UNIVERSITY OF EDUCATION, WINNEBA

INCOME AT RETIREMENT AND CONSUMPTION OF PENSIONERS IN GHANA: THE CASE OF AJUMAKO-ENYAN-ESSIAM DISTRICT

ANDREWS OKWAE

MASTER OF PHILOSOPHY

2019

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8170180006

A thesis presented to the Department of Economics Education, Faculty of Social Sciences Education, submitted to the School of Graduate Studies in partial fulfilment

of the requirements for the award of the degree of

Master of Philosophy

(Economics)

in the University of Education, Winneba

JULY, 2019

DECLARATION

STUDENT'S DECLARATION

I, ANDREWS OKWAE, declare that this thesis, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE: ……..

DATE: ……..

SUPERVISORS' DECLARATION

We hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of thesis as laid down by the University of Education, Winneba.

Dr. Anselm Komla Abotsi (Principal Supervisor)

Signature: ……..

Date: ……..

Dr. Theophilus E. Richardson (Co-Supervisor)

Signature: ……..

Date: ……..

DEDICATION

I dedicate this work to my children; Angela, Fred, Eugene and Eugenia.

ACKNOWLEDGEMENTS

Special thanks to my supervisors, Dr. Anselm K. Abotsi and Dr. Theophilus E. Richardson for thoroughly guiding my work to a successful completion. Another heartfelt gratitude goes to the immediate outgone HOD (Dr. Emmanuel Carsamer) and the current HOD (Dr. Ishmael Y. Dadson) of the Department of Economics Education for their encouragement in the course of my study and the conduct of this research. Not forgetting other lecturers of the department notably, Dr. Dake, Dr. Aglobitse, Mr. Abbam among others, I say thank you for the pieces of advice. I again appreciate the patience and cooperation of the leadership and members of the Ajumako-Enyan-Essiam SSNIT Pensioners' Association who responded to the questionnaire for the study. To my family and M.Phil mates whom I enjoyed warmth relationship throughout the period of my study, I salute you all for the cordial relationship and support.

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ABBREVIATIONS

AEE	Ajumako-Enyan-Essiam
CMB	Cocoa Marketing Board
COICOP	Classification of Individual Consumption According to Purpose
CPI	Consumer Price Index
CRIG	Cocoa Research Institute of Ghana
CSIR	Centre for Scientific and Industrial Research
GDP	Gross Domestic Product
GSS	Ghana Statistical Service
GUSSS	Ghana Universities Staff Superannuation Scheme
ILO	International Labour Organisation
NPRA	National Pensions Regulatory Authority
OLS	Ordinary Least Squares
OSY	Other Source of Income
PNDC	Provisional National Defence Council
SIC	State Insurance Corporation
SSNIT	Social Security and National Insurance Trust
VIF	Variance Inflation Factor

ABSTRACT

The study investigated the extent to which SSNIT pensioners in Ajumako-Enyan-Essiam (AEE) district smooth and sustain consumption expenditure on nondurable goods and further analysed how the main determinants of consumption influence expenditure on nondurable goods at retirement. A total of 164 SSNIT pensioners who were household heads and aged 58 to 64 years were used for the study. Data for the study which was collected in March 2019 was mainly primary data covering the period 2015 to 2019. The data set comprised total wealth from SSNIT, monthly consumption expenditures and extra income earned monthly. The difference in the means of consumption before and at retirement were used to compute change in consumption expenditure while the ratios of consumption to income were used for the expenditure sustainability analysis. Pension wealth, other source of income, age, number of dependents, sex, accommodation status and marital status were used as independent variables to predict consumption expenditure as the dependent variable using the White Robust Standard Errors of OLS. The results showed a 22.6% drop in consumption expenditure at retirement and 62.8% of pensioners being able to sustain consumption expenditure. Moreover, the regression results showed that with the exception of gender and accommodation status, pension wealth, other source of income, age, number of dependents and marital status emerged as determinants of consumption that significantly influence expenditure on nondurable goods. Conclusion drawn rendered the prediction of the life cycle hypothesis invalid in AEE district since consumption was found not to have been smoothed at retirement. The study recommends to the Government of Ghana to collaborate with SSNIT to concurrently adjust the minimum pension with minimum wage reviews in order to enable pensioners adjust themselves to current cost of living to be able to alleviate post-retirement poverty in the study district and Ghana in general. Employees are also advised to plan early and save enough resources in their working life before they retire.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Humans, and for that matter, pensioners can never escape from consumption activities. Consumption, which involves expenditure made on the purchases of goods and services by households, remains a very important share of the gross domestic product of any economy in the world. It constitutes an integral part of day-to-day life of individuals and households (Rode, 2012). Consumption accounts for 75% to 86% of disposable income of most countries (Battistin, Brugiavini, Rettore & Weber, 2009; Corrales & Mejia, 2009; Olafsson & Pagel, 2017).

The performance of consumption as a macro variable is closely associated with savings, investment, production and employment. Hence, when things go bad with consumption, the economy begins to show signs of stagnation (Corrales & Mejia, 2009). From the World Bank collection of development indicators on Ghana, the final consumption expenditure as a percentage of GDP in 2016 was 84.3% while final consumption expenditure by households constituted 66.6% of GDP (Final consumption expenditure of Ghana, 2016).

There have been a number of thoughts presented by earlier authorities about consumption behaviour of rational agents. One of the extensively studied theories of consumption is the life cycle hypothesis which was introduced by Modigliani and Brumberg (1954). The life cycle hypothesis is regarded as the centre piece of the current theory of consumption and savings (Borsch-Supan & Stahl, 1991). The hypothesis postulates that, individuals and households are assumed to save in order to spread out their consumption uniformly over

their lifetime regardless of changes in income. The ultimate expectation of the hypothesis is to avoid fluctuations in consumption caused by predictable changes in income. The overall implication of the life cycle hypothesis is that consumption by individuals is expected to be relatively stable over their lifetime despite fluctuations in disposable income.

Goods consumed by households generally fall into two categories; durable and nondurable goods. They are differentiated by their economic life variability. The distinction between the two forms of goods according to Nickerson (1995) is that, durable goods are those that have a very long economic life or depreciate slowly such as electrical appliances, computers, land, cars, aeroplanes, oil tankers and tractors. But goods that have a very short life cycle or that depreciate rapidly such as those that are purchased and consumed immediately such as food, clothing, transportation, light bulbs, paper products, toiletries, and entertainment are classified as nondurable goods or simply, consumable goods. Most nondurable goods are expected to be consumed or used within three years or less (Nickerson, 1995).

The principal determinant of consumption according to the absolute income hypothesis by Keynes is disposable income or net wealth of households. That is, holding other factors equal, the greater the income level, the higher the expenditure on consumption. In effect, the higher the pension income of retired households, the higher and more stable would consumption expenditure be at retirement (Luengo-Prado & Sevilla, 2012).

Pension income (pension wealth), which is in the form of lump sum payments and monthly pension provides the main means for augmenting consumption expenditure and maintaining the welfare of households during retirement (Kumado & Gockel, 2003). It is

thus, expected that pre-retirement income is substituted by pension wealth in order to achieve consumption smoothening during the period of retirement, enhance protection against poverty and to sustain consumption expenditure by pensioners. It is against this background that pension or social security programmes all over the world are primarily designed with the ultimate goal of providing old-age income security for pensioners to maintain their pre-retirement standard of living.

The International Labour Organisation (ILO) for instance, considers social security as a human right. This is in the sense that, social security systems provide the basic income in cases of unemployment, sickness, disability, loss of the family's breadwinner, old age and retirement, invalidity and other lack of livelihoods in circumstances beyond one's control. In other context, social security helps in maintaining a stable workforce, ensuring social peace and maintaining a positive engagement with globalisation and economic development (ILO, 2008). Social security/pension systems have also been identified as important instruments in helping to promote labour market opportunities, reduce income inequalities and mitigate against risks (International Social Security Association, 2016).

Despite the role played by social security schemes in sustaining consumption expenditure during retirement, just about 20% of the world's population are adequately covered by social security while more than 50% are without any kind of social security coverage (ILO, 2008). On average, social security programmes in Africa covers only 10% of workers, with those covered being primarily in urban areas and modern enterprises (Bailey & Turner, 2002). In the case of Ghana, only 10% of the working population is covered by social security (Asomadu-Kyereme, 2006). In such events, it is anticipated that most aged people

of the world, and for that matter in Ghana would have difficulties to adequately meet their consumption expenditure so as to maintain their pre-retirement standard of living.

A number of pension schemes exist in Ghana. Examples of these schemes include the Social Security and National Insurance Trust (SSNIT), the nationally-funded pension scheme popularly known as CAP 30, the Ghana Universities Staff Superannuation Scheme (GUSSS), Ghana Armed Forces Pension Scheme, the Cocoa Research Institute of Ghana Pension Scheme and privately managed provident funds and personal pension plans.

The pension scheme in Ghana with the widest coverage of workers both in the public and private sectors is the SSNIT. It is considered the largest non-banking financial institution in Ghana with the core mandate of ensuring the replacement of part of lost income to its contributors due to old age, invalidity, emigration or death (SSNIT, 2018).

SSNIT covers 51,237 establishments which are categorised into ten economic activities. Economic activity of establishments covered by SSNIT shows a 94.16% of establishments engaged in the services, commerce, construction and light manufacturing. The services sector alone accounts for 31,839 establishments (constituting 62.14%) covered by SSNIT. In terms of the number of contributors, SSNIT has 1,242,385 active contributors. Out of this, 91.35% are engaged in the services, commerce, light manufacturing and construction fields. The services sector alone had 921,725 contributors which represents 74.19% of total active contributors. The remaining 8.65% work within agriculture, heavy manufacturing industry, mining, power, transport and domestic assistance. The total number of pensioners on the SSNIT pension payroll is over 156,262 (SSNIT Annual Report, 2015).

The 2010 Population and Housing Census reports that adult population (people who are aged 60 years and above) was 1,643,381 in number. This translates, in terms of percentages

to 6.5% of the total population of 24,658,823. It is worthy to note that, the total number of SSNIT pensioners of 156,262 constitutes only 9.51% of the total aged population in Ghana.

From the Ghana Statistical Service's (2014) Ghana Living Standards Survey Round 6, the national annual average household expenditure is GH₵9,317.00 with average annual per capita expenditure of GH₵3,117.00. Given this national average figure, it shows that a person spends approximately GH₵8.85 a day with a mean household size of four. It is worth highlighting that, the breakdown of household expenditure by quintiles puts the highest quintile spending on average at GH₵14,665.00 annually, which is almost four times the annual mean expenditure of the lowest quintile of GH₵3,294.00.

Records from SSNIT show that about 163,464 pensioners representing 86% of the total 190,000 pensioners on the SSNIT scheme earn less than GH₵1,000.00 as monthly pension (Tarlue, 2018). Disaggregating this number further, it shows that a total of 110,292 pensioners representing 67.47% earned below GH₵500.00 monthly while 53,172 pensioners representing 32.53% earned more than GH₵500.00 but not up to GH₵1,000.00 monthly. The SSNIT attributes the situation of low pension incomes earned by pensioners to low contribution to the scheme and probably, lack of adequate planning for retirement while in active service (Tarlue, 2018).

Considering the current daily minimum wage of GH₵9.68, the relatively high average household expenditures (high cost of living), low income levels in Ghana and the likelihood of most pensioners being household heads with large family sizes as highlighted above, consumption expenditure may be hardly met given available monthly pension wealth. This may result in a situation where other sources of income would have to be

required to help supplement pension wealth in financing consumption expenditure at retirement.

Individuals' working life normally extends up to 60 to 65 years in most parts of the world including Ghana (Wolff, 1988). It then follows that most households save during their working years in order to meet their expenses on consumption at retirement. Owing to this, household wealth, defined as accumulated savings rises with age until retirement and then, starts to decline (Wolff, 1988). This gives rise to a humped-shaped net wealth and age combination from the youthful stage, through the economically active stage and then, to the period of retirement.

Notwithstanding this, some individuals in their working periods seem to be myopic and fail to accumulate enough resources to compensate for a potential fall in income associated with retiremment (Aguila, Attanasio & Meghir, 2008). For that matter, when individuals are eventually hit by decline in income during retirement, they have no option than to reduce consumption to the level their existing income could satisfy. This usually happens when such pensioners have limited means of generating extra income from other sources.

1.2 Statement of the Problem

According to the life cycle hypothesis, consumption should be smoothed-out throughout one's lifetime, and in particular, there should be no change in consumption expenditure (and the standard of living) after retirement despite predictable changes in income (Wakabayashi, 2008). But a number of empirical studies have in fact, found that household expenditure falls hugely after retirement (Hamermesh, 1984; Battistin *et al*., 2009; Li, Shi & Wu, 2014; Olafsson & Pagel, 2017). This happens as a result of consumption

expenditure outstripping income earned at retirement, resulting in expenditure-income disequilibrium. This conundrum which is evident across a number of developed countries including United States, United Kingdom, China, Australia, Iceland, Italy among others, is inconsistent with the prediction of the life cycle hypothesis of consumption and has been termed as the retirement-consumption puzzle (Hamermesh, 1984; Bernheim, Skinner & Weinberg, 2001; Li *et al*., 2014).

Although, retirement consumption puzzle and its mechanism are still debated, it is believed that the drop in consumption expenditure mainly arise from adverse wealth shocks experienced by the retired which distorts optimal consumption plans. This anticipated income shortfall even makes some workers who are nearing retirement be reluctant to retire because they earn more than what they expect to receive as retirement income (McCarthy, 2006). The fall in consumption expenditure during retirement has also been linked to the failure of workers to prepare adequately for retirement (Bernhiem *et al*., 2001). Other contributory factors include unexpected adverse information about lifetime resources that occurs around retirement, involuntary retirement, change of household composition or the intra-household bargaining power at the time of retirement among others (Li *et al*., 2014).

On the contrary, some studies have found no evidence of decline in consumption expenditure during retirement especially, in connection with the consumption of certain goods and also in situations where retirement is anticipated (Smith, 2006; Aguila *et al*., 2008; Barrett & Brzozowski, 2012). Moreover, expenditures on certain goods and services such as healthcare, dependents' education, housing and maintenance of residential homes among others have even been found to increase during retirement (Olafsson & Pagel, 2017).

Also, due to the constrained nature of consumption of the aged, consumption expenditure of the retired seems to disobey the prediction of the life cycle hypothesis (Borsch-Supan & Stahl, 1991). This might be due to the fact that the elderly finds it difficult to consume much food as compared to the young. Frequent travels may also be restricted by their poor health. In such situations, the aged usually experience forced savings as they spend less on food, transportation and work attires, among others.

In all, income generated from both private and through social security sources may, or may not be able to allow pensioners maintain their pre-retirement consumption expenditure. In other words, the existence of retirement-consumption puzzle, its extent in terms of the gap and even in relation to the types of consumer goods differs among countries. While there has been substantial studies on this theme in developed countries, there has been limited research on consumption behaviour of pensioners regarding the consumption of nondurable goods during retirement in rural districts of Ghana. The interest of this study is thus, to test the prediction of the life cycle hypothesis (that consumption expenditure should relatively be stable in one's entire lifetime) on expenditure of nondurable goods during retirement in Ajumako-Enyan-Essiam (AEE), a rural district in Ghana.

1.3 Objectives of the Study

The general objective of the study was to investigate whether or not consumption expenditure on nondurable goods by SSNIT pensioners in AEE district is consistent with the prediction of the life cycle hypothesis.

The specific objectives of the study were to:

1. Investigate whether or not consumption expenditure on nondurable goods changes at retirement.
2. Examine the extent to which pensioners are able to sustain consumption expenditure on nondurable goods at retirement.
3. Analyse whether some determinants of consumption (pension income/wealth, other source of income and demographic variables) significantly influence consumption expenditure on nondurable goods at retirement.

1.4 Research Questions

The study was guided by the following research questions:

1. How does the overall consumption expenditure on nondurable goods change at retirement?
2. To what extent are pensioners able to sustain consumption expenditure on nondurable goods at retirement?
3. In what ways do the main determinants of consumption influence consumption expenditure on nondurable goods at retirement?

1.5 Significance of the Study

The life cycle hypothesis undoubtedly has very important policy implications in relation to savings, consumption and retirement planning. It is thus, not strange that several empirical works have been carried out (though, mostly outside Africa) to test its validity and relevance. The outcome of the study would therefore, inform stakeholders in social security

planning about the state of affairs regarding consumption of nondurable goods such as food during retirement. This would guide policy makers in social security panning to incorporate specific measures in designing or redesigning pension schemes that would promote and sustain the welfare of pensioners.

Results of the study makes available percentage of pensioners who are able to sustain consumption expenditure and those who are not able to sustain consumption expenditure on nondurable goods. This can be inferred for policy formulation by stakeholders of pensions in the country.

There is generally, little relevant literature regarding retirement-consumption puzzle in rural districts of Ghana like AEE. Also, consumption smoothing with regards to nondurable goods at retirement is limitedly researched in the country hence little literature on it. The study will thus add to the few existing literature in Ghana.

