS	NEW SCHEME	X		20	D	SD
134	M	55	1ST DEG	NEW SCHEME	X		17	D	SD
135	M	58	PROF. Q	NEW SCHEME		X	31	D	SD
136	M	61	1ST DEG	NEW SCHEME	X		20	D	SD
137	F	60	1ST DEG	NEW SCHEME		X	20	D	SD
138	M	56	1ST DEG	NEW SCHEME	X		15	D	SD
139	M	59	NO EDUCATION	NEW SCHEME	X		17	D	SD
140	F	60	DIP.	NEW SCHEME	X		18	D	SD
141	M	60	SECTEC	NEW SCHEME	X		16	D	SD
142	M	60	DIP.	NEW SCHEME		X	26	D	SD
143	M	57	DIP.	NEW SCHEME	X		15	D	SD
144	M	60	DIP.	NEW SCHEME	X		20	D	SD
14	M	55	PROF. Q	NEW		X	25	D	SD

5				SCHEME					
146	M	60	SECTEC	NEW SCHEME	X		17	D	SD
147	F	60	DIP.	NEW SCHEME	X		20	D	SD
148	M	56	MSLC	NEW SCHEME	X		16	D	SD
149	M	55	1ST DEG	NEW SCHEME	X		17	SD	SD
150	F	60	MASTERS	NEW SCHEME	X		32	SD	SD
151	M	60	DIP.	NEW SCHEME	X		16	SD	SD
152	M	60	NO EDUCATION	NEW SCHEME	X		26	SD	SD
153	F	56	MSLC	NEW SCHEME	X	X	17	SD	SD
154	M	60	1ST DEG	NEW SCHEME	X		26	SD	SD
155	M	56	1ST DEG	NEW SCHEME		X	17	SD	SD
156	M	60	SECTEC	NEW SCHEME	X		37	D	SD
157	F	60	1ST DEG	NEW SCHEME	X		28	D	SD
158	F	56	SECTEC	NEW SCHEME		X	16	D	SD
159	M	60	DIP.	NEW SCHEME	X		24	D	SD
160	M	57	PROF. Q	NEW SCHEME	X		25	D	SD
161	M	60	DIP.	NEW SCHEME	X		23	D	SD

162	M	60	1ST DEG	NEW SCHEME		X	38	D	D
163	M	58	MSLC	NEW SCHEME	X		26	D	SD
164	F	59	1ST DEG	NEW SCHEME	X		26	D	SD
165	M	60	SECTEC	NEW SCHEME		X	16	D	SD
166	F	60	MASTERS	NEW SCHEME		X	32	D	D
167	M	60	1ST DEG	NEW SCHEME	X		26	D	SD
168	F	55	SECTEC	NEW SCHEME	X		16	D	SD
169	M	60	DIP.	NEW SCHEME	X		34	D	SD
170	M	58	1ST DEG	NEW SCHEME	X		28	D	SD
171	M	60	SECTEC	NEW SCHEME	X		24	D	SD
172	F	57	1ST DEG	NEW SCHEME	X		26	D	SD
173	M	60	PROF. Q	NEW SCHEME		X	28	D	SD
174	M	60	DIP.	NEW SCHEME	X		23	D	SD
175	F	56	1ST DEG	NEW SCHEME	X		17	D	SD
176	M	60	DIP.	NEW SCHEME	X		36	D	SD
177	M	60	MSLC	NEW SCHEME	X		15	D	SD
17	F	60	MASTERS	NEW	X		26	D	SD

8				SCHEME					
179	M	58	1ST DEG	NEW SCHEME	X		23	D	SD
180	F	60	1ST DEG	NEW SCHEME	X		24	D	SD
181	M	55	1ST DEG	NEW SCHEME		X	32	D	D
182	M	60	NO EDUCATION	NEW SCHEME	X		26	D	SD
183	F	60	SECTEC	NEW SCHEME	X		16	D	SD
184	M	57	DIP.	NEW SCHEME	X		17	D	SD
185	M	59	MASTERS	NEW SCHEME		X	28	D	SD
186	F	59	DIP.	NEW SCHEME	X		16	D	SD
187	M	55	1ST DEG	NEW SCHEME		X	34	D	SD
188	M	60	SECTEC	NEW SCHEME	X		23	D	SD
189	F	60	DIP.	NEW SCHEME	X		26	D	SD
190	M	56	1ST DEG	NEW SCHEME	X		17	D	SD
191	M	60	MASTERS	NEW SCHEME	X		38	D	SD
192	F	60	1ST DEG	NEW SCHEME		X	24	D	SD
193	M	58	SECTEC	NEW SCHEME	X		17	D	SD
194	F	60	1ST DEG	NEW SCHEME	X		32	D	SD

195	M	55	1ST DEG	NEW SCHEME		X	22	D	SD
196	M	60	1ST DEG	NEW SCHEME	X		25	D	SD
197	M	56	1ST DEG	NEW SCHEME	X		15	D	SD
198	F	60	MASTERS	NEW SCHEME	X		36	D	SD
199	F	60	DIP.	NEW SCHEME	X		23	D	SD
200	M	60	1ST DEG	NEW SCHEME		X	28	D	D

Key to meaning of level of satisfaction:

D - Dissatisfied

SD-Strongly Dissatisfied

S- Satisfied

APPENDIX 3

APPENDIX

QUESTIONNAIRE FOR QUALITATIVE STUDY
(STRICTLY CONFIDENTIAL)

QUESTIONNAIRE PREPARED FOR A PHD RESEARCH PROJECT

BY PETER HAYIBOR (PHD CANDIDATE)

YOUR COMPLETION OF THIS QUESTIONNAIRE IS GREATLY APPRECIATED. ALL INFORMATION WILL BE TREATED IN STRICT CONFIDENCE.

Dear Pensioner,

I am conducting a study into the sufficiency or quantum or the level of the amount of pension being paid under the new three tier scheme introduced in Ghana in 2010 following the enactment of ACT 766 in 2008 as compared with the pension payment under the old Social security law 1991 PNDC Law 247.

Under the old 1991 Social Security Law, SSNIT was responsible for payment of the monthly pension and the lump sum component of the pension benefit.

However under the new three tier pension scheme introduced by the National Pensions Act, 2008, Act 766, SSNIT is responsible for payment of only the monthly pension and past credit to those entitled.

The second tier scheme which is privately managed now pays the lump sum component of the pension benefit.

You are kindly required to provide the following information. Which are indicated in three parts A, B and C.

<u>INSTRUCTIONS</u>

Part A – kindly provide the required information by writing or ticking

Part B – tick the response of your choice

Part C – state any relevant comment

PART A

1. Gender : **Male** ………..

   Female …………

2. At what age did you retire ………..
3. In which year did you retire ……..
4. Did you work in public sector or private sector …………………………..

   Public : …………………………..….…

   Private: …………………………….

5. Which pension scheme do you belong to …………………………………
   - **a. Old 1991 SSNIT Scheme ………………………………………**
   - **b. New 2010 three Tier Scheme…………………………………**

6. How long have you contributed to the pension scheme:
   - **a. 15 +years ……………………..…….**
   - **b. 20 +years …………………………**

PART B

7. Indicate your **level of satisfaction** with the monthly pension paid to you by SSNIT under the New Three Tier Pension Scheme as compared with monthly pension under the old 1991 SSNIT Scheme.
   - a. Strongly satisfied
   - b. Satisfied
   - c. Neutral
   - d. Dissatisfied
   - e. Strongly dissatisfied

8. Indicate your **level of satisfaction** with the lump sum benefit under second tier of the new Three Tier Pension Scheme as compared with the 25% lump sum paid by SSNIT under the old 1991 scheme.
   - a. Strongly satisfied
   - b. Satisfied
   - c. Neutral
   - d. Dissatisfied
   - e. Strongly dissatisfied

PART C

9. Please state any relevant comment ………………………………………………………

Appendix 4

2020 Retirees worse off; they earn less under pension reforms

Workers retiring this year have turned out to be victims of the pensions reform that promised better retirement income, only to deliver less than what its predecessor gave to retirees.

A Daily Graphic investigation has revealed that among tiers one and two benefits paid to people who retired this year, those who received their benefits under the National Pensions Act, 2008 (Act 766) got an average of three times lower than their counterparts who retired under PNDC Law 247.

The lower benefits received under Act 766 are widespread, as they have affected workers in all sectors of the economy, including teachers, nurses, media practitioners and staff of the ministries, departments and agencies (MDAs).

The disparities are in spite of similarities in the ranks attained, salaries earned and the number of years one worked and contributed to the scheme prior to retirement.

Figures

A nurse who retired this year as a Deputy Director of Nursing Services (DDSS) in the Upper West Akim District in the Eastern Region (name withheld) and who had worked for 38 years and contributed to the pension scheme for 504 months received GH¢16,019.70, made up of GH¢10,019.70 as past credit (PC) under tier one and GH¢6,000 from tier two investments.

A subordinate of hers who retired last year as a community health nurse/midwife was paid about GH¢62,607.23, after contributing for 508 months to the pension system.

Showbiz Forum on Creative Arts

In another instance, a teacher who retired as Assistant Director Two in the Jaman South District of the Ashanti Region (name withheld) this year was paid GH¢10,644.31 as benefit, after working for 34 years and contributing for 405 months.

Another teacher who retired at the same rank in 2018 was paid about GH¢63,256, after contributing for around 401 months.

In the MDAs space, a member of staff of the Ghana Water Company Limited (GWCL) who retired this year under Act 766 received GH¢42,369.65, comprising GH¢15,369.65 as PC under tier one and GH¢27,000 under tier two, after working for 37 years and contributing for 444 months to the scheme.

However, another member of staff of the same company who retired on a lower rank under Act 247 in 2018 received GH¢61,410.56, after contributing for 405 months.

The disparity in the pension benefits of the two GWCL workers was in spite of the fact that the average of the best three years' salaries for the one under Act 766 was GH¢67,410.56, while the one who retired under Act 247 had an average salary of GH¢46,574.53.

The situation was the same for retired workers in the media, where one retiree under Act 766 received GH¢19,466.88 this year, after working for 33 years and contributing for 398 months, while another who retired on the same rank in 2019 received about GH¢57,523 after contributing for 387 months.

Petition

The affected nurse, who did not want to be identified, told the Daily Graphic in an interview that she was still struggling to recover from the "shock" which came with the news of the amount to be received as PC.

"When they printed my statement for me in the district office of SSNIT, I had a blackout. I sat there for more than 30 minutes without being able to open my mouth," she said.

In a petition to SSNIT on the matter, the retired nurse said it was unfortunate that after "38 years of unblemished service, the amount paid was just a little over GH¢10,000".

The petition said the amount "cannot do much in this economy of ours to secure a peaceful retirement".

In its response, SSNIT indicated the formula used to calculate the pension benefits and concluded that the retired nurse was not cheated but was paid what was due her under Act 766.

Pathetic

The retiree from the GWCL also described the situation as pathetic and wondered why a new law would make retirees worse off.

It feared that the situation would promote corruption in the public service, explaining that the meagre nature of the benefits could motivate people to amass wealth wrongly while in active service.