1.6 Scope of the Study

The study focused on SSNIT pensioners who worked in both the public and private formal sectors, currently staying within the AEE district and were members of the district Pensioners Association. The study area was chosen due to its convenience in terms of cost, access to information and proximity to the researcher.

Pensioners who reside in the district regardless of whether they worked in or outside the district were considered for the study. The study was however, limited to pensioners who were household heads.

1.7 Organisation of the Study

The repot of study is organised in five chapters.

Chapter one, which is the introductory chapter, presented the background to the study, the problem statement, the objectives of the study, the research questions, significance of the study, the scope of the study and the organisation of the study. Chapter two explored theoretical literature and empirical evidence surrounding social security and pension schemes in Ghana, the theories of consumption, concept of retirement, retirement-consumption puzzle and determinants of consumption expenditure at retirement.

Chapter three detailed the methodological issues including information on the study area, research design, the population, sample size and sampling method, instrumentation, pilot study, data source, theoretical framework and estimation technique, methodology for the specific objectives, definition, measurement and expected signs of variables as well as methods of data analysis. Chapter four was devoted for the presentation and discussion of results of the study. The concluding chapter took care of the summary of main findings, conclusions and policy recommendations based on the obtained findings from the study. The final chapter also contained the limitations encountered in conducting the study as well as suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

This chapter is structured into two main sections. The first section deals with the theoretical review concerning historical antecedent of social security system in Ghana, the concept of consumption as well as the concept of retirement. The second section entails review of relevant empirical works to the study.

2.1 Theoretical Review

This section comprises two parts. The first part deals with the nature of social security system in Ghana covering historical antecedent of social security and a look at the various pension schemes in Ghana namely; the Social Security and National Insurance Trust, the National Pension Scheme, the Ghana Universities Staff Superannuation Scheme, the Ghana Armed Forces Pension Scheme and the Cocoa Research Institute of Ghana Pension Scheme. The second part covers the concept of consumption and the review of main consumption hypothesis including the absolute income hypothesis, the relative income hypothesis, the permanent income hypothesis, the inter-temporal choice model, the life cycle hypothesis on which the study hinges, the role of expectations on consumption as well as the concept of retirement.

2.1.1 Nature of Social Security System in Ghana

This section reviews literature concerning development of social security and the various pension schemes in Ghana.

2.1.1.1 Historical Antecedent of Social Security in Ghana

Prior to independence, the country had no universal social security scheme although traditionally, certain measures had been put in place by the extended family to provide economic and social support to the aged family members who were economically and socially deprived. Traditionally, the family was the main institution that was focusing on the provision of support when members become old and are afflicted by economic deprivation, disability, and social isolation. In most serious cases, the whole community had to provide social security for the aged and the needy living in the community without family support (Kumado & Gockel, 2003).

The formalisation of social security and pensions in Ghana is largely attributed to the effect of colonization, industrialisation and urbanisation in the eighteenth century. It was then that the traditional working structures and conditions were modified to resemble that of the industrialised world. It was therefore fairly necessary to transform the working conditions and introduce end of service benefits (pension scheme) similar to the colonial master's own.

The year 1940 saw the country sign onto the ILO's convention on workers and thus, started to compensate workers who suffered injuries at the workplace with cash payments. In 1946, a non-contributory pension scheme was set up following the passage of the Pension Ordinance of 1946. But this only covered top position civil servants in the urban centres. Nine years later, the pension scheme was amended to cover professional teachers in the country by the passage of the Teachers' Pension Ordinance 1955. At the same period, lecturers and other senior staff members of the then University of the Gold Coast (now,

University of Ghana) operated a superannuation scheme for themselves (Obiri-Yeboah & Obiri-Yeboah, 2014).

Further, some private firms and other major foreign companies operationalised social security schemes for their senior employees. The schemes were purposely designed to pay specified retirement benefits to qualified retired workers. This coexisted with the payment of ex-gratia for certain category of workers (SSNIT, 2018).

After independence, the country saw the need to come up with a comprehensive pension scheme to salvage deteriorating conditions of Ghanaian pensioners. The early 1960s witnessed a major step in the development of social security in Ghana following the introduction of the Compulsory Savings Scheme. The scheme was specially designed to compulsorily deduct part of workers' wages and salaries and be paid into a government consolidated fund. The agreement was to pay back workers their total amount of contribution with interest upon retirement (Obiri-Yeboah & Obiri-Yeboah, 2014).

Unfortunately, the sustenance of the scheme became feeble after few years of its operation. This resulted out of poor education on the scheme, inefficient management and poor record keeping on contributors' contributions. The system was also inefficient in terms of refund which made some workers unable to withdraw their savings after retirement. Owing to these inefficiencies, most workers felt reluctant to continue with it. This led to its abolishment in 1965. It was consequently replaced by the Social Security Act of 1965 (SSNIT, 2018).

The passage of the Social Security Act of 1965 paved way for a social security scheme of national status in Ghana. The scheme was designed to operate as a provident fund for a period of five years (that is; from 1965 to 1970) after which it was supposed to be converted

into a pension scheme to make regular monthly payments to qualified members. The fund was initially under the administration of the Department of Pensions and National Insurance. Later, two bodies were made to co-handle the fund's functions. The Department of Pensions under the Ministry of Finance was responsible for policy and general administration while the State Insurance Cooperation (SIC) was in charge of inspectorate and operations division of the fund (SSNIT, 2018).

Under the scheme, lump sums were paid to contributors at the end of their service. Workers were made to contribute 7.5% of their monthly basic salaries to the fund and 15% by the employer totalling 22.5% per month. But there was a public displeasure of the contribution rate as being high. This led to its downward revision to 5% by the worker and 12.5% by the employer summing up to 17.5%. Main features of the fund included the fulfilment of five out of nine of ILO Convention 102 of 1952's minimum standards of social security contingencies. The benefits catered for under the provident fund included superannuation benefit and the following contingencies:

1. Sickness benefits - payment to members who become sick and can therefore not earn income for themselves.
2. Emigration benefits - payment made to members of the fund who emigrate permanently from Ghana.
3. Death/survivors benefits - include all benefits paid to the specified survivors or next of kin of a deceased member.

4. Invalidity benefits - payment made to a member of the fund who suddenly suffers permanent incapacitation or rendered mentally instable to be able to continue working.
5. Unemployment benefits - payment made to members who suffer a layoff and rendered unemployed.

The other four contingencies (as included in the ILO Convention 102) that were not covered by the scheme included medical care of a curative/preventive diseases, benefits for work injuries including diseases contracted in the course of job performance, family benefit covering the maintenance of children and maternity benefit (Obiri-Yeboah & Obiri-Yeboah, 2014).

The qualification for benefits under the provident fund of 1965 was based on age and sex. The superannuation benefits were paid to members based on qualification of being retired. The retirement age for males was 60 years and 55 years for females.

The Trade Union Congress raised two key concerns about the fund and demanded for amendment of the law. The first request was to transform the fund (which was a provident fund in nature) into a pension scheme that would make both lump sum and monthly pension payments to retired members. The second call was to entrust the management of the fund into one institution rather than being split among two different management bodies.

Upon heeding to the second request of unifying the administration of the scheme, the government at the time, the National Redemption Council issued a decree called the NRCD 127 in the year 1972. It was this decree that saw the birth of SSNIT in the country (SSNIT, 2018). It is worth mentioning that the passage of NRCD 127 did not change the status of

the scheme as a provident fund to a pension scheme. However, it established a single corporate body (as in, SSNIT) to administer the fund that was previously co-managed by the Department of Pensions and the State Insurance Cooperation.

An important intention of the NRCD 127 was to bring all civil servants who were employed on or after 1st January, 1972 under one pension scheme. It was compulsory for establishments with five workers and above to register their workers under the scheme. This included the established private firms. It was however optional for establishments that had less than five employees to join the scheme.

It is also important to note that the NRCD 127 exempted workers in the security services including members of the armed forces, the police service, the prison service and the national fire service from joining the scheme. The exemption also applied to foreigners in diplomatic missions and senior members of the universities and research institutes in the country (SSNIT, 2018).

The contribution rate under the social security Act 1965 which was 5% and 12.5% for the worker and the employer respectively was maintained under the NRCD 127. But out of this total monthly contribution of 17.5%, 2% was reserved for life insurance and unemployment, leaving 15.5% in the member's account. Contingencies under the NRCD 127 were also similar to that of Act 279 of 1965.

In the year 1975, the then government, the Supreme Military Council amended sections of the NRCD 127 to give civil servants the option to register under either the CAP 30 or the SSNIT. It was clarified that option made are irreversible. Also, failure to make an option resulted in automatic inclusion in the SSNIT scheme (SSNIT, 2018).

There was public outcry by the labour unions and workers in general in 1987 to amend the NRCD 127 as a provident fund to a pension scheme. In pursuant to this, proposals which recounted the limitations of provident fund and the benefits of pension scheme were made to the government. The then government, the PNDC government in response to the plight of the labour unions and workers in general, passed the PNDC Law 247 in 1991. This transformed the SSNIT as provident fund into a pension scheme. The SSNIT was made to continue managing the 'new' pension scheme (SSNIT, 2018).

2.1.1.2 The Main Pension Schemes in Ghana

The main pension schemes in Ghana include the Social Security and National Insurance Trust, The National Pension Scheme (CAP 30), The Ghana Universities Staff Superannuation Scheme, Ghana Armed Forces Pension Scheme and the Cocoa Research Institute of Ghana Pension Scheme.

2.1.1.2.1 Social Security and National Insurance Trust

The Social Security and National Insurance Trust (SSNIT) commenced operation as a statutory public social security institution charged with the administration of basic social security and pensions from January 1, 1991 following the passage of the PNDC Law 247. Its vision is to provide income security for retired workers in Ghana through excellent business practices.

The core mandate of SSNIT concerns the provision of income meant to replace the lost pre-retirement income of members in events of old age (as in superannuation benefits), invalidity and survivors/death benefits. SSNIT is a contributory pension scheme. The main

source of funding the Trust is members' contribution. The rates of contribution to SSNIT per month are 5% by the worker and 12.5% by the employer of workers' basic salaries. Membership to the Trust is compulsory for all recognised private and public work units. It is however optional for the self-employed. Members of the security services including the military, the police, fire service, the prison service and senior members of the universities are exempted from SSNIT.

Current membership of SSNIT stands over 1,471,564 as at June 2018 which include over 190,079 pensioners (SSNIT, 2018). As a pension scheme, SSNIT pays both lump sum and monthly pensions to qualified members. Qualification for full pension requires that the person is 60 years and have contributed for at least 240 months (which is equivalent to 20 years). The normal pension attracts 50-80% of the three best years' salaries of the total years contributed. Failure to meet the minimum period of contribution results in only payment of lump sum to the retired member.

SSNIT also grants reduced pension to members aged 55 to 59 years and have contributed for the minimum 240 months who wish to retire. For qualification of the invalidity pension, a member should have contributed at least 12 months within the last 36 months of membership where a member is declared permanently invalid by a medical doctor and certified by a medical board. Death or survivors' benefits is paid in the form of lump sum to dependents of an active member who dies before retirement or when a member dies as pensioner before attaining 72 years. As an obligation, SSNIT reviews pensions annually to reflect current economic conditions. This usually takes effect from 1st January every year.

The 'New' SSNIT of 2008

The SSNIT under Act 247 was befallen with some limitations in the mid 1990's through the early 2000's. There were unstable inflation rates which had a toll on the already dwindling retirement income which affected lump sum in particular. There was also a widening disparity in benefits between the CAP 30 and SSNIT pension schemes (Ashaley, 2012). A number of pensioners complained about the inadequacy of their pension benefits (lump sum and monthly pension). This generated public agitations and protests by a number of public sector workers under SSNIT that they are hooked onto the CAP 30 scheme. Another concern that became debatable at the time was the neglect of the informal sector workers (who constituted about 80% of the country's working population) under any formal pension scheme (Ashaley, 2012).

Owing to extensive deliberations, the government then initiated steps to reform SSNIT to provide improved retirement benefits for workers. This eventually brought Act 766 in the year 2008 which meant to replace all pension schemes in Ghana including CAP 30. The implementation of the new Act started in January 2010. The Act continued to make membership to SSNIT mandatory for all workers in the formal and private sectors and voluntary for the self-employed.

A spectacular provision of Act 766 was the creation of a three-tier pension scheme and the establishment of a National Pensions Regulatory Authority (NPRA) to regulate the administration and management of pension schemes in Ghana. The three-tier pension structure of the 'new' SSNIT is briefly explained as follows:

The Tier-One Pension Scheme

The first tier is structured to cater for the payment of monthly pensions and other benefits to members. This tier is managed solely by SSNIT. Age qualification for joining the scheme ranges from 15 to 45 years. Workers aged 55 years and above as at 1st January, 2010 were not compelled to join. The purpose of Tier-1 is for SSNIT to cater for the payment of monthly pensions and other specified contingencies of members.

Contribution rates per month based on the worker's basic pay are 5.5% from the worker and 13% from the employer. This gives a total of 18.5% which the employer must remit to SSNIT within fourteen days of every month. By law, SSNIT remits 5% to the second tier occupational pension scheme and 2.5% to the National Health Insurance Authority to cater for health insurance of the member. SSNIT is thus left with 11% for the administration of Tier-1 for the member.

Contingencies catered for by the first tier include superannuation pension, invalidity pension and survivors' lump sum. Though the compulsory retirement age was maintained at 60 years and voluntary retirement from 55 to 59 years, it is worth mentioning that the qualifying period of contribution for full pension which was 240 months (or 20 years) was reduced to 180 months (or 15 years) under the new Act. The guaranteed pension payment period which was 72 years under Act 247 was also extended to 75 years (SSNIT, 2018)

The Tier-Two Pension Scheme

This is an occupational pension scheme which is also compulsory for workers both in the public and private sectors. Its intent is to provide a backup pension benefit to help the contemporary pensioner meet his needs. This second tier is privately managed by Trustees that are duly approved and licensed by the board of NPRA.

The contribution rate is 5% (2.5% from the worker and 2.5% from the employer) and it is remitted by SSNIT to the private fund managers every month. As a defined contribution scheme, the second tier pays lump sum benefits calculated on the basis of accumulated contribution plus the share of member's returns on investment/interest upon retirement. The quantum of the lump sum depends on market principles, investment viability and strategies of the fund managers (NPRA, 2018).

The Tier-Three Pension Scheme

This is an optional pension scheme which comprises provident and personal pension funds. It is voluntary, fully funded and privately managed scheme that is aimed at providing members and their beneficiaries with enhanced pension benefits to complement mandatory pension benefits. Both formal and informal sector workers are eligible to join.

Provident fund scheme according to Act 766 of 2008, is a scheme governed by a trust to which a contributor or the contributor's employer or both contribute to a pension scheme. It provides benefits based on a defined contribution formula to provide for the payment of lump sum benefits to the members of the scheme when they reach the retirement age, or any other prescribed event occurs in relation to them, or in the case of members who die before reaching the age or before the occurrence of such an event, provides for the payment of those benefits to the personal representatives or beneficiaries of the estates of those members (National Pensions Act, 2008).

Personal pension scheme on the other hand refers to any pension scheme to which the contributor contributes personally to provide benefits based on a defined contribution formula in the form of pensions or otherwise, payable on death or retirement to or in respect of persons covered under the new pensions Act or their beneficiaries (National Pensions

Act, 2008). A personal pension scheme acts as an agreement between the contributor and a pension provider of his choice. Individual contributors have the option to choose their preferred pension providers thus, allowing contributors the freedom in a way, to determine where their funds should be invested.

The NPRA remains the top regulatory body of the third tier. To ensure transparency, management of the scheme is delegated to three independent service providers namely Pension Trustees, Pension Fund Managers and Pension Custodians.

Pension Trustees are charged with the administrative responsibility of the Tier-3 scheme. Trustees ensure that investment objectives of pension contributors are followed. They are empowered to appoint pension fund managers, custodians and other service providers to help manage the scheme. However, they do not have access to the contributors' funds. The number of licensed trustees by the NPRA is about 34 (NPRA, 2018). These are made up of insurance companies and other corporate service providers including Petra Trust Company Limited, Provident Life Trust Company Limited, Metropolitan Pensions Company Limited, Axis Pension Trust Limited, Enterprise Trustees Limited and Glico Pensions Trustee Company Limited among others.

Pension fund managers are responsible for investment decisions mandated by the Trustees. They report regularly to both the Trustee and NPRA but do not have direct access to the pension funds. There are about 78 fund managers approved by the NPRA. Notable among them are SIC Financial Services Limited, Databank Asset Management Services Limited, HFC Investments Services Limited, Gold Coast Fund Management Limited, FirstBanC Financial Services Limited, EDC Investments Limited, SAS Investment Management Limited and New Generation Investment Services Limited. Pension custodians unlike

Trustees and fund managers, have access to pension funds (including fund assets) and are also responsible for their safe keeping (NPRA, 2018).

The third tier is characterised by tax exemption up to 35% of employee's basic salary. Contribution amount is voluntary but up to a limited percentage of one's basic pay as the pension laws in Ghana do not permit more than 35% of an employee's salary to be contributed to a pension scheme. SSNIT members within the formal sector who contribute a total of 18.5% to the Tier-1 and Tier-2 for instance, are left with maximum 16.5% of which they can contribute to the Tier-3. Hypothetically, a worker whose monthly basic salary is GH₵800.00 and wishes to fully utilise his Tier-3 pension privilege would be permitted to contribute maximum amount of GH₵280.00 into his account. But, a few number of personal pension providers set a limit on the minimum amount that can be contributed. For example, the minimum monthly contributions to Metropolitan and Pentrust personal pension schemes is GH₵50.00 and GH₵200.00 respectively (NPRA, 2018).

Tier-3 pays lump sum and other contingencies such as survivors', sickness, maternity and emigration benefits to qualified policy holders. It also allows for partial withdrawals and the use of one's funds as collateral for mortgage. However, contributors are required to stay in the scheme for a minimum period before they can apply for partial withdrawals. The current minimum period before withdrawals from Tier-3 pension schemes can be made is 10 years. But, individuals who wish to withdraw prematurely from the scheme can do so with some charges. Withdrawing all contributions before the 10 years maturity period depends on the type of policy provided by the pension provider. Metropolitan and Enterprise personal pension schemes for instance limit partial withdrawals up to 50% of

one's total contribution (NPRA, 2018). The three-tier pension scheme of Act 766 is summarised in Table 2.1.

Table 2.1: The Three-Tier Pension System in Ghana

	FIRST TIER National Basic Scheme	**SECOND TIER** Occupational Scheme	**THIRD TIER** Private Personal Plan
Principle	Employment and earnings-relate	Employment and earnings-related	Individual
Coverage	Compulsory for all workers in the formal labour market	Compulsory for all workers the formal labour market	Voluntary for all citizens
Contributions	Employer-employee	Employer-employee	Individual and tax-incentivized
Financing	PAYG with partial funding	Fully-funded	Fully-funded
Benefits	Defined benefit (regular monthly payments)	Defined contribution (lump-sum benefits)	Defined contribution (lump-sum benefits)
Objective	Income replacement Risk-pooling and intergenerational transfer	Supplementary benefits Diversifying sources of retirement income	Supplementary benefits Fosters saving among informal-sector workers
Administration	SSNIT	Trustees, Pension fund Managers & custodians	Trustees, Pension fund Managers & custodians
Regulatory body	NPRA	NPRA	NPRA

Sources: Government of Ghana (2006, 2008), NPRA (Credit: Ashaley, 2012)

The SSNIT Informal Sector Fund

The SSNIT informal sector scheme is operated with the aim of broadening pension coverage and to help alleviate poverty of Ghanaians who work in the informal sector. It is designed to cover workers within the informal sector or the self-employed in Ghana such as farmers, fishermen, drivers, artisans among others. The self-employed aged between 15 and 59 years, Ghanaians working in formally established institutions and Ghanaians living abroad are eligible to join.

The scheme is a fully sponsored personal pension scheme designed to address the plight of informal sector workers who are not covered under the mandatory SSNIT scheme. Individuals can contribute any amount they can afford on a weekly, monthly or regular basis depending on the nature of their business. Accrued benefits to members depend on the quantum of contribution made.

SSNIT credits every contributor a two separate sub-accounts. The accounts are the personal savings account and the retirement account with each taking 50% of the amount contributed. The personal savings account caters for lump sum payment upon retirement while the retirement account caters for specified contingencies such as old age, invalidity and death. In effect, informal sector workers receive lump sum payments and monthly or quarterly pensions when they retire. But before retirement, it is permissible for members who wish to make partial withdrawals from their personal savings account in accordance with the rules and regulations formulated and approved by SSNIT. Membership to the fund as at the end of May 2016 was 150,000 people (SSNIT, 2018).

It is good highlighting that some sections of Act 788 were amended barely four years after its implementation through the enactment of Act 883 in the year 2014. Key highlights of the Act include the following:

- It was observed that members whose age ranged from 50 to 54 years became worse off under Act 766 as it exempted workers who were aged 55 years and above as at January 1, 2010. This necessitated the enactment of Act 883 to deal with the matter. The new Act directed that workers who were 50 years in 2010 should be exempted from being covered by Act 766. They were made to continue contributing 17.5% to SSNIT. They were also qualified for full monthly pension and 25% lump sum to be borne by SSNIT. Joining Act 766 of 2008 was still voluntary for workers aged 50 years by the year 2010.
- Act 883 was also necessary to correct error in the formula for computing pensions as contained in Act 766. This computation error was later detected after the passage of Act 766 in 2008 and its correction was possible only through amendment. The new Act resolved that the minimum contribution period of 15 years (180 months) should attract a pension right of 37.5% and every twelve months should earn a member 1.123% pension right up to a maximum of 60%.
- Another important feature of Act 883 was the introduction of emigration benefits under the first tier of the parent Act 766. Its intention was to pay benefit to foreign nationals who were members under the first tier of SSNIT but have retired and leaving Ghana permanently. The benefits also cover those who are not due for retirement but intent to permanently leave the country.

2.1.1.2.2 The National Pension Scheme

The National Pension Scheme, otherwise known as CAP 30 is the next to SSNIT in terms of coverage of workers in Ghana. The popular name of the scheme, 'CAP 30' was carved from Chapter 30 of the pension law that brought it into being (that is; the Pensions Ordinance No. 42 of 1950). The scheme covered pensionable members of the civil service and the Ghana Armed Forces until 1975 when the Pension and Social Security Amendment Decree 1975, otherwise called SMCD 8 and the subsequent PNDC Law 247 were passed.

The enactment of the PNDC Law 247 on January 1, 1972 bared new entry into CAP 30 and also compelled pensionable public officers to opt for either the SSNIT Provident Fund or continue to be under the CAP 30. Choice made by workers was deemed irreversible and persons who would fail to choose any of the schemes within a specified timeframe had to be automatically migrated onto SSNIT.

The scheme was formerly a non-contributory pension scheme with defined contingencies covering members of the security services and the judiciary, the legal service and some civil servants employed before 1972. Subsequent amendments made it contributory for civil and public servants. The rate of contribution is 5% of members' basic salaries and the employer adds 12.5% of workers' pre-tax salary and this goes directly into the consolidated fund (Ashidam, 2011).

The qualification criteria for pension benefits are that a pensionable worker should have satisfied a minimum of 10 years continuous service and must at least be 45 years (though the mandatory retirement age stands at 60 years). Defined benefits enjoyed by pensionable members include lump sum, monthly pensions, reduced pension with gratuity (in the case of those who retire voluntarily), death gratuity, commuted pension, invalidity pension,

survivors benefit as well as contract gratuity for ambassadors and high commissioners (Ashidam, 2011). Non-pensionable members also benefit at the end of their service in the form of ex-gratia. The Controller and Accountant General's Department has the sole responsibility over the administration of CAP 30 in terms of payment of gratuity and payment of monthly pensions to qualified members.

2.1.1.2.3 Ghana Universities Staff Superannuation Scheme

The Ghana Universities Staff Superannuation Scheme (GUSSS) is a pension scheme for the staff of public universities in Ghana. It was set up in the year 1976 to cover university teachers, research fellows, administrative staff, library and other professional staff at the nation's public universities. Finance officers under the authority of management boards of the various institutions are charged with the administration of the scheme.

The monthly contribution rate per member stands at 22.5%. This comprises 10% from a member's basic salary and the employer contributing 12.5% of the employee's monthly basic pay. The mandatory retirement age of members is 60 years and voluntary retirement age is 50 years (The GUSSS constitution).

In terms of benefits, the scheme caters for both lump sum and monthly pension to qualified members. Qualification for full or reduced pension requires a member to attain the specified legal retirement age and must have also served for 15 years minimum.

2.1.1.2.4 Ghana Armed Forces Pension Scheme

The Ghana Armed Forces Pension Scheme is a non-contributory pension scheme with defined benefits that is specially designed to cover regular commissioned officers of the

Forces. The Ghana Armed Forces herein, comprises the Ghana Army, the Air-force and the Navy. The scheme is fully funded by the government from the consolidated fund just like the CAP 30.

Qualification for full retirement benefits for commissioned officers is based on attaining the age of 50 years with a minimum of 10 years unblemished service. Other low-ranked officers are to serve for a 15 years minimum to qualify for pension benefits. An example of benefits covered by the scheme is the payment of gratuities upon retirement. Another one is family pension which is paid to family members of an officer who loses his life whilst in active service or already enjoying pension pay (Ashidam, 2011).

2.1.1.2.5 Cocoa Research Institute of Ghana Pension Scheme

The Cocoa Research Institute of Ghana (CRIG) pension scheme was set up to cater for the pension needs of the senior administrative and research staff of the CRIG. The CRIG was formerly under the Centre for Scientific and Industrial Research (CSIR) from 1963. Following the passage of Ghana Cocoa Research Decree in 1979, the CRIG was detached from the CSIR. It became necessary for a pension scheme to be designed for the CRIG hence, the CRIG pension scheme.

In 1981, the CRIG was incorporated in the newly established board, the Cocoa Marketing Board (CMB) by Act 4476. From then, new recruited staff members were barred from subscribing to the scheme.

Monthly contribution rates to the scheme are 10% and 12.5% basic salary of a worker by the employee and employer (CMB in this case) respectively. The scheme pays lump sum

and monthly pensions to qualified retired members. However, the scheme pays for the lump sum while the government takes care of the monthly pensions (Ashidam, 2011).

2.1.2 The Concept and Theories of Consumption

Rozmahel (2008) defined consumption as goods and services bought by households. Raghbendra (2003) also saw consumption as the direct utilisation of goods and services by consumers not including the use of means of production such as machinery and factories. As mentioned earlier, consumption constitutes the largest component of aggregate demand of most countries and consumption decisions undoubtedly have strong influence on the growth of most economies (Corrales & Mejia, 2009).

The types of goods consumed are classified into three categories as durable goods, non-durable goods and services. Durable goods involve goods that last a long period of time, such as automobiles and refrigerators. Expiry period for such goods are relatively longer. Nondurable goods are goods that last only a short period of time, such as food and clothing. Services include work done for consumers by individuals and firms, such as haircuts, driving services, use of post, health and financial services.

From the Ghana Living Standards Survey Round 6 of the Ghana Statistical Service (2014), household consumption expenditure is the sum of the value of goods and services purchased by households, consumed from home production, or received as gifts or payment in kind. It adopted the UN Statistical Classification System called Classification of Individual Consumption According to Purpose (COICOP) to group household expenditure on consumption into two main groups which are food and non-food components. The food component comprises expenditure on food and non-alcoholic beverages whereas the non-

food component refers to expenditure on alcoholic beverages, tobacco and narcotics, clothing and footwear, housing, water, electricity, gas and other utilities, health, education, recreation, personal care and durable goods.

Consumption behaviour of rational agents and how it is determined in an economy has been explained by various schools of thought. The commonly documented consumption hypotheses are the absolute income hypothesis, the relative income hypothesis, the permanent income hypothesis, the inter-temporal choice model and the life cycle hypothesis.

2.1.2.1 Absolute Income Hypothesis

In his paper, the General Theory of Employment, Interest and Money published in 1936, John Maynard Keynes relied on intuition to demonstrate the central principle of his consumption theory on a very common sense. According to Keynes (1936, p.96) cited in Alimi (2013), "The fundamental psychological law, upon which we are entitled to depend with great confidence both a priori from our knowledge of human nature and from the detailed facts of experience, is that men are disposed, as a rule and on the average, to increase their consumption as their income increases, but not by as much as the increase in their income''.

His work on the relationship between income and consumption identified income as the main determinant of consumption. This was the main basis of the absolute income hypothesis. The consumption function by Keynes is thus of the form; $C = \alpha + \beta Y$, ($\alpha > 0$, $0 < \beta < 1$) where; C represents consumption, Y is disposable income, α is autonomous consumption and β represents the marginal propensity to consume (MPC). The MPC (β) is

expected to be constant and positive but less than one, implying that the higher the income, the higher the consumption expenditure. The autonomous component of the function α, is assumed to be small but positive.

Keynes' fundamental psychological law conjectured three important features. The first is that, consumption expenditure and income are positively but not proportionally related. The implication is that in the short run, average propensity to consume (APC) is greater than the MPC. That is, APC > MPC, where APC = $\frac{C}{Y}$ and MPC = $\frac{\Delta C}{\Delta Y}$. This is because autonomous consumption does not change with income in the short run but as wealth and income rise in the long run, consumption also increases. This results in the marginal propensity to consume out of the long run income to be closer to the average propensity to consume (Alimi, 2013).

Secondly, the average propensity to consume which is the ratio of consumption to income falls as income rises. With an increase in income, less proportion of income is spent on consumption and a larger share is saved by the rich while the poor relatively consumes a larger share of his income and saves a smaller share. To Keynes, savings is a luxury which can only be afforded by the rich. The third conjecture suggests a stable consumption function in both the short and long runs.

The absolute income hypothesis was subjected to empirical evidence by Simon Kuznets to ascertain Keynes' claim that as income increases, the APC declines. Kuznets (1942), cited in Alimi (2013) used time series data spanning from 1879 to 1938 to test whether aggregate savings ratio, despite large increases in national income, had remained significantly stable. The use of cross-sectional data showed a positive correlation between income and average savings ratios, but time series data showed no sign of such relationship in the long run.

This came to be known as the Kuznets paradox. Kuznets' work laid the foundation for recent debate on the nature of the consumption function and also inspired economists to come up with different hypotheses of consumption.

2.1.2.2 Relative Income Hypothesis

The Relative Income Hypothesis (RIH) is attributed to Duesenberry (1949). The central idea of the RIH as contained in his book "Income, Saving and the Theory of Consumer Behaviour" is that, consumption depends on current income relative to some income standard that the household sets based on its own past income or on the income of other households around it. The hypothesis hinges on two variants; a cross-sectional version and a time-series version.

With the cross-sectional version, Duesenberry held onto the view that individuals keep up with the 'Joneses' when it comes to spending. His argument was that current income is not the only determinant of an individual's consumption expenditure but his income compared to the sub-group of the population with which he identifies himself with. Consumers plan their consumption expenditure in relation to other people of the society. Individuals with lower income will consume a larger share of their income in order to keep up with the immediate environment while individuals with high income relative to the sub-group will save more and consume less, ceteris paribus.

The time-series version of the RIH assumes that households design their consumption expenditure by considering their current incomes relative to previous income levels. Consumers who have had high levels of income and for that matter, high consumption levels in the past would currently strive to maintain the high consumption levels that had

been earlier attained. So the fall in income would not lead to proportionate fall in consumption expenditure. Taking a cue from the RIH implies that, a fall in income at retirement would not necessarily lead to a decrease in consumption expenditure in proportion since pensioners strive to maintain their pre-retirement level of consumption.

2.1.2.3 Permanent Income Hypothesis

The permanent income hypothesis (PIH) as proposed by Milton Friedman in 1957 maintains that individuals spend a fixed fraction of their permanent income on consumption. According to Friedman, households maximise their lifetime utility subject to the constraint that all their lifetime resources must be spent. The hypothesis distinguishes between consumption and current expenditure on one hand, and income and current receipts on the other hand. This is because a consumer is thought to plan his consumption expenditures on both incomes received during the current period and income expected during his lifetime. Therefore, consumers plan their expenditure on the grounds of a long-run view of the resources that will accrue to them in their lifetime (Alimi, 2013).

Friedman postulated that income (Y) is made up of two components; a permanent component (Y_P) and transitory component (Y_T). Permanent income is the income that are expected to be earned with certainty over the lifetime and which is anticipated to be carried on into the future. Transitory income conversely, is the income that households do not expect, but rather earn with uncertainty and which may fluctuate over a period of time. It can be referred to as the difference between current income and permanent income. A household's income can thus be expressed in the form: $Y = Y_P + Y_T$.

Consumption expenditure (C) also comprises permanent (C_P) and transitory components (C_T). Permanent consumption is determined by permanent income and is certain over the lifetime. Transitory consumption however is the kind that is uncertain. The assumption is that there is no relationship between permanent consumption and transitory consumption and also no relationship between transitory consumption and transitory income. This implies that, unexpected increases in income caused by fluctuations in transitory income will not spontaneously affect the consumption levels of households. To Friedman, consumption is a function of permanent income and not transitory income.

The PIH implies that households smooth their consumption over their lifetime based on permanent income, and that fluctuations in transitory income do not affect permanent consumption. The marginal propensity to consume is therefore constant and equal to the average propensity to consume.