"It is pathetic and everybody should come on board for us to look at it. Is this what we want for people who have sacrificed and given their all for their country?" he asked.

Top up

When contacted in separate interviews, the National Pensions Regulatory Authority (NPRA), SSNIT and the Trades Union Congress (TUC) concurred that they were aware of the disparity in benefits under Act 766 and Act 247 and were working with the government to address it.

The Secretary General of the TUC, Dr. Anthony Yaw Baah, said the Daily Graphic's findings amplified the position of organised labour that retirees were worse off under Act 766.

He, however, said checks by the TUC showed that SSNIT "did nothing wrong", as it was only complying with what it had been directed to do.

He said the TUC was hopeful that its petition to President Akufo-Addo, requesting the government to top up the benefits of retirees, would receive positive feedback.

"We have said that let us calculate what the person would have got under Act 247, compared to what the person gets under Act 766, and whatever the difference is, the government, which introduced the reforms, must bear the cost," he said.

He said it was not right that a reform that aimed to protect retirement income would lead to lower benefits being paid to retirees.

Transitional challenges

The Director General of SSNIT, Dr John Ofori Tenkorang, said the disparities were due to "transitional challenges" which the government had resolved to address.

He said he was aware of a letter from the government that promised to top up the difference between what a pensioner would have received as benefit under Act 247 and what the person actually received under Act 766.

"I have directed my team to work out those differences for us to submit to the Cabinet," he said.

He, however, noted that the disparities in benefits should not cause people to conclude that retirees would be worse off under Act 766.

"After this transition period, the simulations show that everybody's past credit and tier two will outstrip whatever he or she would have got under Act 247.

"Also, the lifetime pension benefits under Act 766 are better than under Act 247, and that is an undisputed fact," Dr Tenkorang said.

He explained that unlike Act 247 where retirees were supposed to be paid pensions for 12 years after retirement, pensioners would now be paid for 15 years after they had retired.

He added that the accrual years — the minimum number of years to contribute to be eligible for pension benefits — had also been reduced from 20, under Act 247, to 15 under Act 766, making it easier for people to receive pension benefits.

Poor implementation

Started in 2010, Act 766 which regulates a three-tier pension scheme was hailed as the best bet to ensure retirement income security and build patient capital through pension savings.

However, the implementation has been fraught with challenges and delays.

One of the lead advocates and drafters of the reform, who pleaded not to be mentioned, blamed the lower benefits on the “chaotic” nature in which the exercise was carried out.

“To me, the reforms were not allowed to work the way it was anticipated and that is why we are where we are,” he said.

Past credits in context

Following the passage of Act 766, which took effect in 2010, a three-tier pension scheme was introduced.

The first and the second tiers are mandatory, while the third is voluntary.

Under Act 766, SSNIT manages the first tier, under which it pays a monthly pension to beneficiaries.

The second tier is managed by occupational pension schemes, which pay lump sums to beneficiaries, while the third tier, which is voluntary, is a privately managed provident fund or pension scheme.

Prior to Act 766, SSNIT was managing a one-off pension scheme in which it paid monthly pensions, as well as lump sums, to beneficiaries.

With the coming into force of Act 766, the occupational pension schemes are supposed to be managed for lump sum payments.

However, because some contributors had already made contributions to SSNIT for lump sums before Act 776 came into force in 2010, those who went on retirement from 2010 to 2019 got their lump sums from SSNIT, as pertained to the old pension regime, while the rest had their lump sums converted into past credits.

Under Section 94(1)(d) of Act 766, those past credits should be paid to contributors based on a formula determined by a pension implementation committee, which is based on actuarial assessment.

Peter Hayibor,

General Manager ,

Social Security and National Insurance Trust

Pension House.

Accra -Ghana

Appendix 5

Pension Reforms Analysis

Pension Reforms Analysis

This analysis evaluates two pension reforms: New and Old Scheme.

Load data

```
## New names:
## * `` -> ...1
## * `` -> ...2
## * `` -> ...3
## * `` -> ...4
## * `` -> ...5
## New names:
## * `` -> ...1
## * `` -> ...2
## * `` -> ...3
## * `` -> ...4
## * `` -> ...5
```

Descriptive Statistics

Monthly Pension

```
## # A tibble: 2 x 10
##   PensionReform variable     n  mean    sd   min    q1 median    q3
max
##   <chr>         <chr>    <dbl> <dbl> <dbl> <dbl> <dbl>  <dbl> <dbl>
<dbl>
## 1 New Scheme    mn_pen     200  655.  805.   276   300   327   796.
8689
## 2 Old Scheme    mn_pen     200  771.  450.   276   432   714.  958.
3959
```

```
## # A tibble: 4 x 11
##   gender PensionReform variable     n  mean    sd   min    q1 median
q3   max
##   <chr>  <chr>         <chr>    <dbl> <dbl> <dbl> <dbl> <dbl>  <dbl>
<dbl> <dbl>
## 1 F      New Scheme    mn_pen      57  492.  402.   276  300     300
448   2154
## 2 M      New Scheme    mn_pen     143  720.  911.   276  300     374
864.  8689
## 3 F      Old Scheme    mn_pen      85  705.  328.   276  376     709
911   1475
## 4 M      Old Scheme    mn_pen     115  820.  518.   276  454.    722
1041   3959
```

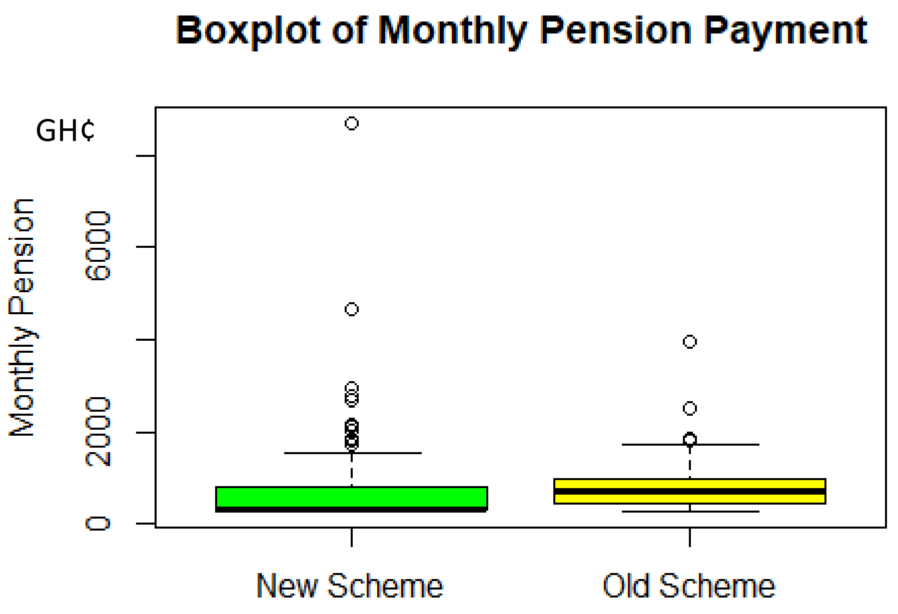
Lump Sum

```
## # A tibble: 2 x 10
##   PensionReform variable     n   mean     sd   min     q1 median     q3
max
##   <chr>         <chr>    <dbl>  <dbl>  <dbl> <dbl>  <dbl>  <dbl>  <dbl>
<dbl>
## 1 New Scheme    lump_sum   200 10089. 13580.   442  2689.  5660. 12912.
136278
## 2 Old Scheme    lump_sum   200 21042. 13166.   681 12476. 20042. 26897.
110438
```

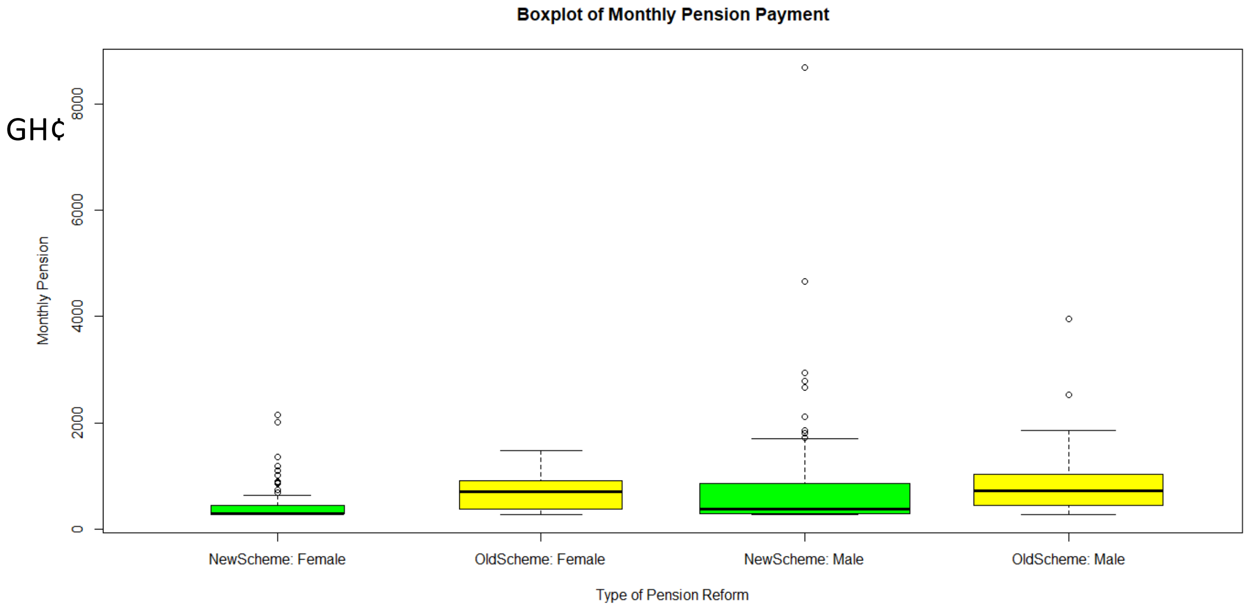
```
## # A tibble: 4 x 11
##   gender PensionReform variable     n   mean     sd   min     q1 median
q3
##   <chr>  <chr>         <chr>    <dbl>  <dbl>  <dbl> <dbl>  <dbl>  <dbl>
<dbl>
## 1 F      New Scheme    lump_sum    57  7598.  8970.   442  2243    4507
9528
## 2 M      New Scheme    lump_sum   143 11081. 14941.  1039  2990.   6391
13709
## 3 F      Old Scheme    lump_sum    85 19084. 10096.  1300 11634   19768
25397
## 4 M      Old Scheme    lump_sum   115 22488. 14917.   681 12956   20386
29034
## # ... with 1 more variable: max <dbl>
```

Plotting

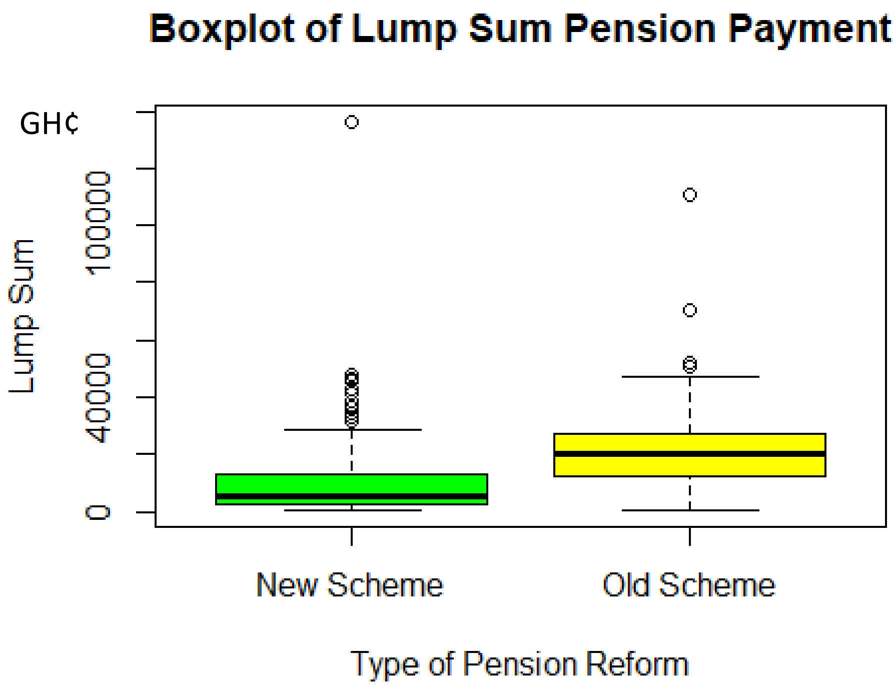
Monthly Pension

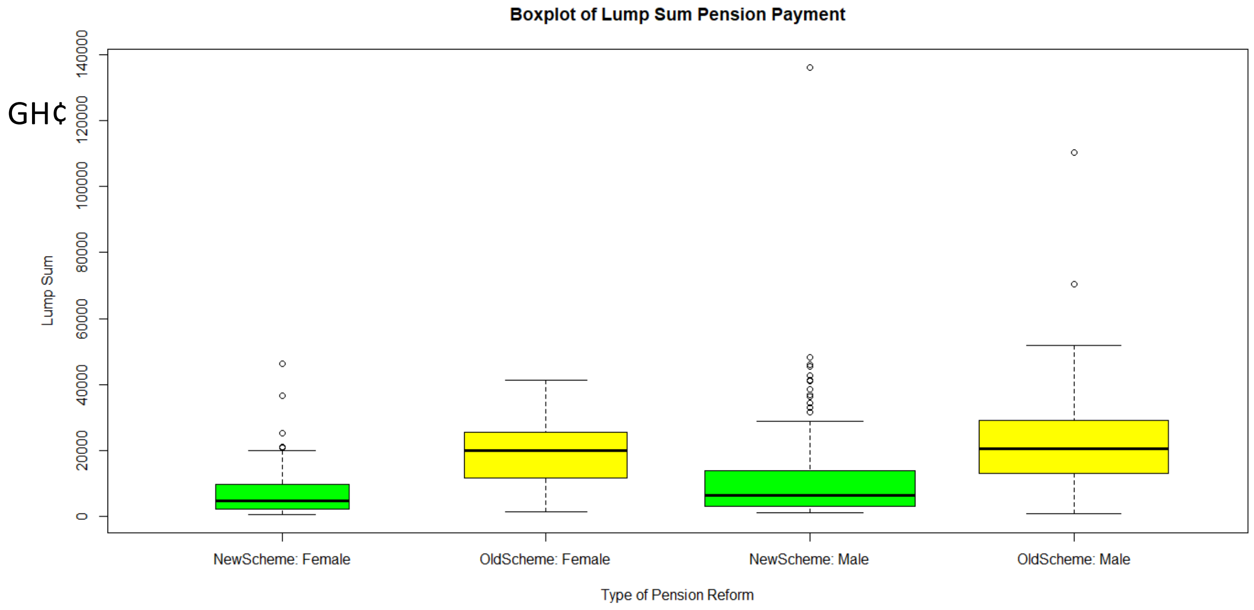


GH¢ - Ghana Cedis (Currency)


Boxplot of Monthly Pension Payment
GH¢
Monthly Pension
0
2000
4000
6000
8000
NewScheme: Female
OldScheme: Female
NewScheme: Male
OldScheme: Male
Type of Pension Reform

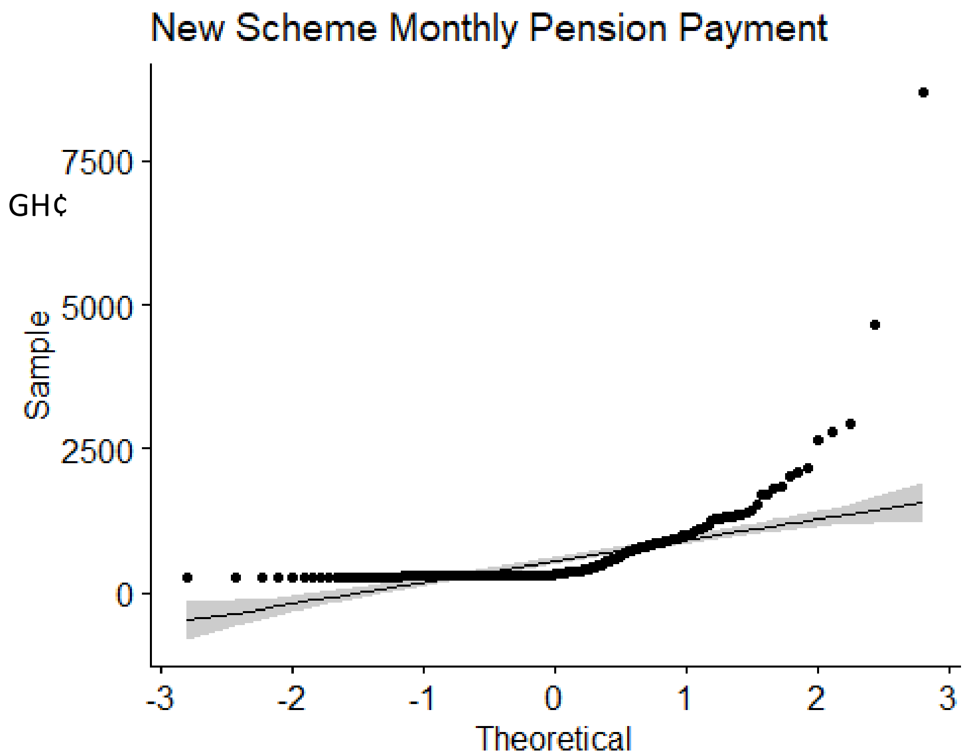
Lump Sum

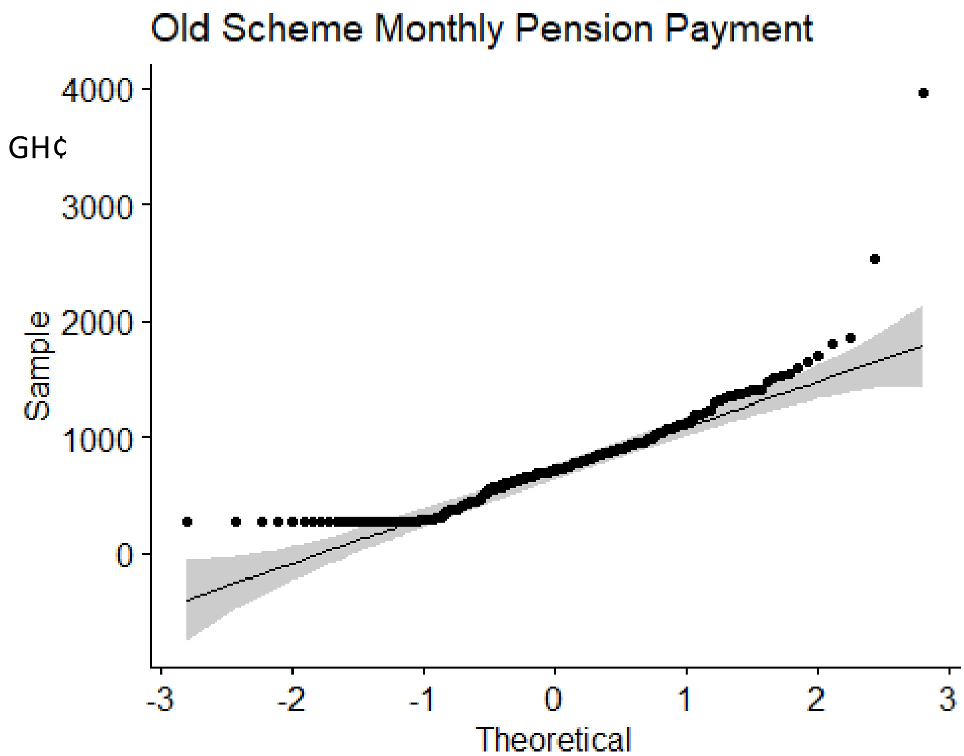

Boxplot of Lump Sum Pension Payment
GH¢
Lump Sum
0
40000
100000
New Scheme
Old Scheme
Type of Pension Reform

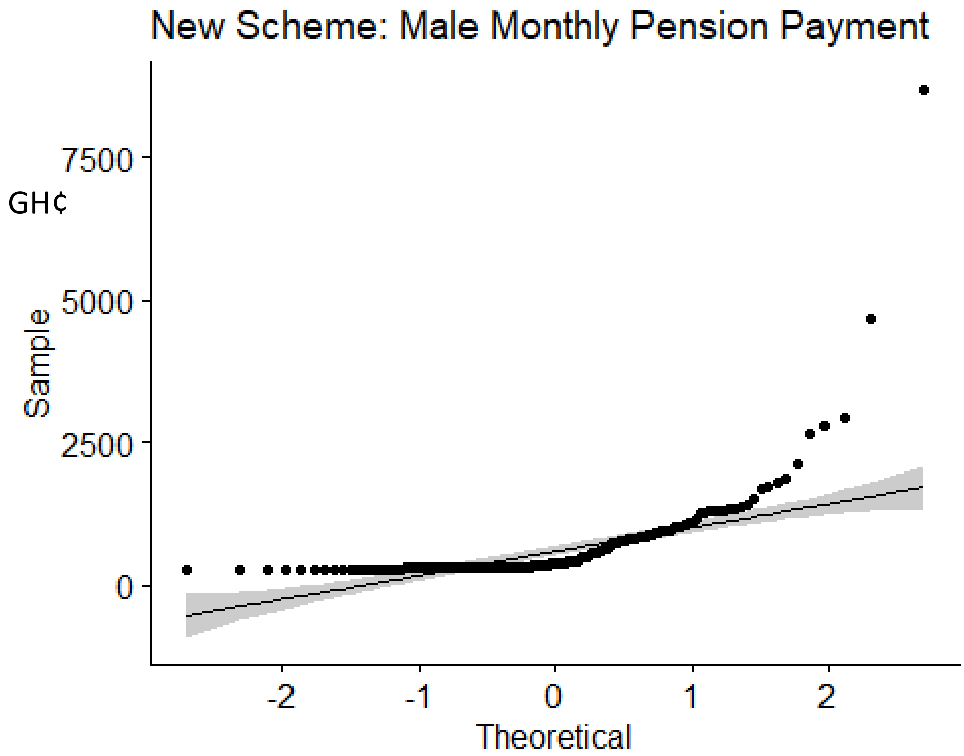

Boxplot of Lump Sum Pension Payment
GH¢
Lump Sum
0
20000
40000
60000
80000
100000
120000
140000
NewScheme: Female
OldScheme: Female
NewScheme: Male
OldScheme: Male
Type of Pension Reform