2.1.2.4 Inter-Temporal Choice Model

The inter-temporal choice model of consumption was posited by Irving Fisher in the year 1930. The model explains how rational consumers are forward looking in deciding the bundles of goods and services to be consumed in current period and the future period in order to maximise utility in their lifetime. A consumer who decides to consume less of his income today and more tomorrow would have to save more of his current income today to attract interest. On the other hand, if a consumer decides to consume more today then, he would have to borrow to spend and bear interest payment that will result in a decrease in tomorrow's consumption.

In explaining the model, Fisher adopted a model where consumers live in two periods. The working life of individuals is regarded as period one while the retirement period is period two. Savings is assumed to be done in period one to cater for future consumption in period two. To begin with, a consumer earns income, Y_1 in period one and Y_2 in period two. It is assumed that the consumer does not have any initial wealth. The present value of his total income is therefore given as: $Y_1 + Y_2(1+r)$, where r is the real interest rate. He also consumes out of his income, C_1 and C_2 in periods one and two respectively. Savings in period one is thus given as: $S_1 = Y_1 - C_1$. There is no expectation to save in period two since there is no period three. Consumption in the second period is thus given as: $C_2 = (1+r)S_1 + Y_2$. Adding the first period's savings and second period's consumption gives: $C_2 = (1 + r)(Y_1 - C_1) + Y_2$. By simplification, we have: $(1 + r)C_1 + C_2 = (1 + r)Y_1 + Y_2$. Dividing through by $(1 + r)$, we obtain the inter-temporal budget constraint that faces the consumer as: $C_1 + C_2/(1 + r) = Y_1 + Y_2/(1 + r)$. This budget line implies that the present value of consumption and that of income must equilibrate.

Since all consumption decisions on, and inside, this line are feasible, a consumer might wonder which actual consumption decision is taken. To solve this problem, Fisher introduces what is called an indifference curve. Consumption maximisation thus, takes place by choosing a point of consumption that makes the indifference curve tangent to the inter-temporal budget constraint. This implies that a consumer's utility functions are functions of the present value of consumption (Malmqvist & Johnson, 2009). The overall implication of the inter-temporal choice model in relation to retirement is that, rational consumers are expected to consume less in their working life in order to save more of their income to enable them achieve high levels of consumption expenditure at retirement.

2.1.2.5 Life Cycle Hypothesis

The life cycle hypothesis (LCH) was pioneered by Franco Modigliani and Richard Brumberg in 1954. It provides a good framework for studying consumption pattern of agents by emphasising how savings could be used to transfer purchasing power from one phase of life to another. In early life, labour income is usually low relative to later working years. Income typically peaks up in the last part of the working life, and then starts dropping at retirement.

Consumers who wish to smooth consumption would prefer to borrow during the early low-income years, repay those loans and build up wealth during the high-income years, then spend off the accrued savings during retirement. The savings realised from the middle age helps the individual to transfer part of his income in his working life to his retirement period when he is not working.

The implication of the LCH is that, consumption is expected to be relatively stable over one's lifetime even though there would be fluctuations in income. Households are thus expected to smooth consumption by borrowing and saving in their entire lifetime (Modigliani & Brumberg, 1954).

2.1.2.6 Inflationary Expectations, Uncertainty and Consumption Expenditure

Economists have mostly used expectations to study what happens to consumption expenditure of individuals. Common types of expectations in economics include inflationary, interest rate, income and wealth expectations.

The two general approaches to explaining the development of expectations are adaptive and rational expectations. While the former presumes that expectations are primarily

learned from experience and are formed immediately, the latter presumes that expectations are formed when agents see new development in the economy and they logically deduce expectations based on information they have at hand. Rational expectations may take months or even years to be formed.

Higher inflation expectations may lead to higher uncertainty, and hence reduce consumption expenditure via a precautionary-savings channel. Advocates of temporary higher inflation expectations argue that higher inflationary expectations lead to lower real interest rates. Lower real interest rates, in turn, stimulate consumption expenditure through the intertemporal substitution effect. It is thus worthy to note that, the substitution effect is especially strong for durable consumption goods, because they are mostly sensitive to interest rate and are easier to be substituted intertemporally (D'Acunto, Hoang & Weber, 2015).

The implication of inflationary expectations is that when inflation is expected and can be accurately predicted, consumers and for that matter, pensioners can incorporate inflationary expectations into their budgets. Thus expenditures can be adjusted to include inflation in order to safeguard incomes of pensioners. In all, anticipated inflation enables pensioners to plan ahead on consumption expenditure during retirement.

2.1.3 The Concept of Retirement

Retirement as a concept is more applicable in some cases than in others. For instance, an individual who has left a full-time job at older age, not working or receiving pension payment can be said to be retired. But it is difficult to describe a self-employed who has scaled back operations in older age but is still working as being retired.

Denton and Spencer (2008) defined retirement as withdrawal from paid working life. They found it to be consistent with the definition provided by the Oxford English Dictionary – 'To withdraw from office or an official position; to give up one's business or occupation in order to enjoy more leisure or freedom'. They considered retirement to be a complex phenomenon which no one definition will satisfactorily represent all situations. This is because retirement can be voluntary or involuntary, gradual or sudden and it can be temporary or permanent.

Bowlby (2007) saw retirement as a fuzzy concept which can be viewed as both an event and a state of being retired which may mean different things to different people. He thus called for an international standard definition of the term retirement so as to assist in data collection for analyses on retirement-related issues.

For Richardson (1993), retirement is a period where a person engages in no gainful employment or when a person receives retirement pension benefit (in the form of lump sum payments and monthly pension) or when one is not employed a year round. In Richardson's view, any person who happens to be found in any of these conditions can be described as a pensioner.

Banks and Smith (2006) shared similar belief with that of Richardson (1993) but added that retirement can also exist in the state of mind. That is, when an individual perceives himself to be retired. They also considered retirement as a sudden, rather than a gradual process and encompasses the decision whether to work at all, rather than the decision of how many hours to work. Retirement, especially with informal sector workers, is also an individual decision rather than one made jointly with other household members (Banks &

Smith, 2006). The paper finally identified two major factors that force people to retire as one; attaining the mandatory retirement age and two; poor health.

For Atchley (1996), retirement is the departure event in an individual's life course from a phase of occupational life cycle. It is a condition in which an employee is forced or allowed to be employed less than full-time and in which his income is derived at least in part from a retirement pension earned through prior years of service as a job holder. Both of these conditions must be met for an individual to be regarded as a pensioner.

Retirement age is the age at which one finally leaves the labour force. In practice, retirement is something that happens mainly to older workers. The young rarely retires. Older workers here typically means those aged 50 to 60 years (Denton & Spencer, 2008). Retirement age is mainly determined by the employment and pension legislation of the country in question. The retirement age in developed countries ranges from 60 to 65 years. It is 60 years for males and 55 years for females in socialist countries. In developing countries like Ghana, it is found between 50 and 60 years (Rutherford, 2002).

Retirement age in Ghana is 60 years for workers covered by SSNIT and 55 years for persons who work in hazardous employment such as mining. A worker can also retire voluntarily on attaining the age of 55 years and after contributing to the SSNIT for a minimum period of 15 years (National Pensions Act, 2008).

2.2 Empirical Review

This section reviews relevant research related to the study. It covers literature on retirement-consumption puzzle, pensions in Ghana, effects of retirement on the lives of pensioners and determinants of consumption expenditure at retirement.

2.2.1 Retirement-Consumption Puzzle

Retirement-consumption puzzle is when there is one-off drop in consumption expenditure at the time of retirement that may be hard to reconcile with lifetime optimising behaviour (Battistin *et al*., 2009). Hamermesh (1984) carried out the first empirical study in connection with consumption and lifetime wealth in the United States. The study sought to explore consumption expenditure in relation to lifetime income levels of the elderly in the United States. A longitudinal data, the Retirement History Survey covering the period 1973 to 1975 was used for the study. A sample size of 500 couples aged between 62 and 69 years was used. Results of the study indicated that resources available to pensioners were inadequate to enable them sustain the level of real consumption enjoyed in their retirement period. To be specific, consumption expenditure exceeded income and social security wealth by 14%. The inability to sustain real consumption caused 9% of the retired to re-enter the labour force to earn extra income. Some households also had to cut their consumption expenditure as they advance in age. In short, 53% of the households reduced spending by more than 10% relative to the average change in real spending.

Battistin *et al*. (2009) also investigated the size of consumption drop at retirement in Italy. They exploited the exogenous variability in pension eligibility to identify the casual effect of retirement on consumption expenditures. This was done within regression discontinuity framework. Data used was Survey on Household Income and Wealth (SHIW) for the period 1993 to 2004. The SHIW contains information on total household spending, current or last job and years of contribution to public pension scheme. The study found that a non-negligible fraction of individuals retire as soon as they become eligible. It was also revealed that consumption of nondurable goods dropped by 9.8 % at retirement. The fall was not

driven by liquidity problems for the less well-off in the population, but was attributed to the drops in goods that are work-related expenses or leisure substitutes. Another reason for the consumption expenditure drop at retirement was the significant fall in the number of grown-up children living with their parents.

In the case of Asia, Li *et al*. (2015) examined whether Chinese households smooth consumption at retirement. They focused on household nondurable expenditures, which include work-related expenditures, expenditures on food consumed at home, expenditures on entertainment and the remaining expenditures on nondurable goods. The study used a panel data, Urban Household Survey in China for the period 2002 to 2009. Regression discontinuity approach was used for the estimation of the effect of retirement on consumption expenditure. A sample size of 2,321 households from time use survey covering ten provinces in China was used for the study. The sample was restricted to only retired husbands. The study found that retirement reduces total nondurable expenditures by 20%. The reduction was accounted for by the reduction in work-related expenditures and expenditures on food at home. Furthermore, after retirement, husbands increased the time spent on shopping and food preparation. The study's findings can be explained by the life cycle hypothesis with home production, suggesting that Chinese pensioners smooth consumption well.

Olafsson and Pagel (2017) revisited the retirement-consumption puzzle to examine how retirement influences household spending and financial structure in Iceland. They used the consumers financial lives data contained in Menig's financial feed to analyse individual spending categories and financial account balances upon entering retirement. (Menig is a financial software aggregation to European banks and financial institution where customers

connect their financial accounts). Individual fixed-effects regressions were used for the estimation. Data covering 2011 to January 2017 was used for the study. The study found a substantial reductions in work-related spending categories. At retirement, individuals spent less on ready-made food, fuel, and clothes and more on health and pharmacy products. However, individuals also spent less on other consumption categories such as sports and activities and fine dining.

Further, Aguila *et al*. (2008) investigated the existence of retirement-consumption puzzle using data on several consumption categories with panel data in the United States. Longitudinal component of the Consumer Expenditure Survey from 1980 to 2000 was used to examine households' consumption patterns when the head of household retires. The study generally found no evidence of retirement-consumption puzzle. Expenditure on nondurable goods did not change at retirement, suggesting that individuals smooth consumption during early years in retirement. But a focus on food expenditure showed a 4% decline in expenditure associated with retirement.

Barrett and Brzozowski (2012) also assessed the decline in grocery and food expenditure by the elderly who retire involuntarily in Australia. The paper investigated whether the fall in food and grocery expenditure at retirement could be explained by unforeseen circumstances such as serious health shocks and long term job loss. An Australian panel data, Household, Income and Labour Dynamics for the period 2001 to 2007 was used for the study. The modelling framework for the estimation was based on canonical model of inter-temporal consumer choice. The study revealed that basic consumption expenditures do not decline for most households when retirement is anticipated. However, when

retirement is involuntary, households experienced a marked decline across basic expenditure categories.

Hurst (2008) also explored facts that have emerged from the recent literature on consumption behaviour during retirement. The paper recounted recent literature that have proven that there is no puzzle with respect to the spending patterns of most households as they transit into retirement and the substantial heterogeneity in spending changes at retirement across consumption categories. For Hurst, the declines in consumption expenditure at retirement for the average household are limited to food and work-related expenditure categories. The paper emphasised that spending in nearly all other categories of nondurable expenditures either remains constant or increases. He added that though food spending may decline during retirement, actual food intake remains constant. The paper also showed that there is substantial heterogeneity across households in the change in expenditure associated with retirement. Much of this heterogeneity, however, could be explained by households involuntarily retiring due to deteriorating health. It concluded that the standard model of life cycle consumption augmented with home production and uncertain health shocks does well in explaining the consumption patterns of most households as they retire.

Most of the papers reviewed under this section tested the validity of the life cycle hypothesis in their respective countries using longitudinal/panel data sets within varied estimation techniques. This paper thus finds it imperative to subject the prediction of the life cycle hypothesis to test in AEE district of Ghana by using cross sectional data set since there seems to be absence of conclusive data on household income and wealth of pensioners in the research district. The study goes a step further by factoring in the effect

of inflation on pre-retirement consumption expenditures of respondents in order to obtain real values on the data set obtained for fair analysis.

2.2.2 Nature of Pensions in Ghana

Kumado and Gockel (2003) conducted a comprehensive assessment of social security system in Ghana. The paper investigated the legal and practical framework of pensions in the country and compared it to best practices in the world. Much emphasis was laid on the SSNIT scheme to determine whether additional benefits could be imbedded in it to improve on pensioners' welfare. Though the paper conceded that no country's pension scheme can be described as perfect considering the unique nature of countries' culture, history and level of development, it recommended the social insurance schemes of Switzerland, Chile and Singapore to Ghana. To ensure the smooth running of SSNIT, the paper recommended that government disassociates itself from the operations of SSNIT but only plays the regulatory role. Other proposals made by the paper were the amendment of SSNIT's constitution to make it more corporate and the creation of a formal body to oversee the Trust's activities.

Darkwa (1997) examined the main features of social security system in Ghana. Issues discussed in the paper covered the coverage of social security schemes, qualification criteria for benefits and administration and financing of social security institutions in the country. Recommendations offered by the paper were that, government should make the effort to extend social security coverage to most Ghanaians, make adjustment to improve the formula used in determining pension benefits and also improve upon pension benefits to reflect current cost of living. Others include encouraging workers to opt for other private pension schemes as well as ensuring prudent investment of social security funds.

Kpessa (2011) in a paper, analysed the development and transformation of retirement income policy in Ghana. The paper recounted the shift in objective of running social security programmes in the colonial time to the present day in Ghana. In the author's mind, the old age income support policies, which focused mostly on the formal labour market, were used to encourage and promote loyalty and efficiency in the colonial civil service rather than addressing old age income security. The post-colonial era witnessed the establishment of provident funds in many establishments and that widened the coverage of social security in the country. There was also the conversion of provident funds into social insurance in the early 1990s with the aim of ensuring that pensioners receive periodic benefits as opposed to one time lump sum payment. The paper saw this as a move to appease the labour unions and workers in general in order to score political points. The implication is that, a well-designed social security programme has the potential to promote labour productivity and also maintain pre-retirement standard of living for Ghanaian pensioners.

Mensah (2013) examined the link between pension contributions and national savings and went ahead to identify the prospects and challenges in the pension industry in Ghana. The study employed an overlapping generation model and used the ordinary least squares to establish the linear relationship between pension contributions and national savings and the Vector Error Correction Model as the estimation technique. The results showed inadequate monthly pension as the main challenge facing pensioners. Also, secondary data used for the study showed a direct correlation between pension contribution and savings. The study finally recommended to the government to stop the delays in paying pension contribution to SSNIT on behalf of employees, make the treatment of aged-related diseases free and

SSNIT should increase the monthly pensions in order to enhance consumption smoothing and enjoyment of improved lifestyles by pensioners in Ghana.

In a study to investigate consumption-pension income disparity by Kunawotor (2013) on pensioners in Accra, it was revealed that about 82% of pensioners spend far in excess of the pension income they earn. The paper assigned reasons for such phenomenon as inadequate pension income and savings as well as socio-economic factors that affect consumption. The paper concluded by recommending to the government and other employers to regularly organise retirement seminars for workers to prepare early for retirement. It again suggested that the minimum pension is set to be equal to the minimum wage and should be adjusted alongside minimum wage reviews.

Most of the above papers looked at the general framework of social security system; particularly SSNIT and suggested ways of improving pensioners' welfare in Ghana. Kumado and Gockel (2003) for instance opened up some of the best practices of social insurance schemes across the world and recommended to the Ghana government to follow suit. What seems missing in the papers reviewed (apart from Kunawotor, 2013) is the estimation of percentage of pensioners who were able to adequately finance their consumption expenditure at retirement and vice-versa. This study resolves this inconclusiveness by establishing the proportion of SSNIT pensioners in the study district who were able to sustain consumption expenditure at retirement.

2.2.3 Effects of Retirement on the Lives of Pensioners

Retirement most at times, comes with a decrease in household income. Kim and Moen (2002) asserted that inadequate incomes and financial problems have accounted for

dissatisfaction during retirement. It is therefore anticipated that, pensioners with a small household income as well as those who experience a greater financial setback during retirement are most likely to experience fall in consumption expenditure.