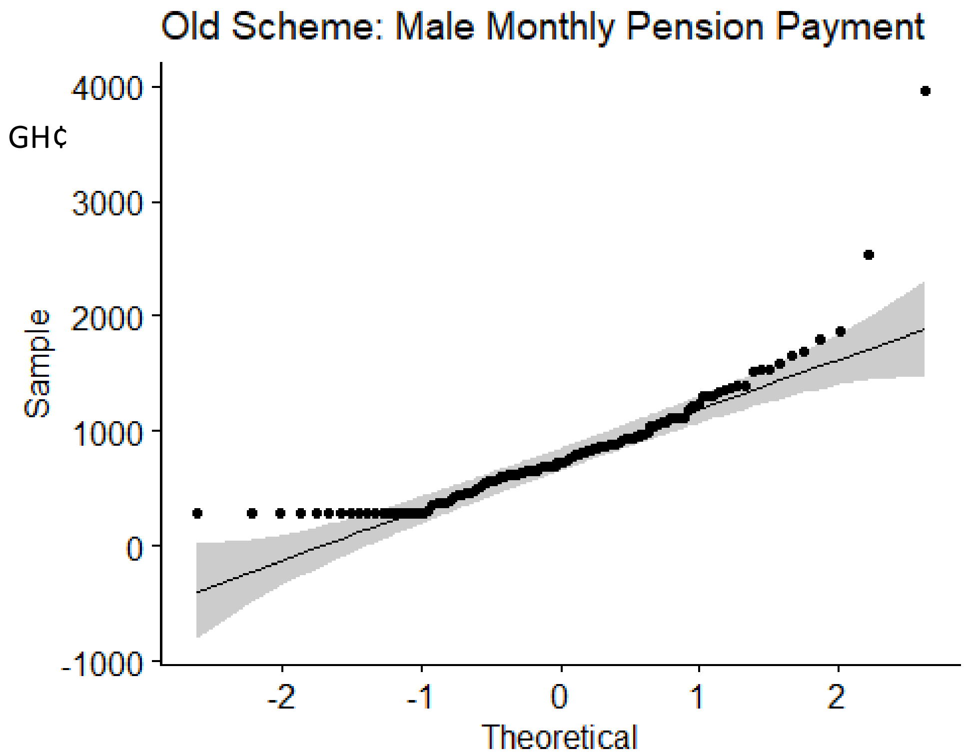
Normality Test: QQplot

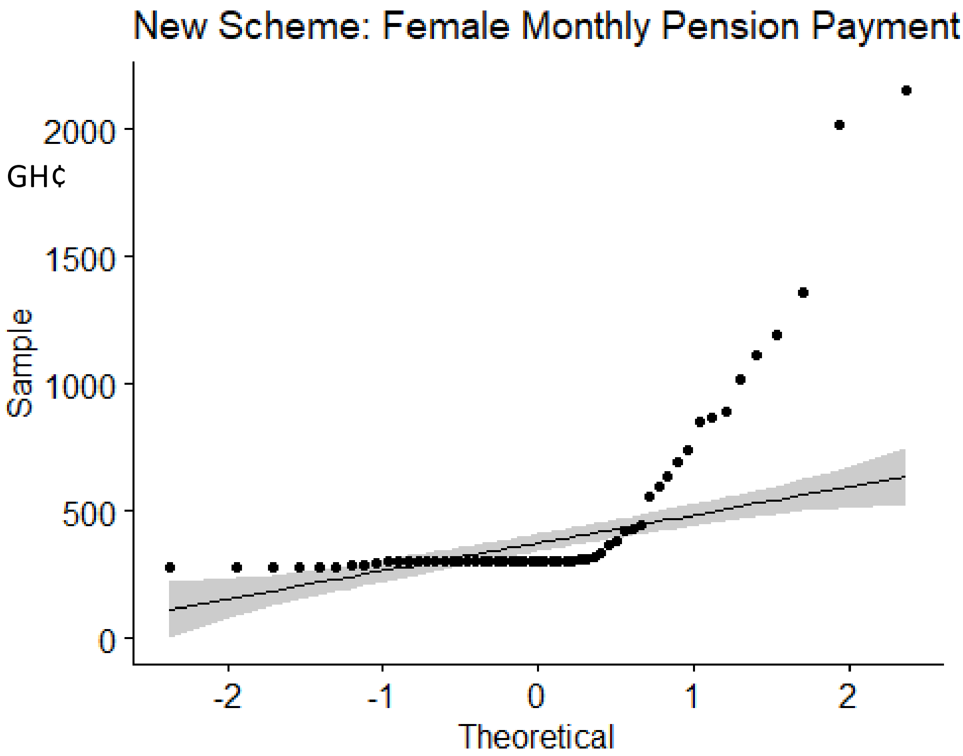
Monthly Pension Payment

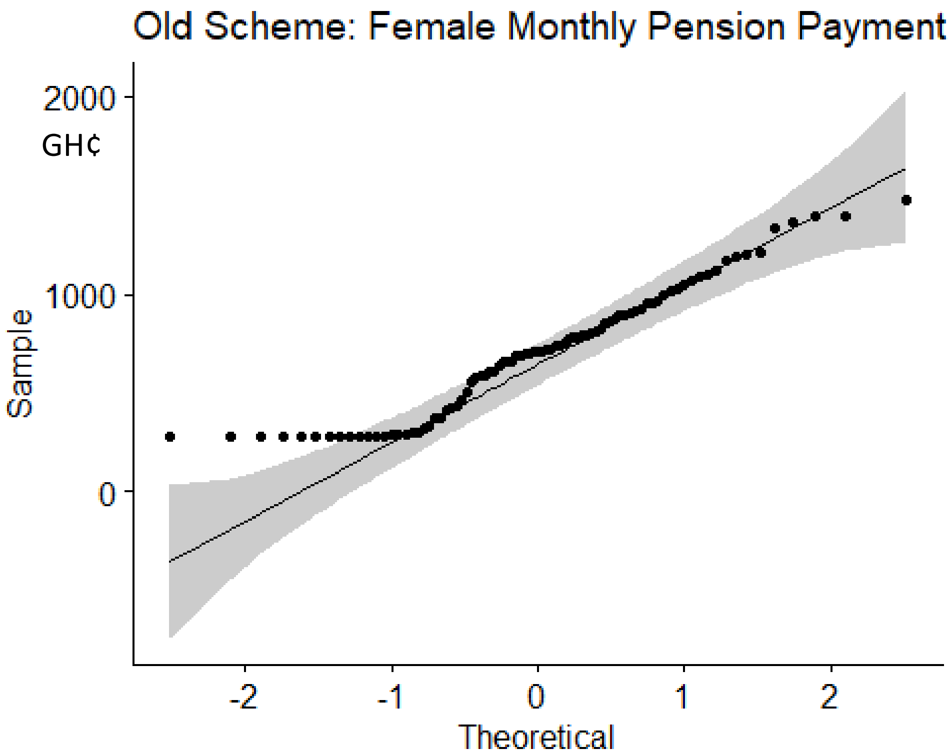




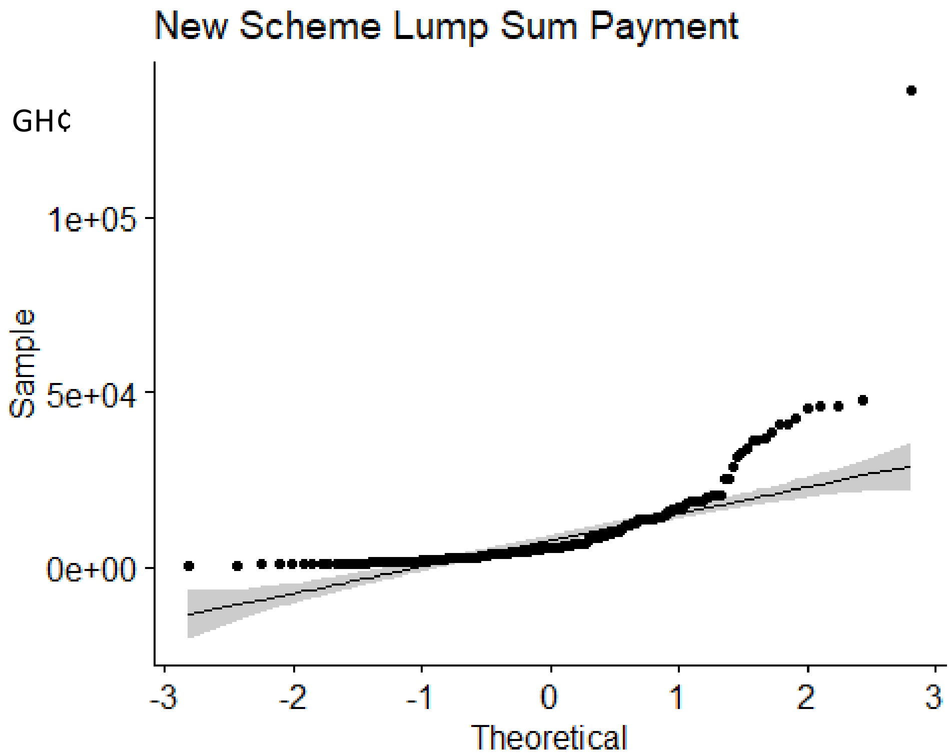

New Scheme: Male Monthly Pension Payment
GH¢
Sample
7500
5000
2500
0
-2
-1
0
1
2
Theoretical

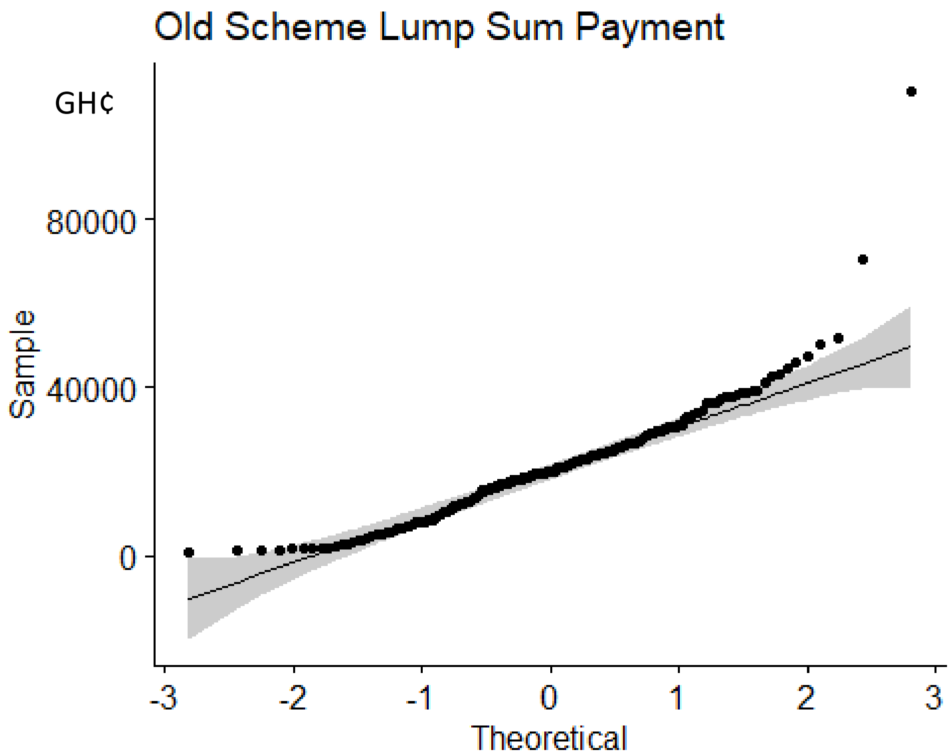

Old Scheme: Male Monthly Pension Payment
GH¢
Sample
4000
3000
2000
1000
0
-1000
-2
-1
0
1
2
Theoretical

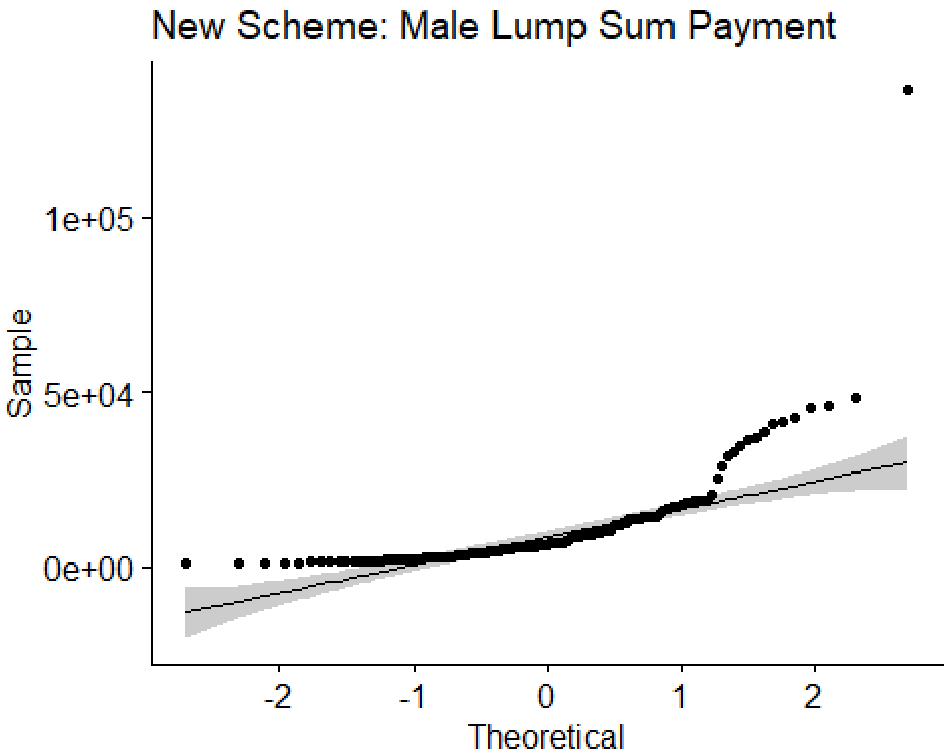

New Scheme: Female Monthly Pension Payment
GH¢
Sample
2000
1500
1000
500
0
-2
-1
0
1
2
Theoretical

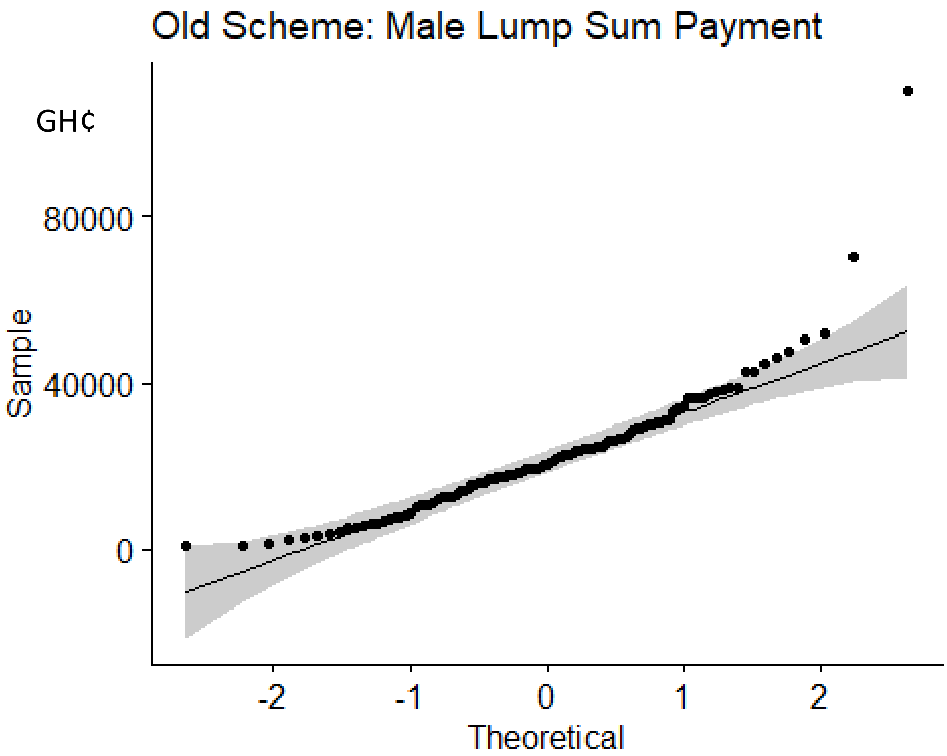

Old Scheme: Female Monthly Pension Payment
GH¢
Sample
2000
1000
0
-2
-1
0
1
2
Theoretical

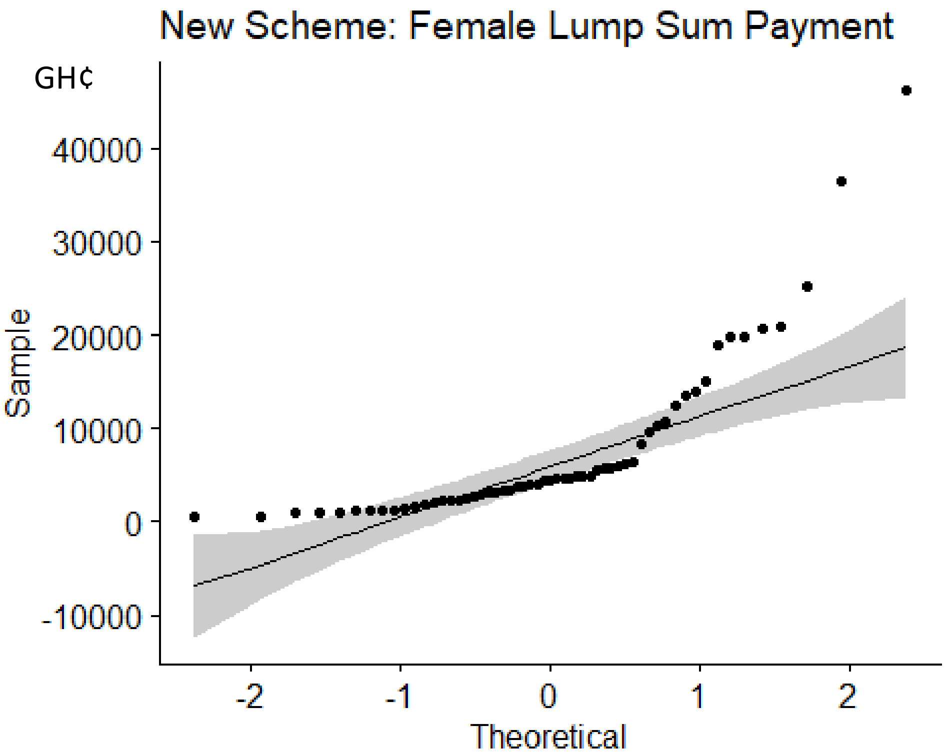
Lump Sum Payment

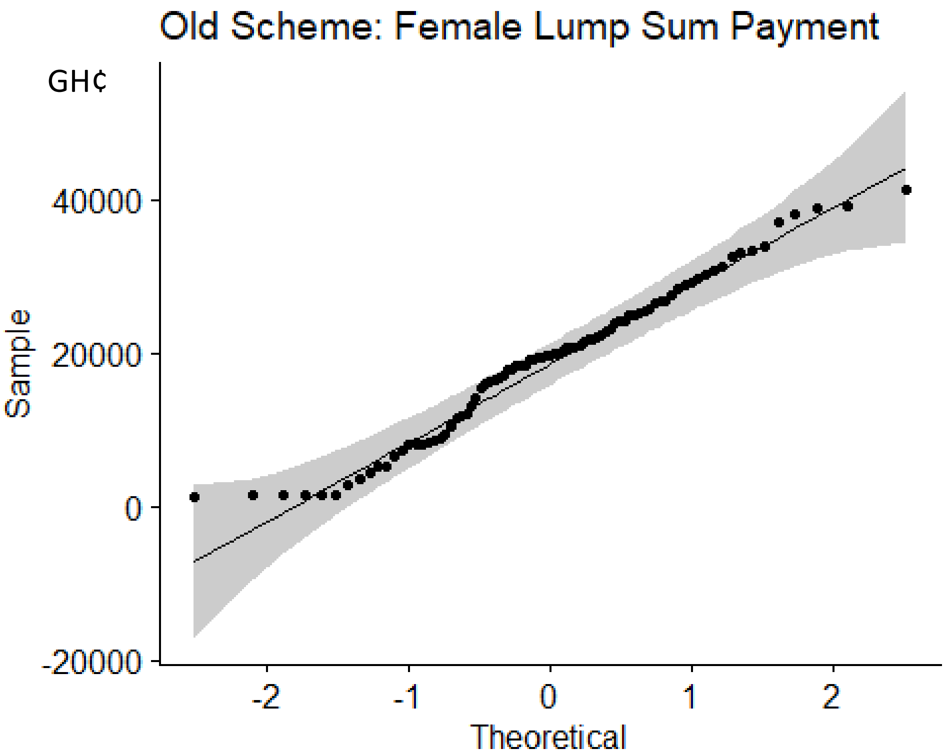





New Scheme: Male Lump Sum Payment
1e+05
5e+04
0e+00
Sample
-2
-1
0
1
2
Theoretical


Old Scheme: Male Lump Sum Payment
GH¢
80000
40000
0
Sample
-2
-1
0
1
2
Theoretical


New Scheme: Female Lump Sum Payment
GH¢
Sample
40000
30000
20000
10000
0
-10000
-2
-1
0
1
2
Theoretical