Beck (1982) reported on the effect of retirement on personal adjustment. The paper recounted that research over the past thirty years concerning the effect of retirement on personal adjustment has resulted in conflicting findings. Some studies reported a negative effect for retirement; others showed no effect at all. The study sought to test the net effect of retirement on happiness with life and analysed an evaluation of retirement in order to discern specific factors that cause lower standard of living with retirement. Logistic multiple regression and ordinary least squares regression were used in the estimation and analysis. Findings produced by the study included: (1) retirement has no significant net effect on happiness with life, (2) Income, health factors and recent widowhood had much impact on consumption level and standard of living of pensioners and (3) low income levels, poor health and unexpected retirement are the main determinants of negative evaluations of retirement.

Kotlikoff, Spivak and Summers (1982) also conducted a study in the United States to examine the adequacy of savings for retirement. The main aim of the study was to investigate the role by social security and private pension savings in consumption at retirement. Data used was the Social Security Administration's Retirement History Survey covering the years 1969, 1971 and 1973. A total of 1,964 retired married couples was used for the study. The outcome revealed that, had it not been the existence of social security and private pensions, the average pensioner would have experienced about 40% reduction in consumption expenditure at retirement. The study also showed that the compulsory

nature of social security to workers led to few pensioners having difficulties in meeting consumption expenditure at retirement. It can thus be deduced from the findings of the paper that, the operation of mandatory pension schemes in countries help pensioners to maintain their pre-retirement consumption expenditure and enjoy relatively, high standard of living.

The above research works on the effects of retirement on pensioners' standard of living examined the adequacy of savings for retirement and the extent to which retirement income affect the general wellbeing of the pensioners. What falls short in the estimation methods of the papers is the exclusion of extra income earned at retirement. This is taken care of by including a variable for other source of income in the model of this study to show whether or not earning extra income would influence expenditure on consumption at retirement.

2.2.4 Determinants of Consumption Expenditure at Retirement

The main reasons in the literature for the drop in consumption expenditure at retirement include low pension income or liquidity problems, changes in preferences due to increased non-market time as well as myopic or time-inconsistent behaviour. Excess consumption and demographic characteristics of pensioners also contribute to the drop in consumption expenditure of the retired (Kunawotor, 2013).

There are a number of factors that affect consumption expenditure of the elderly. These factors are broadly classified as sociological, demographic and economic characteristics. They can also be described as socio-demographic or socio-economic factors. A major determinant of consumption expenditure during retirement according to Lee (2001) is wealth (as a proxy for income). In this case, retirement income (or pension wealth) in the

form of lump sum and monthly pension is regarded as the main source of income at retirement. Lee (2001) further identified other factors that influence consumption expenditure during retirement as age, race, area of residence, household size and accommodation status of the pensioner.

Paulin and Duly (2002) also highlighted similar demographic factors like that of Lee (2001) to have influence on consumption expenditure during retirement. It however included factors like marital status and educational background as additional determinants of consumption expenditure at retirement. The determinants of consumption expenditure during retirement worth highlighting in this study include income (pension wealth), other source of income, age of pensioner, number of dependents, sex, accommodation status and marital status.

Income (Pension wealth)

As indicated in the absolute income hypothesis, income is the principal factor that influence consumption expenditure on nondurable goods of retired households. Variation in income or pension wealth as claimed by Bernheim *et al*. (2001) may be attributed to factors that produce downward, discontinuous jumps in consumption expenditure at retirement. It is against this background that Luengo-Prado and Sevilla (2012) believed that, in instances where individuals do not even prepare adequately for retirement during their working life, there is little reason to expect decline in consumption expenditure when income is not falling.

Other Source of Income

Extra income earned by individuals and households forms part of the stock of financial wealth (income) of the retired. It is regarded as part of non-pension wealth of the pensioner

and also has a direct relationship with consumption expenditure. In the literature, pensioners who are able to supplement their regular source of income from pension schemes through earning income from other sources spend more on nondurable goods relative to those who depend only on pension income (Luengo-Prado & Sevilla, 2012).

Age

With respect to age, some studies have established negative relationship between age and consumption expenditure on nondurable goods and services such as clothing, transportation, rent, utilities and entertainment. Consumption expenditure on health, food prepared at home among others may however increase as one advances in age. Although there may be differences in relationship of the various consumption components with age, aggregate household consumption during retirement has negative relationship with age (Lee, 2001).

Number of Dependents

The number of dependents refers to the number of people the pensioner caters for in terms of average monthly consumption expenditure. The higher the number of dependents a pensioner has, the higher the consumption expenditure on nondurable goods and the more inadequate the pension wealth may become (Ulker, 2008; Kunawotor, 2013).

Sex

This is in respect with whether a pensioner as the household head is a male or a female. In Ghana, a higher proportion of households are headed by males than females. Household heads who are males constitute 69.5% while female household heads make up 30.5% (GSS –GLSS 6, 2014). With regards to AEE district, 52.5% and 47.5% households are headed by males and females respectively (Ghana Statistical Service, 2014). It is thus expected

that, ceteris paribus, male pensioners will spend more on consumption than females. Although the relationship between consumption expenditure at retirement and gender has not been widely researched hence cannot be easily predicted, it is envisaged that considering the Ghanaian cultural setting, consumption expenditure will relates positively with males and inversely with females.

Accommodation Status

This is in connection with whether a pensioner stays in a rented house or does not bear any cost in the house he lives in. The expectation is that pensioners who pay rent will have higher consumption expenditure than those who stay in their own house or pay no rent (Paulin & Duly, 2002).

Marital Status

The effect of marital status on consumption expenditure cannot be easily predicted though there are suggestions that unmarried pensioners spend less on food consumed at home and spend more on housing than pensioners who are married. But generally, pensioners who are unmarried spend less than their married counterparts (Lee, 2001).

Although the reviewed papers have highlighted a number of factors that affect consumption expenditure of pensioners, this study finds it appropriate to eliminate variables like race and area of residence in the estimation technique to suit the jurisdiction under which the research was carried out. Again, income earned at retirement was split into pension income and other source of income which were included in the model of this study. This was necessary to determine the extent to which pensioners who depended only on pension income smooth-out consumption expenditure as against those who earned extra income together with pension income.

In summary, the chapter has reviewed relevant literature to the study. It did this by first looking at the evolution of social security in Ghana and the main social security schemes. Much emphasis was however, laid on the SSNIT scheme due to its direct bearing to the study. The concept of consumption, review of main hypotheses of consumption, role of inflationary expectations on consumption expenditure and the concept of retirement were also dealt with. The final section, the empirical review focused on retirement-consumption puzzle, nature of pensions in Ghana, effect of retirement on the lives of pensioners and determinants of consumption expenditure at retirement.

CHAPTER THREE

METHODOLOGY

This chapter describes the methodology followed in the conduct of the study. It covers a brief description of the study area and discusses the research design, population, sample size and sampling method, data collection instrument, the pilot study and source of data. The remaining sections include theoretical framework and estimation technique for the specific objectives, definition, measurement and expected signs of variables, as well as methods of data analysis.

3.1 The Study Area and Justification for Choice

The study was conducted in Ajumako-Enyan-Essiam, one of the twenty districts in the Central Region of Ghana. Its bordering districts are Asikuma-Odoben-Brakwa, Assin North, Mfantseman, Ekumfi and Gomoa West. The major towns in the district include Ajumako, Mando, Bisease, Breman Essiam, Enyan Denkyira, Sonkwaa, Enyan Abaasa and Enyan Maim. Ajumako is the district capital and the seat of the district administration (Ghana Statistical Service, 2014). The Ghana Statistical Service classifies the district as rural.

Total population of the district according to the 2010 Population and Housing Census Report is 138,046 (Ghana Statistical Service, 2014). This constitutes 46.7% males and 53.3% females. Majority of the people of AEE district making 68.1% live in rural areas while only 31.9% live in urban centres. Furthermore, the total household population for the district is 136,633 who live in 35,106 households. Out of this, 32.7% live in the urban localities while the remaining 67.3% are living in the rural localities. The average

household size of the district is 3.9 (3.8 for the urban areas and 4.0 for the rural areas). With regards to household heads, 52.5% and 47.5% households are headed by males and females respectively. The dependency ratio is 97.8%; making it the highest in the region. The literacy rate in the district is 76% which is below the regional percentage of 78.2% (Ghana Statistical Service, 2014).

Statistics from the Ghana Statistical Service's (2014) 2010 Population and Housing Census; the District Analytical Report indicates that, 42% of the population 12 years and older are married while the rest are not. Farming is the predominant economic activity of the district's people. The public sector employs an insignificant number of people in the district (only 4.5%) while the rest are either self-employed, casual workers or domestic workers.

The motivation behind the choice of AEE district as the study area was due to its rural nature and its categorisation as being relatively poor district in Ghana. The district is ranked 160th poor district in Ghana with an estimated number of poor persons being 15,986 (Ghana Statistical Service, 2015). Also, few related studies on retirement-consumption puzzle such as the one by Kunawotor (2013) were concentrated in urban centres which may have different socio-demographic and cultural factors with rural districts. The intention for choosing the study area was to investigate whether or not consumption expenditure on nondurable goods for pensioners in rural districts like AEE is consistent with the prediction of the life cycle hypothesis.

3.2 Research Design

Research design is a general plan for implementing a research strategy (Pandey & Pandey, 2015). It specifies whether the study will involve groups or individual subjects, will make comparisons within a group or between groups, or specifies how many variables will be included in the study. A research design explains how data is collected, types of instruments used, and the intended approach for analysing the data (Gravetter & Forzano, 2009). This study adopted the cross sectional descriptive research design and employed the quantitative approach in determining the extent of consumption smoothing during retirement in the study area. The adopted research design allowed information to be elicited from respondents at one point in time which provided insight to statistically describe/analyse the extent of consumption smoothing by pensioners. It is also cost effective as cross sectional design gave room to collect and compare a number of variables such as socio-economic or socio-demographic factors related to the study at a time (Pandey & Pandey, 2015).

For the purpose of this study, information on consumption expenditure before and at retirement was obtained to predict whether or not consumption expenditure on nondurable goods remains unchanged at retirement. The study focused on pensioners in AEE district in the Central Region of Ghana. The study used pensioners under SSNIT who were once employed in either the public or private formal sectors and had been paid their lump sum benefits and also, receive monthly pension.

The adoption of the quantitative approach was to enable the use of numerical values in measuring variables for individual respondents that were subjected to statistical analysis and interpretation. The main objective of the study was to investigate whether or not

consumption expenditure on nondurable goods changes at retirement. Data from the field was used to predict consumption smoothing behaviour of the pensioners.

3.3 Population

The group of people targeted and to which the study intended generalising its findings to are all pensioners in AEE district. However, due to time and resource constraints, the study used only SSNIT pensioners in AEE district. Available information from the SSNIT Pensioners' Association in the study area puts the total number of SSNIT pensioners at about 425. The population of interest to the study; that is those aged 56 to 64 years stood at about 265 pensioners.

The population was chosen based on the fact that the SSNIT pension scheme is the most extensive pension scheme and covers most formal, private formal and now informal sector workers in Ghana. Also, SSNIT pensioners earn lump sum and monthly pension of which the study required to make its analysis.

3.4 Sample Size and Sampling Method

The study required that respondents provide information regarding expenditures on selected nondurable goods before and at retirement. Only SSNIT pensioners who were household heads and aged 56 to 64 years at the time of the questionnaire administration were considered in the sampling process for the study. This included both workers who retired mandatorily and voluntarily. The decision to restrict the sample to pensioners in their early years of retirement was intended to reduce memory loss on pre-retirement consumption expenditures.

Given the population of interest (that is; those aged 56 to 64 years being 265 pensioners), a simplified scientific formula suggested by Yamane (1967) was followed to calculate the sample size for the study. The formula is given as:

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

Where;

n is the required sample size,

N is the size of the population (which is 265 in this case) and

e is the level of precision/margin of error which is 0.05.

Applying the formula to generate the sample size for the study yields:

$$\mathrm{n} = \frac{\mathrm{N}}{1+\mathrm{N(e)}^2} = \frac{265}{1+265(0.05)^2} = 159.3985 \text{ (correct to 4 d. p.)}$$

This means that the sample size for the study ought to be 159 pensioners. However, it became necessary to consider the possibility of non-response of questionnaire by some respondents. To deal with this, the sample size was increased to 164 pensioners to account for a possible attrition of respondents (incorrect/incomplete response of questionnaires).

Further, a rule proposed by Green (1991) was applied to confirm the appropriateness of the sample size obtained with respect to the number of variables included in the hypothesised model for multiple regression analysis. According to Green (1991), the sample size, *n* must be greater than 50 + 8p (where p is the number of independent variables). In this study, seven explanatory variables were used in the empirical model and according to the equation, the sample size of the study should be > 50 + 8 x 7, giving the result as 106. So

the sample size (164 respondents) is greater than 106 [that is; (n = 164) > 106]. It can therefore be said that the sample size in this study adequately satisfies the aforementioned requirement and thus, satisfactory for multiple regression analysis.

The selection of the determined sample being 164 respondents was done using simple random sampling during pensioners' meetings in the district of study. Simple random sampling method was adopted in order to offer equal opportunity to each pensioner in the population to be selected. The lottery method was employed in carrying out this task.

3.5 Data Collection Instrument

Data used for the study was collected through the use of questionnaire. Information needed for the study required respondents to provide expenditure on selected nondurable goods and services, sources of income such as monthly pension, lump sum payments, extra income earned from various sources among others. The use of questionnaire was found to be more appropriate tool for soliciting such information for the study. Again, the use of questionnaire was meant to offer respondents ample time and the freedom to feel free in sharing relevant information the study required (Pandey & Pandey, 2015). Questionnaires were directly distributed to the respondents. One week period was allowed after which the collection was done.

3.5.1 Questionnaire Development

The questionnaire developed for the study had four sections: Sections A, B, C and D. Background information of respondents formed part of Section A. There were eight items in this section. The section solicited information on sex, age, marital status, number of dependants, accommodation status, age retired and reason for retirement. Section B

comprised seven items which sought to elicit information on total pension wealth of respondents. This included amounts received as lump sum and monthly pension.

The third section required respondents to indicate average expenses made on selected nondurable goods and services before and at retirement. Consumption expenditures on ten itemised nondurable goods were constructed for the study adopting what the Ghana Statistical Service used to conduct the Ghana Living Standards Survey Round 6. To ensure accuracy, the expenditure components were put in two different tables. The first table sought information on daily expenses on Food and Non-alcoholic beverages, Alcoholic beverages and Tobacco, Communication and Transport. The second table contained monthly expenses on Health, Electricity bill, Water, Gas, firewood, charcoal and other household fuel, Clothing and Recreation and culture.

The last section elicited information concerning other sources of income earned by pensioners apart from the regular monthly pension. These sources included Rental income, Remittances from children and relatives , Income from farms, Income from operating shops, Income from operating corn mill, ‘’fufu’’ pounding machines, etc., Income from rearing livestock, poultry, fish farm, etc., Income from operating transport business and Interest earned on savings, fixed deposits, share dividends as well as other income sources specified by respondents.

3.6 Pilot Study

The questionnaire for the study was pre-tested with thirty SSNIT pensioners in Enyan Denkyira, a town in the study area within February 2019 (three weeks before the collection of data for the main study). Hassan, Schattner and Mazza (2006) define pilot study as a

small study to test research protocols, data collection instruments, sample recruitment strategies and other research techniques in preparation for a main study. The pilot study was done to identify potential problem areas and deficiencies in the research instrument before use in the main study. The intention was to ensure that the questionnaire items accurately addressed the research questions and tested whether the questionnaire was comprehensive and appropriate, and that the questions were well defined and presented in a consistent manner. The pilot testing was equally important to detect possible flaws in the measurement process (such as ambiguous instructions and inadequate time limits) and the respondents' willingness to participate in the study (Pandey & Pandey, 2015).

3.7 Source of Data

The study relied solely on primary data collected from SSNIT pensioners in the study district. According to Hox and Boeije (2005), primary data are collected for specific research problem at hand, using procedures that fit the research problem best. Data for the study which was collected in March 2019 was sourced from people in early retirement and it covered background information of respondents and total wealth from SSNIT comprising lump sum and monthly pension. Other information were average monthly consumption expenditures on selected nondurable goods as well as extra income earned monthly apart from pension income.

3.8 Theoretical Framework and Estimation Technique

3.8.1 Theoretical Framework

The general economic theory behind the study is the theory of consumption. The objective regarding whether or not consumption expenditure on nondurable goods changes at

retirement was guided by the life cycle hypothesis (LCH) as developed by Modigliani and Brumberg (1954). The LCH is a consumption-smoothing hypothesis in one's lifetime. The basic idea of the hypothesis is that people make intelligent choices about how much they want to spend at each stage in life subject to the resources available over their entire lifetime. By building up and running down assets, working people can make provision for their retirement, and more generally, tailor their consumption patterns to their needs at different ages, independent of fluctuations in their income level at each age (Deaton, 2005). The analysis on the determinants of consumption that influence expenditure on nondurable goods was also guided by the consumption theory as reviewed in the literature.