Old Scheme: Female Lump Sum Payment
GH¢
Sample
40000
20000
0
-20000
-2
-1
0
1
2
Theoretical

Formal normality test: Shapiro-Wilk

The hypothesis

Ho: Data follows a normal distribution

```
Ha: Data does not follow a normal distribution
```

Interpretation: A p-value < 0.05 means data is not normally distributed

Monthly Pension Payment

Monthly pension payment under the New Scheme

```
## # A tibble: 1 x 4
##   variable      statistic  p.value p.value.signify
##   <chr>             <dbl>    <dbl> <chr>
## 1 New_Scheme_mp     0.464 3.34e-24 ****
```

Monthly pension payment under the Old Scheme

```
## # A tibble: 1 x 4
##   variable      statistic  p.value p.value.signify
##   <chr>             <dbl>    <dbl> <chr>
## 1 Old_Scheme_mp     0.834 7.77e-14 ****
```

Monthly pension payment under the New Scheme for Male

```
## # A tibble: 1 x 4
##   variable       statistic  p.value p.value.signify
##   <chr>              <dbl>    <dbl> <chr>
## 1 New_Scheme_mpM     0.476 1.77e-20 ****
```

Monthly pension payment under the Old Scheme for Male

```
## # A tibble: 1 x 4
##   variable       statistic  p.value p.value.signify
##   <chr>              <dbl>    <dbl> <chr>
## 1 Old_Scheme_mpM     0.813 9.12e-11 ****
```

Monthly pension payment under the New Scheme for female

```
## # A tibble: 1 x 4
##   variable       statistic  p.value p.value.signify
##   <chr>              <dbl>    <dbl> <chr>
## 1 New_Scheme_mpF     0.579 1.58e-11 ****
```

Monthly pension payment under the Old Scheme for female

```
## # A tibble: 1 x 4
##   variable       statistic  p.value p.value.signify
##   <chr>              <dbl>    <dbl> <chr>
## 1 Old_Scheme_mpF     0.940 0.000641 ***
```

Lump Sum Payment

Lump Sum payment under the New Scheme

```
## # A tibble: 1 x 4
##   variable      statistic  p.value p.value.signify
```

```
##   <chr>              <dbl>    <dbl> <chr>
## 1 New_Scheme_ls      0.586 1.17e-21 ****
```

Lump Sum payment under the Old Scheme

```
## # A tibble: 1 x 4
##   variable      statistic  p.value p.value.signify
##   <chr>             <dbl>    <dbl> <chr>
## 1 Old_Scheme_ls     0.884 2.80e-11 ****
```

Lump Sum payment under the New Scheme for Male

```
## # A tibble: 1 x 4
##   variable       statistic  p.value p.value.signify
##   <chr>              <dbl>    <dbl> <chr>
## 1 New_Scheme_lsM     0.575 1.27e-18 ****
```

Lump Sum payment under the Old Scheme for Male

```
## # A tibble: 1 x 4
##   variable       statistic       p.value p.value.signify
##   <chr>              <dbl>         <dbl> <chr>
## 1 Old_Scheme_lsM     0.858 0.00000000426 ****
```

Lump Sum payment under the New Scheme for female

```
## # A tibble: 1 x 4
##   variable       statistic       p.value p.value.signif
##   <chr>              <dbl>         <dbl> <chr>
## 1 New_Scheme_lsF     0.713 0.00000000303 ****
```

Lump Sum payment under the Old Scheme for female

```
## # A tibble: 1 x 4
##   variable       statistic p.value p.value.signify
##   <chr>              <dbl>   <dbl> <chr>
## 1 Old_Scheme_lsF     0.974  0.0834 ns
```

T- test

Parametric Test

The hypothesis

Ho: Mean of group 1 is equal to that of group 2

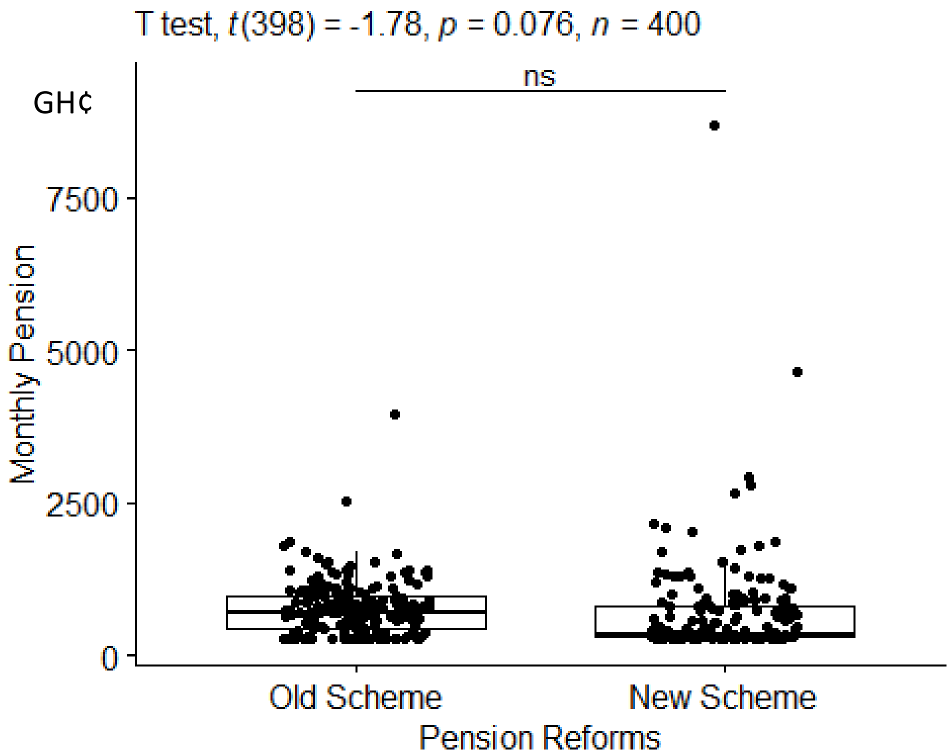
```
Ha: Mean of group 1 is not equal to that of group 2
```

Interpretation: A p-value < 0.05 implies that the two groups have different means values

Monthly Pension Payment

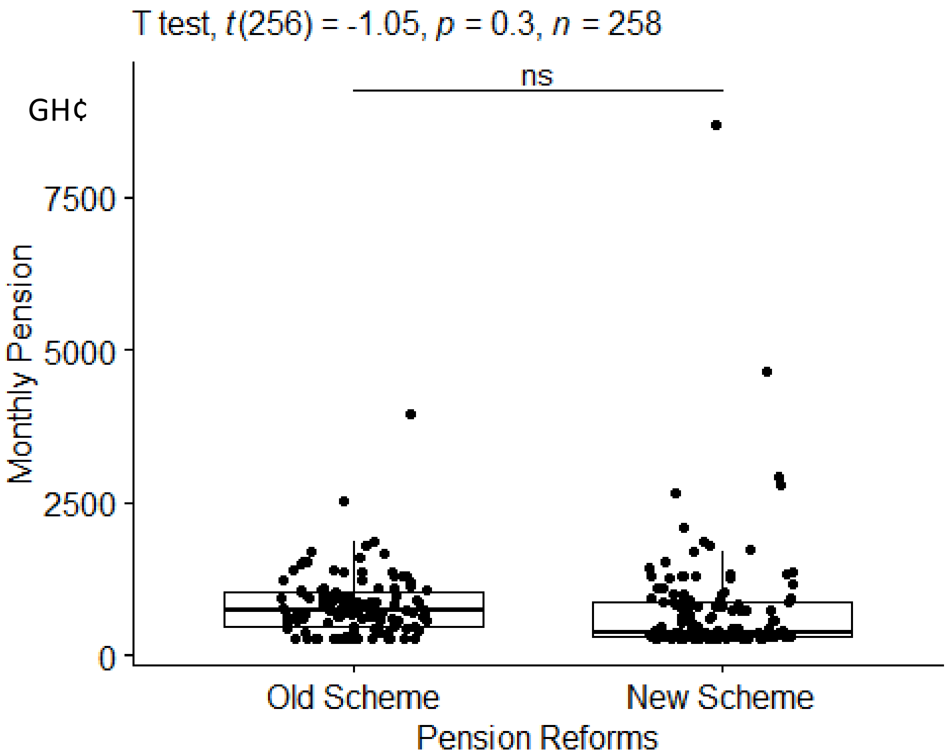
Monthly pension payment between the New and the Old Scheme

```
## # A tibble: 1 x 9
##   .y.     group1     group2        n1    n2 statistic    df      p
p.signif
## * <chr>   <chr>      <chr>      <int> <int>     <dbl> <dbl>  <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme   200   200     -1.78   398 0.0764 ns
```



Monthly pension payment between the New and the Old Scheme for male

```
## # A tibble: 1 x 9
##   .y.    group1     group2        n1    n2 statistic    df     p 
p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl> <dbl> <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme   143   115     -1.05   256 0.297 ns
```



Monthly pension payment between the New and the Old Scheme for female

```
## # A tibble: 1 x 9
##   .y.    group1     group2        n1    n2 statistic    df         p
p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl> <dbl>     <dbl>
<chr>
## 1 mn_pen New Scheme Old Scheme    57    85     -3.46   140 0.000711 ***
```

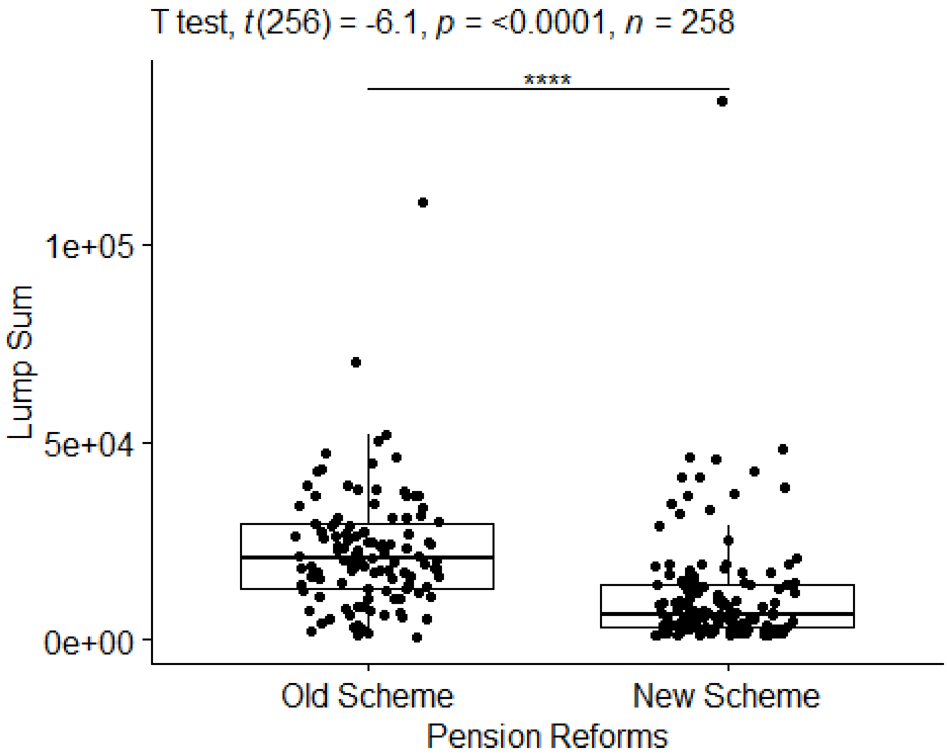
Lump Sum Payment

Lump Sum payment between the New and the Old Scheme

```
## # A tibble: 1 x 9
##   .y.      group1     group2        n1    n2 statistic    df         p
p.signif
## * <chr>    <chr>      <chr>      <int> <int>     <dbl> <dbl>     <dbl>
<chr>
## 1 lump_sum New Scheme Old Scheme   200   200     -8.19   398 3.61e-15
****
```