3.8.2 Methodology for the Specific Objectives

The study before dealing with the methodology for the specific objectives, adjusted the pre-retirement consumption expenditures by respondents for inflation. This was necessary to obtain real consumption expenditures for fair analysis of the study's results. The process for the adjustment is explained in section 3.8.2.1 as follows:

3.8.2.1 Adjustment of Pre-retirement Consumption Expenditure for Inflation

In order to cater for the effect of inflation, the pre-retirement expenditures incurred by respondents were adjusted for inflation using Consumer Price Index (CPI). Out of the 164 respondents in the study, 35, 46, 46 and 37 pensioners retired in the years 2015, 2016, 2017 and 2018 respectively. The annual CPI's for the respective years were thus, used for the inflation adjustment. The average CPI's for January, February and March 2019 was used as the base year upon which all the four years' expenditures were adjusted for inflation. Basic formula used for the adjustment is given as:

Real Expenditure in Current Year = Expenditure in Previous Year x $\frac{\text{Current Year's CPI}}{\text{Previous Year's CPI}}$

The total pre-retirement expenditures for all the expenditure categories indicated on the questionnaire were first determined for each of the four years (that is; 2015, 2016, 2017 and 2018). Each year's total expenditure was then adjusted for inflation using the above-stated formula. Total pre-retirement expenditure per pensioner (the average expenditure before retirement per head) was thus arrived at by dividing the sum of the real expenditures for the years 2015, 2016, 2017 and 2018 by the total respondents, which is 164. By the adjustment of the pre-retirement expenditures for inflation, real expenditure values were obtained from the nominal pre-retirement expenditures provided by respondents for the analysis in chapter four of this report.

3.8.2.2 Change in Consumption Expenditure at Retirement

The first objective of the study was to investigate whether or not consumption expenditure of nondurable goods changes at retirement. In achieving this, the study followed a simple algebra by Battistin *et al*. (2009) in finding the quantity of interest which is change in consumption expenditure as follows: Letting (C_1, C_0) to represent current consumption expenditure and pre-retirement consumption expenditure respectively, the difference was found using equation (3.1) which is specified as:

$$\beta = C_1 - C_0 \quad \text{.....(3.1)}$$

Where β represents the change in consumption expenditure.

Generally, consumption is smoothed when the change in consumption expenditure, β equals zero (Battistin *et al*., 2009). If the value of β is positive, it implies a rise in

consumption expenditure at retirement and when negative, it indicates a fall in consumption expenditure implying that consumption is not smoothed at retirement. The same method was used to investigate the extent of consumption smoothing for pensioners with other source of income and those without it.

3.8.2.3 Sustainability of Consumption Expenditure at Retirement

The second objective of the study was to examine the extent to which pensioners are able to sustain consumption expenditure on nondurable goods at retirement. A methodological approach by Hamermesh (1984) was followed to answer this question. The consumption expenditure measure represented by C* was compared to income which is denoted by Y*. Where the ratio of average consumption expenditure to income (C*/Y*) is equal to 1, it means that consumption expenditure is in equilibrium with income. The implication is that, pensioners spend all their pension wealth on nondurable goods. If $C^*/Y^* < 1$, it implies that consumption expenditure is sustainable but when $C^*/Y^* > 1$, it implies consumption expenditure being unsustainable with available income. The expenditure sustainability analysis was done in general and then extended to pensioners having other source of income and those depending solely on pension wealth.

3.8.2.4 Model Estimation for Determinants of Consumption Expenditure

The third objective intended analysing whether some determinants of consumption (pension income/wealth, other source of income and demographic variables) significantly influence consumption expenditure on nondurable goods at retirement. The analysis was made using a derived empirical model based on simple structural model outlined as follows:

(a) Simple Structural Model

Feldstein (1974) in an attempt to assess the effect of social security on consumption expenditure adapted the specification of the consumption function used by Ando Modigliani (1963) and added a social security wealth variable. Estimation technique used in the study was Ordinary Least Squares. The derivation of the consumption function used consumption expenditure (C_t) as the dependent variable with permanent income (Y_t) and the stock of household wealth excluding social security wealth (W_{t-1}) as the predictors. The function used is stated as:

$C_t = \beta_0 + \beta_1 Y_t + \beta_2 W_{t-1}$ …….. (3.2)

Where;

C_t is consumption expenditure

Y_t is permanent income

W_{t-1} is the stock of household wealth excluding social security wealth

A social security wealth variable (SSW) meant to predict the dependent variable was then introduced into the model as follows:

$C_t = \beta_0 + \beta_1 Y_t + \beta_2 W_{t-1} + \beta_3 SSW$……..… (3.3)

In a more recent study, Kunawotor (2013) specified a hypothetical consumption function to determine factors that significantly affect consumption expenditure of pensioners in the Accra metropolis. The function is stated as follows:

$C = \beta_0 + \beta_1 PB + \beta_2 AGE + \beta_3 DEP + \beta_4 SEX + \beta_5 ACC + \beta_6 MAR + \beta_7 JOB + \varepsilon$…….... (3.4)

As appearing in equation (3.4), the paper used pension benefits (PB), age of the pensioner (AGE), number of dependents of the pensioner (DEP), sex of the pensioner (SEX), residential occupancy status of the pensioner (ACC), marital status (MAR) and employment status of the pensioner (JOB) to predict consumption expenditure within Ordinary Least Squares estimation technique.

(b) Empirical Model

This study in attempting to answer the third research question which was connected to analysing the determinants of consumption that influence expenditure on nondurable goods at retirement, used a hypothetical consumption function similar to that of Kunawotor (2013). However, employment status of the pensioner as a predictor in Kunawotor's (2013) model was replaced by other source of income. This was done in order to incorporate all forms of income pensioners get from post-retirement jobs (such as operating shops, farming, etc.) and also benefits and remittances from children and other people in the model. Also, the main policy variable, pension benefits (PB) was renamed pension wealth (PenWealth) to encompass both monthly pension and lump sum. The model is thus specified as follows:

$$C = \beta_0 + \beta_1 \text{PenWealth} + \beta_2 \text{OSY\_no} + \beta_3 \text{AGE} + \beta_4 \text{DEP} + \beta_5 \text{SEX\_male} + \beta_6 \text{AS\_rented} + \beta_7 \text{MS\_married} + U \quad (3.5)$$

Where;

C indicates current consumption expenditure

PenWealth indicates pension wealth from SSNIT

OSY_no indicates category of pensioners without other source of income

AGE indicates age of the pensioner

DEP indicates the number of dependents

SEX_male indicates the male dummy for sex of the pensioner

AS_rented indicates the rented dummy for residential arrangement status of the pensioner

MS_married indicates the married dummy for marital status of the pensioner

β_0 is the constant term

β_1, β_2, β_3, β_4, β_5, β_6 and β_7 are the coefficients of determinants of consumption and

U is the disturbance term.

3.9 Definition, Measurement and Expected Signs of Variables

The variables used in this study especially in the model estimation are explained below. Some of them are explained purposely to suit the study.

(a) Consumption expenditure (C): This variable refers to the average monthly expenditure the pensioner currently spends on nondurable goods for his entire household including himself. Consumption expenditure was used as the dependent variable in the estimation of the model in equation (3.5). The variable, 'C' was measured by aggregating expenditures on ten nondurable goods used in the study namely; Food and Non-Alcoholic Beverages, Alcoholic Beverages and Tobacco, Communication, Transport, Health, Electricity, Water, Household Fuel, Clothing, Recreation and Culture as well as other specified expenditures.

(b) Pension wealth (PenWealth): This is the total pension payments from SSNIT to the pensioner. 'PenWealth' is a continuous variable which was measured by summing up the monthly pension received by respondents and lump sum amount converted to monthly basis. The conversion of the lump sum was done by dividing the total lump sum received by the number of months spent in retirement. It is expected that pension wealth will have positive sign with consumption expenditure of pensioners, ceteris paribus.

(c) Other sources of income (OSY_no): This variable generally referred to extra income some respondents earned from other sources aside pension wealth. It was the aggregate of eight different sources which are rental income, remittances from children and relatives , income from farms, income from operating shops, income from operating corn mill, fufu pounding machines, etc., income from rearing livestock, poultry, fish farm, etc., income from operating transport business, interest earned on savings, fixed deposits and share dividends. The variable was collected as a continuous variable. Pensioners who subscribed to other source of income (OSY_yes) were categorised as 1 while those who did not subscribe to it (OSY_no) were categorised as 2. The category 'OSY_no' was used as a predictor in the model estimation. The variable (OSY_no) is expected to have negative sign. This is because it is believed that pensioners with no extra income have low purchasing power in order to spend more on consumer goods relative to those with extra income (Luengo-Prado & Sevilla, 2012).

(d) Age (AGE): The variable, 'AGE' in this study measured how old the pensioner was in years at the time of the questionnaire administration. It is a continuous variable and expected to have positive sign. This may be so due to the constrained nature of consumption of the aged. According to Borsch-Supan and Stahl (1991), the elderly finds it difficult to

consume much food as compared to the young and are also restricted by frequent travels due to poor health. Pensioners might also have spent greater percentage of their pension wealth, especially the lump sum as they advance in age. All these coupled with the fact that as pensioners grow older, they become weak to engage themselves in post-retirement jobs in order to earn extra income to supplement pension income contribute to the inverse relationship between age and consumption expenditure.

(e) Number of Dependants (DEP): This variable intended measuring the number of people the pensioner caters for in his/her household in terms of consumption expenditure. The variable was collected as a continuous variable but was categorised as '1' if no dependents, '2' if 1-3 dependents, '3' if 4-6 dependents, '4' if 7-9 dependents and '5' if more than 9 dependents. From the literature, the higher the number of dependents a pensioner has, the higher the consumption expenditure, ceteris paribus (Ulker, 2008). Hence the variable 'DEP' is expected to have positive sign.

(f) Sex (SEX_male): This refers to the gender status of the pensioner. It measured the proportion of male respondents to female respondents in the study. It was dummied as 1, for male pensioners and 0, for female pensioners. The dummy for male was used in the estimation of the model in equation (3.5).

(g) Accommodation status (AS_rented): This refers to the residential arrangement of pensioners as respondents at the time of the questionnaire administration. It indicated whether a pensioner lived in a rented house or unrented house. This variable was dummied as 1, for a pensioner living in a rented house and 0, for living in unrented house. The dummy for living in a rented house was used as a predictor in the model estimation in equation (3.5).

(h) Marital status (MS_married): This variable was used to determine whether a pensioner was married or unmarried at the time of responding to the questionnaire. It was thus dummied as 1, for a pensioner who was married and 0, for a pensioner who was unmarried. The married dummy was used in the model estimation in equation (3.5).

The classification of the independent variables used in the OLS regression in equation (3.5) and their expected signs are summarised in Table 3.1 below.

Table 3.1: Classification of the Independent Variables Used in the OLS Regression and Their Expected Signs

VARIABLE NAME	CLASSIFICATION	EXPECTED SIGN
PenWealth: Monthly pension wealth of respondents	Continuous variable	+
OSY_no: Other source of income to the pensioner (1: Yes, 2: No)	Categorical variable	-
AGE: Age of the pensioner	Continuous variable	-
DEP: Number of dependents (1: None, 2: 1-3, 3: 4-6, 4: 7-9, 5: Above 9)	Categorical variable	+
SEX_male: Gender of the pensioner (1=Male, 0= Female)	Dummy variable	+/-
AS_rented: Accommodation status of the pensioner (1=Rented house, 0=Unrented house)	Dummy variable	+/-
MS_married: Marital status of the pensioner (1= Married, 0=Unmarried)	Dummy variable	+/-

3.10 Methods of Data Analysis

The questionnaires gathered from the respondents were first coded serially before the responses were entered into Statistical Pack for Social Sciences (SPSS) software. The responses were then exported to STATA software for further organisation and analysis of the study's results.

Frequencies and percentages in the form of tables as well as charts were employed to classify results on variables such as the background characteristics of respondents (e.g. age, number of dependents, sex, etc.) and other sources of income which aided discussion of the results. Computed mean scores were used to analyse results on the composition of consumption expenditure and that of the first research question about how the overall consumption expenditure on nondurable goods change at retirement. With regards to the second research question on the extent to which pensioners are able to sustain consumption expenditure on nondurable goods, frequency with percentage tables and chart were used to present the results for interpretation and discussion.

For the third research question on how the main determinants of consumption influence consumption expenditure on nondurable goods at retirement, STATA was used to run regression to help analyse how the main determinants of consumption influence consumption expenditure of nondurable goods. The estimation technique used was Simple Ordinary Least Squares. On the adjustment of pre-retirement expenditure by the respondents, nominal expenditures on nondurable goods were imported onto the Microsoft Excel spreadsheet for the task.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION

This chapter presents and discusses results of the study. The first part deals with the presentation and discussion of results on the background characteristics of respondents. The second part looks at results on whether or not consumption expenditure on nondurable goods changes at retirement, the extent to which pensioners are able to sustain consumption expenditure and finally analysis on whether some determinants of consumption (pension income/wealth, other source of income and demographic variables) significantly influence consumption expenditure on nondurable goods at retirement.

4.1 Background Characteristics of Respondents

The background characteristics of respondents presented for discussion in this section include the distribution of age, number of dependants, sex, accommodation status, and marital status of pensioners.

Age Distribution of Respondents

Age as a variable measured how old (in years) a pensioner was as at the time of responding to the questionnaire. Results on how age as a background characteristic of respondents is distributed in the study are summarised in Table 4.1.

Table 4.1: Age Distribution of Respondents

Age	Frequency	Percentage
58 years	4	2.4
59 years	2	1.2
60 years	5	3.1
61 years	37	22.6
62 years	42	25.6
63 years	45	27.4
64 years	29	17.7
Total	**164**	**100.0**

Source: Author's Fieldwork, 2019

The age distribution of respondents as depicted in Table 4.1 indicates that 4 pensioners representing 2.4% were aged 58 years, only 2 pensioners representing 1.2% were aged 59 years, 5 pensioners representing 3.1% were aged 60 years while 37 pensioners representing 22.6% were aged 61 years. Others include 42 pensioners representing 25.6% who were 62 years, 45 pensioners representing 27.4% who were 63 years and finally 29 pensioners representing 17.7% who were aged 64 years. The average age for the total respondents was approximately 62.2 years. The age distribution implies that a greater number of pensioners (93.3%) in the study were within the ages of 61-64 years while about 6.7% of them (who were likely to have retired voluntarily), were found within the age bracket 58-60 years.

Number of Dependents

Results of the study on the number of dependents catered for in terms of consumption expenditure by respondents are summarised in Table 4.2.

Table 4.2: Distribution of Number of Dependents

Number of dependents	Frequency	Percentage
None	24	14.6
1-3	72	43.9
4-6	61	37.2
7-9	5	3.0
Above 9	2	1.2
Total	**164**	**100.0**

Source: Author's Fieldwork, 2019

Results as shown in Table 4.2 indicate that a greater number of pensioners (about 85.4%) still catered for dependents including their spouses. The result indicates that 72 pensioners representing 43.9% of the total respondents catered for dependents between 1 to 3, 61 pensioners representing 37.2% had dependents ranging from 4 to 6, 5 pensioners representing 3.0% had dependents ranging from 7 to 9 while 2 pensioners representing 1.2% had more than 9 dependents. A total number of 24 pensioners representing 14.6% of total respondents had no dependents to cater for. The average number of dependents is approximately 3.1 persons.

Implication of the results is that since majority of pensioners still catered for dependents, consumption expenditure is likely to be relatively high (Ulker, 2008). For that matter, most pensioners may find it difficult to adequately meet their consumption demands in the event of inadequate pension wealth.

Sex Distribution of Respondents

The results on distribution of sex, the variable that measured the proportion of male pensioners to female pensioners used in the study are summarised in Table 4.3.

Table 4.3: Sex Distribution of Respondents

Sex	Frequency	Percentage
Male	128	78.0
Female	36	22.0
Total	**164**	**100.0**

Source: Author's Fieldwork, 2019

The ratio of male to female respondents as presented in Table 4.3 indicates that, the number of male pensioners were more than thrice the female pensioners sampled for the study. Out of the total of 164 respondents, 128 pensioners representing 78.0% were males while 36 pensioners representing 22.0% were females. The results reflect the fact that male pensioners outweigh the female pensioners in Ghana (SSNIT, 2018) and that, ceteris paribus, male pensioners are expected to spend more on household consumption than their female counterparts considering the Ghanaian cultural setting.

Accommodation Status of Respondents

Results on the residential arrangement of pensioners as respondents in the study are presented in Table 4.4.

Table 4.4: Distribution of Accommodation Status of Respondents

Accommodation status	Frequency	Percentage
Rented house	56	34.1
Unrented house	108	65.9
Total	**164**	**100.0**

Source: Author's Fieldwork, 2019

This variable, accommodation status sought to find out how the residential arrangement of respondents is distributed. Results as presented by Table 4.4 indicate that 56 pensioners representing 34.1% lived in rented houses while as many as 108 pensioners representing 65.9% lived in unrented houses such as in their own houses, family houses or other forms of residence like staying with friend and in mission houses. The results imply that the 34.1% of the respondents who spent on rent are more likely to incur high consumption expenditure at retirement as compared to the remaining 65.9% respondents who did not spend on rent as (Paulin & Duly, 2002).

Distribution of Marital Status of Respondents

The summary results on marital status, which is whether a pensioner was married or not at the time of the study are shown in Table 4.5.

Table 4.5: Marital Status of Respondents

Marital status	Frequency	Percentage
Married	123	75.0
Unmarried	41	25.0
Total	**164**	**100.0**

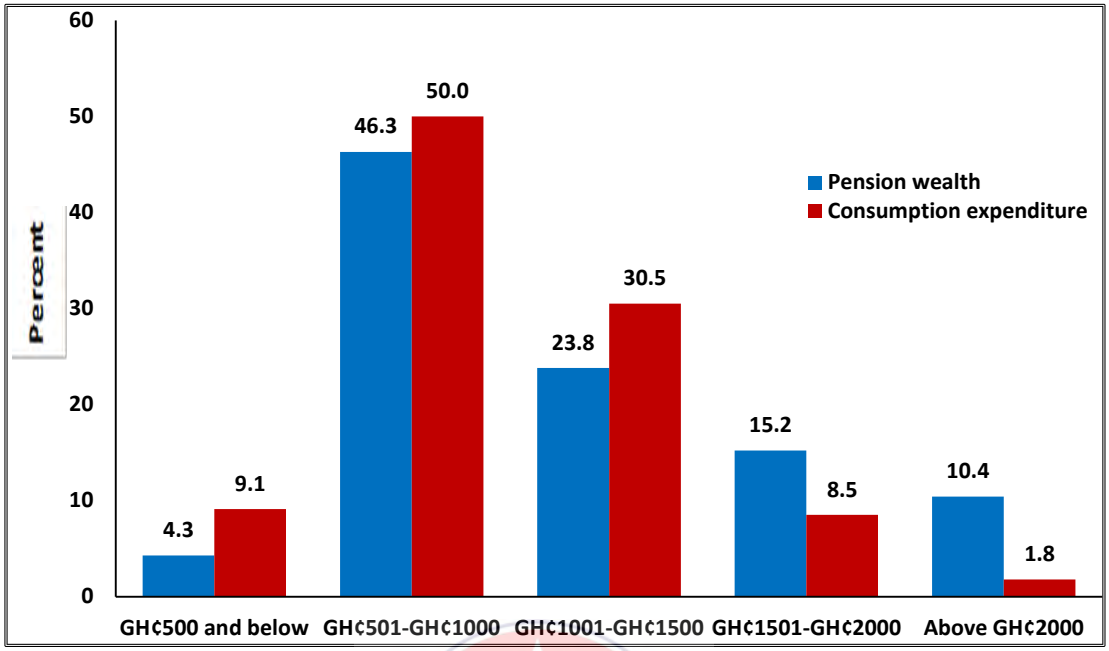
Source: Author's Fieldwork, 2019

Results of the study on marital status of respondents as presented by Table 4.5 indicate that three-quarters of the total respondents (75.0%) were married while one-fourth (25.0%) of them were unmarried. The implication of the result is that since majority of the respondents are married and that they have at least an extra mouth to feed, they are more likely to spend more on consumer goods as compared to the unmarried pensioners who constituted only 25.0% of the total respondents.

4.2 Distribution of Pension Wealth and Consumption Expenditure

This section presents and discusses how pension wealth and current consumption expenditure on nondurable goods are distributed among respondents in the study. Pension wealth as a variable measured the total income that pensioners received monthly from SSNIT. It was the summation of monthly pension and lump sum amount converted on monthly basis. Consumption expenditure on the other hand, is the total expenditure incurred monthly by respondents at retirement. The summary results on these variables are presented by Figure 4.1.

Figure 4.1: Distribution of Pension Wealth and Consumption Expenditure



Source: Author's Fieldwork, 2019

Figure 4.1 summarises how pension wealth and consumption expenditure are concurrently distributed over five range of amounts in Ghana cedis. The distribution of pension wealth as represented by the blue bars shows that 4.3% of the total respondents earned GH₵500 or below in a month, almost half of the respondents (46.3%) earned between GH₵501 and GH₵1000 while 23.8% pensioners earned between GH₵1001 and GH₵1500. Others include 15.2% pensioners who earned monthly income between GH₵1501 and GH₵2000 and 10.4% pensioners were found to have earned above GH₵2000. With respect to distribution of consumption expenditure, 9.1% of the pensioners spent GH₵500 or less within a month, exactly half of them (50.0%) incurred consumption expenditure between GH₵501 and GH₵1000 while 30.5% pensioners spent within GH₵1001 and GH₵1500. The rest include 8.5% pensioners who incurred consumption expenditure ranging from GH₵1501 to GH₵2000 while only 1.8% respondents spent above GH₵2000.

From the graph and the analysis, most pensioners (with the exception of those within the last two categories, that is; GH₵1501-GH₵2000 and Above GH₵2000) had their consumption expenditure exceeding their pension wealth. The implication is that most SSNIT pensioners in the research district spent far more than their pension wealth which agrees with the revelation of Kunawortor (2013) that majority of pensioners spend far more than their total income from SSNIT.

4.3 Composition of Consumption Expenditure

This section presents and discusses results on the components of monthly pre-retirement and post-retirement expenditures incurred by respondents on nondurable goods and services. It must be noted that the pre-retirement expenditures were adjusted for inflation (as explained in the methodology chapter) thus, making expenditures real values. The summary results are displayed in Table 4.6.

Table 4.6: Composition of Consumption Expenditure

Expenditure components	Mean expenditure before retirement		Mean expenditure at retirement		% change in cons. expend.
	Amount (GH₵)	Percentage distribution	Amount (GH₵)	Percentage distribution	
Food and non-alcoholic beverages	757.12	59.5	582.90	59.2	-23.0
Alcoholic beverages and tobacco	18.13	1.4	7.13	0.7	-60.7
Communication	73.90	5.8	55.12	5.6	-25.4
Transport	85.45	6.7	57.29	5.8	-33.0
Health (e.g. hospital expenses, drugs, etc.)	69.18	5.4	80.61	8.2	16.5
Electricity	42.40	3.3	34.99	3.6	-17.5
Water	28.13	2.2	22.75	2.3	-19.1
Gas, firewood, charcoal and other household fuels	52.03	4.1	42.02	4.3	-19.2
Clothing (attires, footwear)	69.67	5.5	45.72	4.6	-34.4
Recreation and culture	14.05	1.1	7.21	0.7	-48.7
Other costs	62.90	4.9	48.98	5.0	-22.1
Total	**1272.96**	**100.0**	**984.73**	**100.0**	

Source: Author's Fieldwork, 2019

The components of consumption expenditure as depicted by Table 4.6 is the aggregate mean expenditures on ten item categories including other specified costs. This include expenditures on food and non-alcoholic beverages, alcoholic beverages and tobacco, communication, transport, health, electricity, water, gas and other household fuels, clothing and recreation and culture. The mean expenditure before retirement was approximately GH₵1,272.96 while the post-retirement mean expenditure was GH₵984.72. Food

constituted more than half of the total consumption expenditure. It constituted 59.5% and 59.2% of total expenditure before retirement and at retirement respectively. The second highest expenditure before retirement was on transport which made up 6.7% of total pre-retirement expenditure. Transport expenditure however fell hugely by 33.0% prior to retirement from GH₵85.45 to GH₵57.29. The second highest expenditure at retirement after food was however, on health.

With expenditure on alcohol and tobacco, pensioners averagely spent GH₵18.13 before retirement but this dropped significantly by 60.7% to GH₵7.13 at retirement. The pre-retirement expenditures on electricity and water being GH₵42.40 and GH₵28.13 respectively, marginally dropped by 17.5% to GH₵34.99 and by 19.1% to GH₵22.75 respectively during retirement. Also, expenditures on communication, household fuel, clothing and recreation experienced downward changes at retirement from GH₵73.90 to GH₵55.12, GH₵52.03 to GH₵42.02, GH₵69.67 to GH₵45.72 and GH₵14.05 to GH₵7.21 respectively. Expenditure on other items specified by respondents (e.g. expenses of toiletries, haircuts, cosmetics, etc.) also decreased by 22.1% margin from GH₵62.90 to GH₵48.98. It was only expenditure on health that saw an increment during retirement from GH₵69.18 to GH₵80.61, representing 16.5% rise. The analysis in all confirms the findings by Olafsson and Pagel (2017) that at retirement, individuals spent less on food, household fuel, and other consumption items like clothes, alcohol among others and more on health and pharmacy products.

4.4 Change in Consumption Expenditure at Retirement

In order to determine whether or not consumption expenditure on nondurable goods is smoothed at retirement depends on the change in consumption expenditure at retirement. The change in consumption expenditure was computed using the means of consumption expenditure before and at retirement. It is worth noting that both expenditures before and at retirement are real values since the pre-retirement expenditures were adjusted for inflation. The summary results on change in consumption expenditure during retirement are presented in Table 4.7.

Table 4.7: Change in Consumption Expenditure at Retirement

Monthly consumption expenditure	Mean (GH₵)	Minimum (GH₵)	Maximum (GH₵)
Before retirement	1272.96	531.00	2647.00
At retirement	984.73	280.00	2400.00

Source: Author's Fieldwork, 2019

Results from Table 4.7 show that the minimum expenditure incurred before retirement was GH₵531.00 while the maximum expenditure before retirement was GH₵2,647.00. Similarly, the minimum and maximum expenditures at retirement were GH₵280 and GH₵2,400.00 respectively. The mean consumption expenditure before retirement was approximately GH₵1,272.96 while the monthly mean expenditure at retirement was approximately GH₵984.73.

The change in consumption expenditure at retirement was determined using equation (3.1) as specified in the methodology chapter. Given the pre-retirement consumption expenditure as GH₵1,272.96 and the current consumption expenditure as GH₵984.73, the

resultant change in consumption expenditure in monetary terms becomes GH₵288.23 (negative), found by subtracting GH₵1,272.96 from GH₵984.73.

The result thus, signifies a drop in consumption expenditure on nondurable goods by approximately 22.6% at retirement. This implies that the prediction of the life cycle hypothesis that consumption should be smoothed in one's entire lifetime is not the case in AEE district. In other words, the retirement-consumption puzzle cannot be retired in the study area just yet. After all, the puzzle is about individuals not being able to plan for expected reduction in income (Olafsson & Pagel, 2017).This finding is consistent with the result produced by Battistin *et al*. (2009) and Li *et al*. (2015) that retirement usually induces drop in total nondurable expenditure.

4.4.1 Test for Significant Difference of Change in Consumption Expenditure at Retirement

This section sought to examine the difference between consumption expenditure before and at retirement with respect to change in consumption expenditure at retirement. To realise this, dependent samples t-test (also known as paired samples t-test) was deemed appropriate for the analysis. The dependent samples t-test was utilised in the analysis based on the assumption that the test determines whether there is a statistically significant difference between the means in two related groups (in this case, consumption expenditure before and at retirement by the same pensioners). The dependent variable here is Change in Consumption at Retirement (CCR). The results are presented in Table 4.8.

Table 4.8: Results of Dependent T-Test Comparing Significant Difference between Consumption Expenditure before and at Retirement

Dep. Variable	Variable	Mean	SD	Df	Cal.t-value	p-value	Remarks
Consumption expenditure	Before retirement	1272.96	5.431	162	-2.543	0.001	Significant (differences exist)
	At retirement	984.73	4.923				

$p < 0.01$, N=164, Key: df=Degrees of Freedom, M=Mean, SD=Standard Deviation, N=Sample Size

Source: Author's Fieldwork, 2019; Computation using SPSS

Results of the dependent sample t-test comparing significant difference between consumption expenditure before and at retirement with respect to their change in consumption expenditure at retirement is presented in Table 4.8. The descriptive results as shown in Table 4.8 (means and standard deviation) portray that there were some differences in mean scores of the dependent variables with respect to their change in consumption expenditure at retirement. From the results, consumption expenditure before retirement *(M=1272.96, SD=5.431, N=164)* was found to be more than consumption expenditure at retirement *(M=984.73, SD=4.923, N=164)*. Also, from the calculated *t and p*-values, the results showed that the mean differences were significant *(t(df=162) = -2.543, p = 0.001, p<0.01, N=164, 2-tailed).* Analysis of the results provide enough evidence that respondents spent more before retirement than at retirement.

4.4.2 Change in Consumption Expenditure for Pensioners with Other Source of Income

This section analyses whether or not consumption expenditure on nondurable goods changes at retirement for pensioners who have other source of income together with pension wealth. In the study, the number of pensioners who had other source of income were 78 which represents 47.6% of the total respondents. Table 4.9 summarises results on the minimum, maximum and the means of consumption expenditures before and at retirement.

Table 4.9: Change in Consumption Expenditure for Pensioners with Other Source of Income

Monthly consumption expenditure	Mean (GH₵)	Minimum (GH₵)	Maximum (GH₵)
Before retirement	1321.72	744.00	2317.00
At retirement	1112.59	280.00	2350.00

Source: Author's Fieldwork, 2019

All the summary expenditures in Table 4.9 are in real values as the pre-retirement expenditures were adjusted for inflation (as explained in the methodology chapter). From Table 4.9, the minimum and maximum expenditures before retirement were GH₵744.00 and GH₵2,317.00 respectively while the minimum and maximum expenditures at retirement were GH₵280.00 and GH₵2,350.00 respectively. The average consumption expenditures before and at retirement were approximately GH₵1,321.72 and GH₵1,112.59 respectively. The change in consumption expenditure applying equation (3.1) as specified in the methodology chapter, yields a fall in consumption expenditure by GH₵209.13 (found by 1112.59 - 1321.72). The result indicates that retirement induces

approximately 15.8% drop in consumption expenditure on nondurable goods for pensioners who have other source of income. The percentage drop in expenditure (that is; 15.8%) is however, below both the general drop in consumption expenditure (which is 22.6%) and that of pensioners with no other source of income (which is 29.3%; as revealed in section 4.3.3 below). This finding is much consistent with that of Hamermesh (1984) who found a 14% fall in consumption expenditure at retirement.

4.4.3 Change in Consumption Expenditure for Pensioners without Other Source of Income

This section deals with the presentation and discussion of results on change in consumption expenditure on nondurable goods at retirement for pensioners who depend solely on pension wealth. The summary results are displayed in Table 4.10.

Table 4.10: Change in Consumption Expenditure for Pensioners without Other Source of Income

Monthly consumption expenditure	Mean (GH₵)	Minimum (GH₵)	Maximum (GH₵)
Before retirement	1228.73	549.00	2309.00
At retirement	868.75	370.00	2400.00

Source: Author's Fieldwork, 2019

In the distribution, pensioners who did not have other source of income were 86 in number which represents 52.4% of the total respondents. The summary results on both expenditures before and at retirement as shown in Table 4.10 are in real values as the pre-retirement expenditures were adjusted for inflation (as indicated in the methodology chapter). From Table 4.10, the minimum and maximum expenditures before retirement were GH₵549.00

and GH₵2,309.00 respectively while the minimum and maximum expenditures at retirement were GH₵370.00 and GH₵2,400.00 respectively. The means of consumption expenditure before and at retirement are both below that of pensioners with other source of income. On average, a pensioner who solely depends on pension wealth spent approximately GH₵1,228.73 monthly before retirement and GH₵868.75 monthly at retirement. The change in consumption expenditure applying equation (3.1) as specified in the methodology chapter, shows a fall in consumption expenditure by approximately GH₵359.98 (found by 868.75 – 1228.73) or 29.3% in percentage terms per month.

The results show a greater drop in consumption expenditure during retirement for pensioners with no other source of income than pensioners with other source of income. This revelation implies that pensioners who are not able to generate extra income to supplement their pension income are most likely to experience larger consumption discontinuities at retirement as claimed by Bernheim *et al.* (2001), Kim and Moen (2002) and Li *et al.* (2015) that consumption smoothing is more difficult in the event of liquidity constraints and insufficient pensions.

4.5 Sustainability of Consumption Expenditure at Retirement with Pension Wealth

This section presents results on the extent to which pensioners are able to sustain consumption expenditure on nondurable goods at retirement by the total respondents in the study. The analysis in this section makes use of total nondurable goods expenditure (current) and pension wealth (total income from SSNIT). The results are summarised in Table 4.11.

Table 4.11: Consumption Expenditure Sustainability at Retirement (With pension wealth)

C*/Y*	Frequency	Percentage
< 1 (Consumption sustainable)	103	62.8
> 1 (Consumption unsustainable)	61	37.2
Total	**164**	**100**

Source: Author's Fieldwork, 2019

The benchmark for the consumption expenditure sustainability analysis is that pensioners who had the ratio of their consumption expenditure to pension wealth being less than one were deemed able to sustain consumption expenditure while pensioners who had the ratio of their current consumption expenditure to pension wealth exceeding one were deemed unable to sustain consumption expenditure. The results as displayed by Table 4.11 show that, 103 pensioners representing 62.8% of the total respondents were able to sustain consumption expenditure during retirement. The number of pensioners who were unable to sustain consumption expenditure were 61 which represents 37.2%.