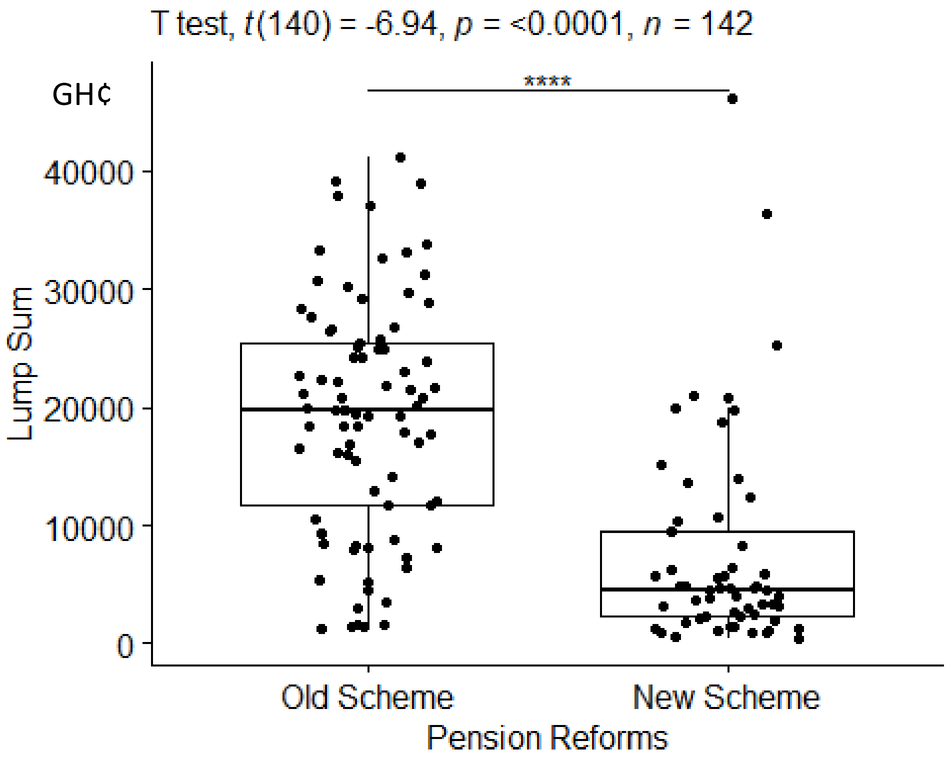
Lump Sum payment between the New and the Old Scheme for male

```
## # A tibble: 1 x 9
##   .y.      group1     group2        n1    n2 statistic    df           p
p.signif
## * <chr>    <chr>      <chr>      <int> <int>     <dbl> <dbl>       <dbl>
<chr>
## 1 lump_sum New Scheme Old Scheme~   143   115     -6.10   256
3.9e-9 ****
```



Lump Sum payment between the New and the Old Scheme for female

```
## # A tibble: 1 x 9
##   .y.      group1     group2        n1    n2 statistic    df         p
p.signif
## * <chr>    <chr>      <chr>      <int> <int>     <dbl> <dbl>     <dbl>
<chr>
## 1 lump_sum New Scheme Old Scheme    57    85     -6.94   140 1.31e-10
****
```



Non-Parametric Test

The hypothesis

Ho: Median of group 1 is equal to that of group 2

```
Ha: Median of group 1 is not equal to that of group 2
```

Interpretation: A p-value < 0.05 implies that the two groups have different median values

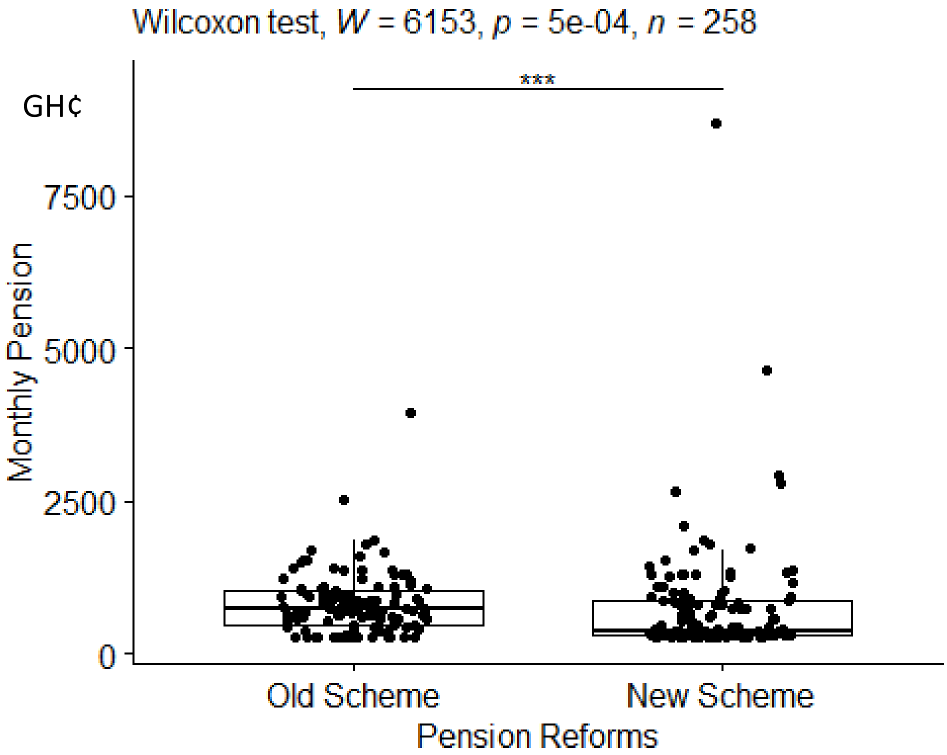
Monthly Pension Payment

Monthly pension payment between the New and the Old Scheme

```
## # A tibble: 1 x 8
##   .y.    group1     group2        n1    n2 statistic          p
p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl>      <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme   200   200     14540 0.00000217 ****
```

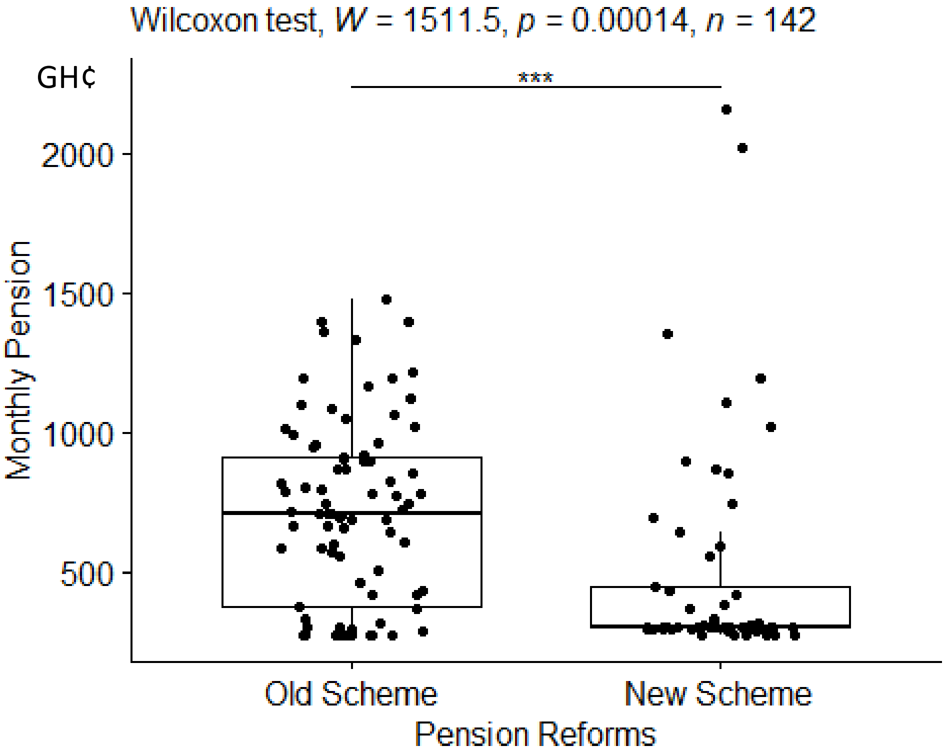
Monthly pension payment between the New and the Old Scheme for male

```
## # A tibble: 1 x 8
##   .y.    group1     group2        n1    n2 statistic        p p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl>    <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme   143   115      6153 0.000498 ***
```



Monthly pension payment between the New and the Old Scheme for female

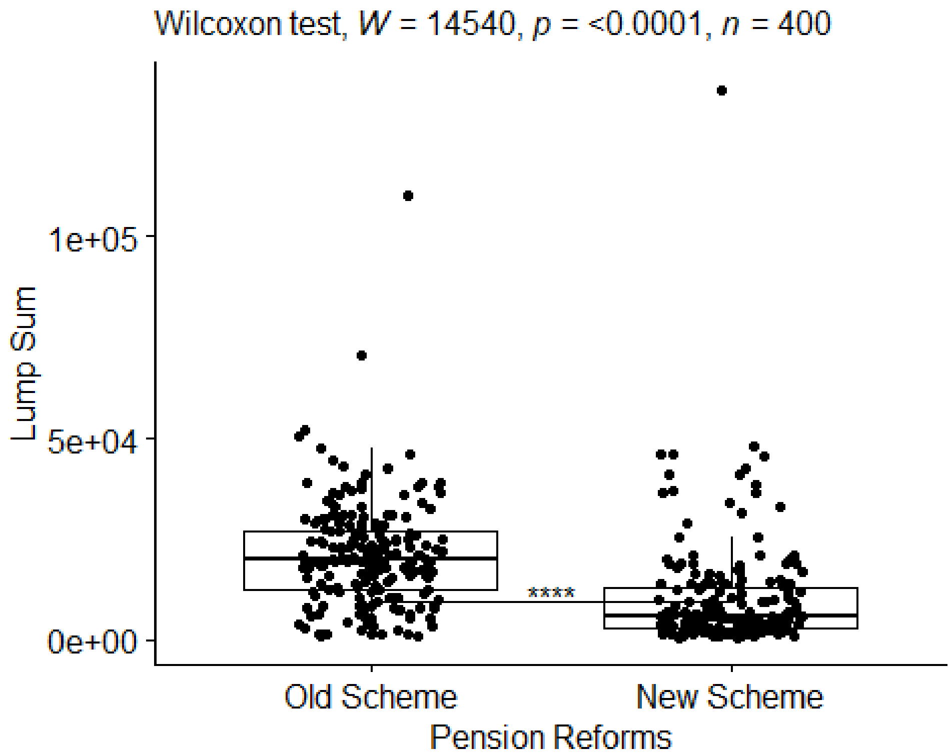
```
## # A tibble: 1 x 8
##   .y.    group1     group2        n1    n2 statistic        p p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl>    <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme    57    85     1512. 0.000142 ***
```



Lump Sum Payment

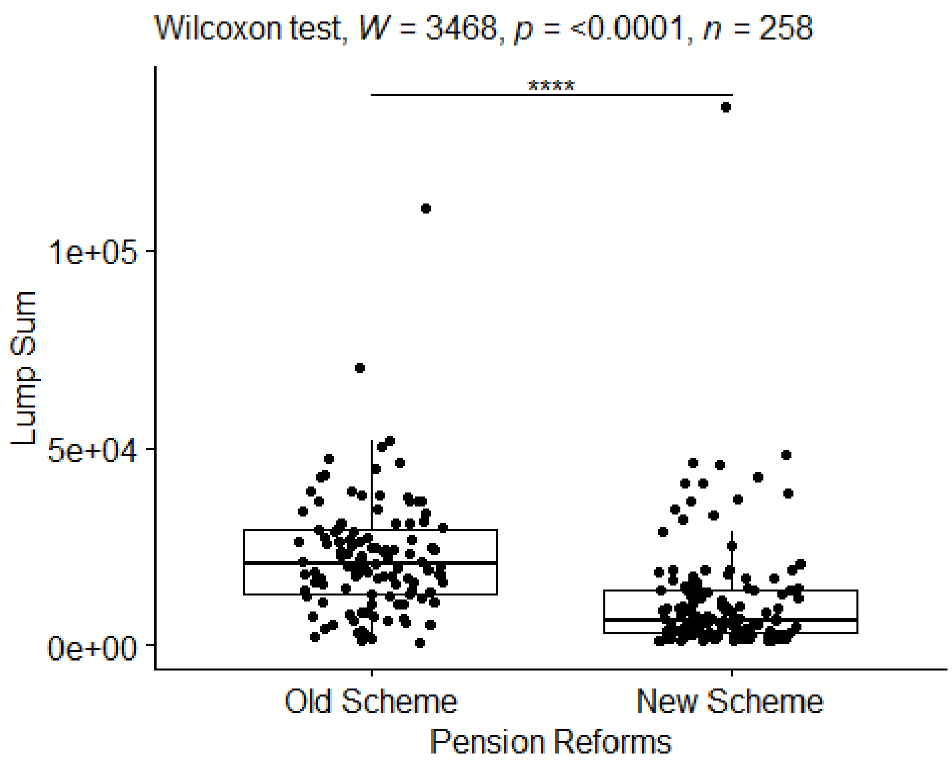
Lump Sum payment between the New and the Old Scheme

```
## # A tibble: 1 x 8
##   .y.    group1     group2        n1    n2 statistic          p
p.signif
## * <chr>  <chr>      <chr>      <int> <int>     <dbl>      <dbl> <chr>
## 1 mn_pen New Scheme Old Scheme   200   200     14540 0.00000217 ****
```



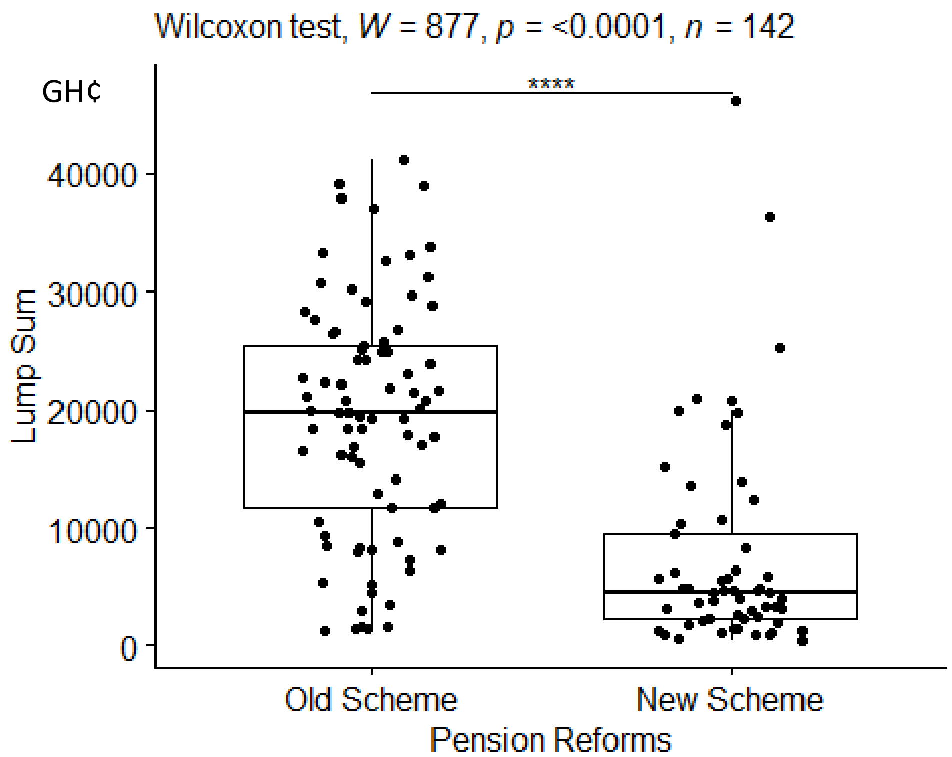
Monthly pension payment between the New and the Old Scheme for male

```
## # A tibble: 1 x 8
##   .y.      group1     group2        n1    n2 statistic        p
p.signif
## * <chr>    <chr>      <chr>      <int> <int>     <dbl>    <dbl> <chr>
## 1 lump_sum New Scheme Old Scheme   143   115      3468 1.47e-15 ****
```



Monthly pension payment between the New and the Old Scheme for female

```
## # A tibble: 1 x 8
##   .y.      group1     group2        n1    n2 statistic         p
p.signif
## * <chr>    <chr>      <chr>      <int> <int>     <dbl>     <dbl> <chr>
## 1 lump_sum New Scheme Old Scheme    57    85       877 1.28e-10 ****
```



Appendix 6

THE ESSENTIAL THRUST OF SSNIT PENSION AND CAP 30

Essential Thrust	**Social Security & National Insurance Trust SSNI**	**National Pension Scheme Or CAP**
Legislation	Social security Law 1991 (PN 247) with precursors as the Provident fund under the Social Security Act, 1965; and 1972 Social Security Decree, (NRCD 127):	1946 Pensions Ordinance, Chapter 30 of Ordinance Non. 1950; Teachers Pension Ordinance, 1955; Pension and Social Security (Amendment) Decree, 1975 SMCD 8.
Administration	Management Board comprising representatives of Government Bureaucracy, Employers and Unions.	Management responsibility under the controller and Accountant General's of the Mini of Finance.
Coverage	Private and self- employed Civil Service and public sector employees from January I, 1972.	Civil Service, Public Sector and Civilian Employees of the Armed Forces who were pensionable and non-pensionable officers prior to January I, 1972 and who opted to stay on cap 30; Armed Forces, Police Service, Prisons Service and some Staff of the Judicial Service.
Contribution	Employee 5% Employer 12.5% Total 17.5%	Non — contributory for Armed Forces, Police Service, Prisons Service and Judicial Service.
Normal Retirement Age	Age 60	Age 60, Compulsory
Early retirement Age Minimum Eligibility Conditions Final Pension salary (FPS)	Age 55 240 months of portable contributions Average annual base salary for the best 3 years in employees working life	Age 45 for Voluntary, but earlier retirement permissible under "special circumstances". 10 years continuous contributions, except under " special circumstances" Final pensionable Emoluments: final gross annual salary earned by officer at date of retirement used in computing pensions. For Reduced Pensions, i.e. on drawing a gratuity, FPS equals 500/0 of minimum salary in first point in the officer's salary range effective June 1995 .

THE ESSENTIAL THRUSTS OF SSNIT PENSION AND CAP 30 (CONTINUED)

Criteria	Social Security & National Insurance Trust (SSNIT)	National Pension Scheme Or CAP 30
Normal Old Age Pension	Actuarial Rate: Earned Pensionable Right is defined As 50% of PPS after 240 months contribution, plus 0.125% per Additional month If the employee contributed less than 240 months, a lump sum benefit equal to total contributions made to date adjusted to prevailing Government Treasury Bill rate, Optional commutation or gratuity is at 25% of the employee's 12 years pension as a lump sum. Maximum Actuarial Rate is 80%. - Minimum Pension varios according to prevailing minimum wage and inflation.	Established officers with Pension - Full pension; 1/480" FPS times length of service in months: Reduced Pension; ¾ % of Full Pension Gratuity: 1/4 of Full Pension times 20 as lump sum payment. Non-established Officers, i.e. General Orders 400 to 410: Full Pension; 1/800th FPS times length of service in months: Reduced pension; % of Full Pension: Pension; Fixed Annual Allowance (Adjusted Annually): Gratuity; Ex-Gratia Awards. Maximum Actuarial Rate is 100% FPS i.e. 40 years' continuous service. Minimum Pension is 50% of salary range at rate of retirement
Early Retirement Age	Reduced pension at age 55 is 60%, whilst age 56 is 67.5%, age 57 is 75%, age 58 is 82.5% and age 59 is 90%	There is no actuarial reduction.
Survivors' Benefits Death Before Retirement	If member contributed for at least 240 months then a lump sum equal to present value of employee's pensions payable to age 72 is paid to survivor If contributions are less than 240 then lump sum equal to 50% of the employee's pensions payable to age 72. Applicable interest rate for computation is a 10% discount rate per annum	Death gratuity; Lump sum payment of 20 times 1/3 of officers full pension. Widow's Pension; pension of 25% of FPS. Each Child (maximum) with mother, Pension of A widow's pension to age 21. Each child (maximum) without mother, Pension of 12 of widow's pension per child to age 21.

THE ESSENTIAL THRUST OF SSNIT PENSION AND CAP 30 (CONTINUED)

Survivor's Benefit Death After Retirement	Lump sum equal to the present value of employee's unexpired pension payable until age 72. No benefits if pensioner dies after 72.	Lump sum equal to balance of unpaid pensions, until 80 years. Balance is paid to the employees estate.
Disabilities Pension	Entitled to Earned pension if The minimum contribution is 240 months. Entitled to 50% of Earned pension if contribution is less than 240 months	Treated as early retirement pension without limit of 10 years service under special circumstance".
Adjustment to pension in payment	Indexed annually on the 1st of January.	Indexed annually to 100% of adjustment to Civil Service salary scales.
Marriage Benefits	None	1/8 of monthly FPS per month of continuous service, payable to wives in pensionable posts who resign or retire, having served a minimum of 60 months or 5 years.

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