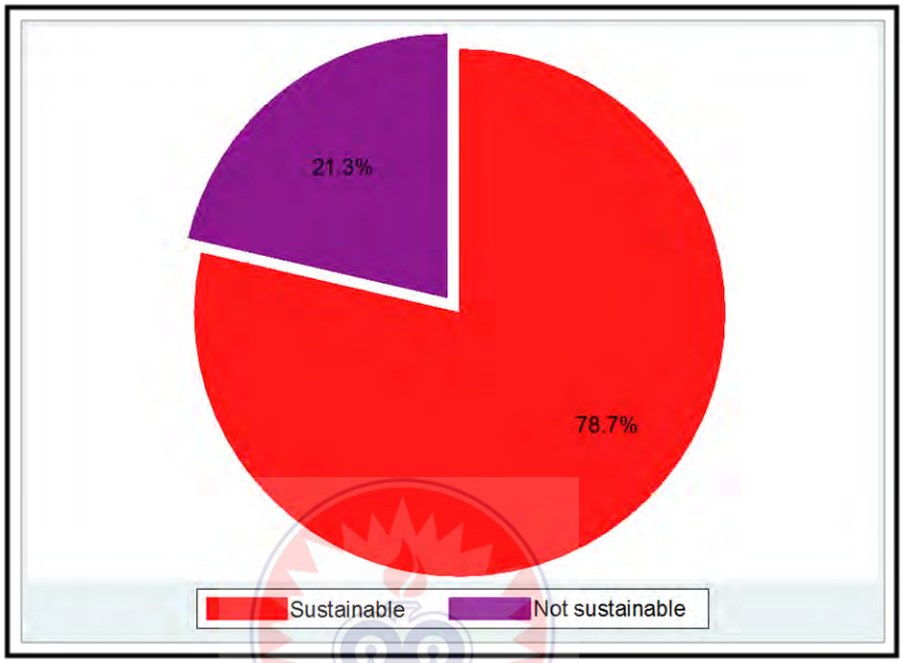
The results imply that considering pension wealth, more than half of the total respondents were able to sustain consumption expenditure at retirement. This suggests that with enough pension wealth from SSNIT, a number of pensioners would likely be able to finance their consumption expenditure adequately and thus enjoy relatively, high standard of living (Kotlikoff *et al.*, 1982).

4.5.1 Sustainability of Consumption Expenditure at Retirement with Total Income

This section presents and discusses results on the ability of pensioners being able to sustain consumption expenditure on nondurable goods given their total income. The total income

here implies the sum of pension wealth and other source of income. The summary results are presented by Figure 4.2.

Figure 4.2: Consumption Expenditure Sustainability (With total income)



Source: Author's Fieldwork, 2019

The results from Figure 4.3 show that, with the incorporation of other source of income with pension wealth, more pensioners are able to sustain consumption expenditure on nondurable goods at retirement. As high as 78.7% of the respondents were able to sustain consumption expenditure while only 21.3% were unable to sustain consumption expenditure. This outcome supports Luengo-Prado and Sevilla's (2012) claim that pensioners who are able to supplement their pension income with income received from other sources are better positioned in maintaining their pre-retirement consumption levels and standard of living.

4.5.2 Comparing Consumption Expenditure Sustainability between Pensioners with and without Other Source of Income

This section compares pensioners who have other source of income and those without it by examining expenditure sustainability on nondurable goods between them. The ratio of current consumption expenditure to pension wealth was used in the analysis. The summary results are presented in Table 4.12.

Table 4.12: Consumption Expenditure Sustainability between Pensioners with and without Other Source of Income

Consumption expenditure sustainability benchmark	Pensioners with OSY		Pensioners without OSY	
	Frequency	Percentage	Frequency	Percentage
< 1 (Sustainable)	67	85.9	62	72.1
>1 (Not sustainable)	11	14.1	24	27.9
Total	**78**	**100**	**86**	**100**

Source: Author's Fieldwork, 2019

The number of pensioners with other source of income together with pension wealth in the study were 78 which represents 47.6% of the total respondents (164 pensioners). On the other hand, pensioners who depended solely on pension wealth in the study were 86, representing 52.4% of the total respondents. The results as summarised in Table 4.12 indicate that as high as 85.9% of pensioners with other source of income were able to sustain consumption expenditure while only 14.1% of them were unable to sustain consumption expenditure during retirement. For pensioners without other source of income, 72.1% of them were able to sustain consumption expenditure while 27.9% were unable to sustain consumption expenditure. The results give enough evidence to believe that pensioners with other source of income are better-off in terms of financing

consumption expenditure during retirement than those depending solely on pension wealth (Luengo-Prado & Sevilla, 2012).

4.6 Other Sources of Income at Retirement

This section presents results on other sources which pensioners earned extra income from for discussion. These sources did not include the monthly pension income from SSNIT because it was universal to all respondents. The other sources of income include rental income, remittances from children and/or relatives, income from farms, income from operating shop, income from operating corn mill, 'fufu' pounding machines etc., income from rearing livestock, poultry, fish farm etc., income from operating transport business, interest on savings, treasury bills, fixed deposits and share dividends and other specified sources. Results on the number and percentage of pensioners who subscribed to other sources of income in the study are shown in Table 4.13.

Table 4.13: Other Sources of Income to Pensioners

Source of income	Frequency	Percentage
Rental income	25	15.6
Remittances from children, relatives, etc.	36	22.5
Income from farms	34	21.3
Income from operating a shop	15	9.4
Income from operating corn mill, fufu pounding machines, etc.	4	2.5
Income from rearing livestock, poultry, fish farm, etc.	12	7.5
Income from operating transport business	14	8.8
Interest on savings, T-bills, fixed deposits and share dividends.	12	7.5
Other	8	5.0
Total	**160**	**100.0**

Source: Author's Fieldwork, 2019

The total number of pensioners in the study who indicated that they earn extra income apart from pension income were 78 which represents 47.6% of the total respondents. With this, none of the 78 respondents subscribed to all other sources of income. It is good to mention that some pensioners earned income from as many as four different sources so, the list in Table 4.13 is not mutually exclusive. As Table 4.13 depicts, 36 pensioners representing 22.5% received remittances from children and other relatives, 34 pensioners representing 21.3% had income from farms and 25 pensioners representing 15.6% earned income from rental services. Others include 15 pensioners representing 9.4% and 14 pensioners representing 8.8% who earned extra income from the operation of shops and transport business respectively. The least number of pensioners being 4 representing 2.5% earned income from operating corn mill and 'fufu' pounding machines. In addition, 8 pensioners representing 5.0% indicated earning income from sources they specified themselves.

The overall implication of the results gives evidence to believe that SSNIT pension wealth might not be enough to support the financing of consumption expenditure of pensioners hence the need for extra income. This assertion however, may not hold for pensioners who receive relatively high pension wealth and those who strive to spend within their pension wealth (Kunawortor, 2013).

4.7 Econometric Results for Determinants of Consumption on Expenditure of Nondurable Goods at Retirement

This section deals with the presentation and analysis of results concerning how the main determinants of consumption affect expenditure on nondurable goods at retirement. These determinants partly explain the reasons for the drop in consumption expenditure on

nondurable goods at retirement (Paulin & Duly, 2002). The study adopted ordinary least squares in the estimation process for the analysis.

In order to avoid biasedness in the results, three diagnostic tests namely, multicollinearity test, heteroscedasticity test and test for omitted variables were performed. Multicollinearity is said to be present in a model when the Variance Inflation Factor is more than 10 (Gujarati, 2004). The problem of multicollinearity was not present among the independent variables since all the VIF's of the predictors were less than 10 (see Appendix C). Running the Ramsey regression specification-error test yielded a p-value of 0.4204, which was more than the level of significance (0.05). So, we fail to reject the null hypothesis, indicating the absence of omitted variables in the model (see Appendix D). The model however, suffered from heteroscedasticity when tested for using Breusch-Pagan/Cook-Weisberg test. This is because, the resultant p-value out of the test (which is 0.0005) was less than the significance level (0.05), so the null hypothesis of homoscedasticity had to be rejected and the presence of heteroscedasticity acknowledged (see Appendix E). This problem was resolved by running the White Heteroscedasticity-Corrected Standard Errors, also known as Robust Standard Errors.

The OLS regression results (corrected for heteroscedasticity) on how the main determinants of consumption influence consumption expenditure on nondurable goods at retirement is presented in Table 4.14.

Table 4.14: Regression Results (Corrected For Heteroscedasticity) for Determinants of Consumption Influencing Expenditure on Nondurable Goods at Retirement

Dependent Variable: Consumption Expenditure

Independent Variables	Coefficient	Standard Error	t	P>t
PenWealth	0.2248812	0.0455155***	4.94	0.000
OSY_no	–104.4281	50.46269**	-2.07	0.040
AGE	–40.80309	22.0757*	–1.85	0.066
DEP	65.73042	16.03075***	4.10	0.000
SEX_male	9.001848	61.18558	0.15	0.883
AS_rented	76.66539	53.25541	1.44	0.152
MS_married	113.873	55.64988**	2.05	0.042
_cons	2986.159	1385.038	2.16	0.033

*** Significant at 1% ** Significant at 5% * Significant at 10%

R-squared = 0.4924 Number of observations = 164

Source: Computation using STATA

The results concerning how the main determinants of consumption influence expenditure on nondurable goods as depicted in Table 4.14 are discussed below.

Pension wealth (PenWealth) which is the total pension resources from SSNIT is one of the main determinants that influence consumption expenditure on nondurable goods at retirement. This is because from the absolute income hypothesis, income is considered as the main determinant of consumption expenditure for households. The coefficient of pension wealth as shown in Table 4.14 has a positive sign as expected and is also statistically significant. This means that there is a direct relationship between consumption

expenditure and pension wealth. The implication is that an increase in pension wealth by a cedi will lead to an increase in consumption expenditure by approximately GH₵0.22.

The variable, no other source of income (OSY_no) as a predictor of consumption expenditure has negative sign and also statistically significant. The negative sign signifies that pensioners without other source of income spend less relative to pensioners with other source of income. The sign was expected because pensioners without extra income are most likely to have low purchasing power which translates into less spending during retirement (Luengo-Prado & Sevilla, 2012). A coefficient of 104.4281 (negative) implies that a pensioner without other source of income spends approximately GH₵104.00 less on nondurable goods than a pensioner with other source of income. This finding is in line with that of Bernheim *et al.* (2001) who found that households with low level of income and those at the bottom of the wealth distribution have larger consumption expenditure reductions during retirement.

Age (AGE) as a predictor of consumption expenditure is statistically significant at 10% significance level with a negative sign. The negative sign signifies that consumption expenditure inversely relates with age. This is due to the fact that as pensioners advance in age, they spend less on consumption (Lee, 2001). This may be as a result of the constrained nature of consumption of the aged. As Borsch-Supan and Stahl (1991) put it, the elderly finds it difficult to consume much food as compared to the young and are also restricted by frequent travels due to poor health. Also, large percentage of the SSNIT lump sum might have been spent as pensioners advance in age and so, may be relying solely on their monthly pension. Again, they might be weak to engage themselves in post-retirement jobs to earn extra income to supplement pension income in financing consumption expenditure.

The coefficient of age is 40.80309 (negative). This implies that as a pensioner grows older, his consumption expenditure drops by approximately GH₵40.80. This outcome confirms the findings of Lee (2001) who also discovered a negative relationship and statistically significant effect of age on consumption expenditure at retirement.

An equally important determinant of consumption influencing expenditure of nondurable goods at retirement is the number of dependents (DEP). From the literature, the larger the household size, the higher the consumption expenditure on nondurable goods, ceteris paribus (Lee, 2001). This is evident in the regression results as the coefficient of 'DEP' has a positive sign and also statistically significant. The coefficient of 'DEP' being 65.73042 as shown in Table 4.14 reveals that consumption expenditure of pensioners increases by approximately GH₵65.73 with an increase in the number of dependents. This confirms the findings of Lee (2001) that, pensioners who live alone spend less on consumption relative to those who live with others and Ulker (2008) that families with large household size spend more than families with small household size.

Male as a dummy for sex (SEX_male) used as a predictor in the regression estimation is not statistically significant. The result implies that consumption expenditure on nondurable goods at retirement is not influenced by the sex of a pensioner.

Married as a dummy for marital status (MS_married) has a positive sign and is also statistically significant. The positive sign was expected because retired household heads who are married have at least, an extra mouth to feed and hence higher consumption expenditure. The coefficient of 'MS_married' being 113.873 as shown in Table 4.14 implies that consumption expenditure on nondurable goods of a married pensioner exceeds that of the unmarried pensioner by approximately GH₵113.87. This finding is also in line

with that of Lee (2001) that pensioners who are not married generally spend less relative to their married counterparts.

The dummy for accommodation status which is rented (AS_rented) which sought to measure the residential arrangement of the pensioner is statistically insignificant. The implication is that consumption expenditure on nondurable goods is in no way influenced by whether the pensioner lives is rented house or not.

The value of R-squared (R^2) as shown in Table 4.14 is approximately 0.49. This means that about 49% of the variation in the model is explained by the independent variables as analysed above. This is quite okay considering the fact that the data set is cross sectional in nature. According to Gujarati (2004), in cross sectional data with several observations, one generally obtains low R^2 because of the diversity of the cross sectional units. Therefore one should not be surprised to have low R^2 in cross sectional regressions. What is important is that the model is correctly specified and that, the predictors have the expected signs and the coefficients are statistically significant (Gujarati, 2004).

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter is structured into five sections. The first section presents the summary of main findings of the study, the second section draws conclusions based on the findings while the third section covers policy recommendations. The remaining last two sections deal with the limitations of the study and suggestions for further research respectively.

5.1 Summary of Main Findings

The study was conducted with a sample size of 164 SSNIT pensioners in Ajumako-Enyan-Essiam district with the objectives of investigating whether or not consumption expenditure on nondurable goods changes at retirement, examining the extent to which pensioners are able to sustain consumption expenditure on nondurable goods as well as analysing whether some determinants of consumption (pension income/wealth, other source of income and demographic variables) significantly influence consumption expenditure on nondurable goods at retirement.

The first research question that guided the investigation of whether or not consumption expenditure on nondurable goods changes at retirement was:

> ‘‘How does the overall consumption expenditure on nondurable goods change at retirement?’’

In answering this question, the pre-retirement expenditures incurred by respondents were first adjusted for inflation using Consumer Price Index (CPI). The average CPI’s for

January, February and March 2019 was used as the base year upon which the inflation adjustment was done. The study then followed a simple algebraic expression by Battistin *et al*. (2009) (that is; equation 3.1 in the methodology chapter) to determine the change in consumption expenditure at retirement. Key findings produced from the study regarding research question one include the following:

1. Results of the study revealed that the monthly mean consumption expenditure incurred on nondurable goods before retirement by the total respondents was approximately GH₵1,272.96 while the current mean consumption expenditure was approximately GH₵984.73. Based on these, the overall consumption expenditure on nondurable goods was found to have dropped by GH₵288.23 or 22.6% at retirement. The finding thus, establishes the fact that workers in the study area covered by SSNIT do not smooth consumption into retirement, implying that the retirement-consumption puzzle cannot be retired outright in AEE district.

2. With respect to pensioners with other source of income aside the main pension income from SSNIT, it was found that the mean consumption expenditures before and at retirement were approximately GH₵1,321.72 and GH₵1,112.59 respectively. Consumption expenditure was thus, found to have dropped at retirement by GH₵209.13 for the group. In other words, retirement was found to have induced 15.8% drop in consumption expenditure for pensioners with extra income. The result implies that although pensioners who have extra income experience fall in consumption expenditure, the percentage drop is smaller than that of pensioners without extra income.

3. For pensioners who had no other source of income but depended solely on pension income, it was revealed that they averagely spent GH₵1,228.73 monthly before retirement and GH₵868.75 at retirement, yielding a drop in consumption expenditure by GH₵359.98 or 29.3%. The result gives evidence to believe that retirement induces a greater drop in consumption expenditure for pensioners without extra income than pensioners who supplement their pension income with income earned from other sources.

The second research question set to examine the extent to which pensioners are able to sustain consumption expenditure on nondurable goods was:

> ‘‘To what extent are pensioners able to sustain consumption expenditure on nondurable goods at retirement?’’

With respect to answering this question, the consumption expenditure measure (C*) was compared with income (Y*). Where the ratio of consumption expenditure to income (C*/Y*) was equal to 1, it means consumption expenditure is in equilibrium with income. If $C^*/Y^* < 1$, it implies consumption expenditure is sustainable but where $C^*/Y^* > 1$, it implies consumption expenditure being unsustainable with available income. The expenditure sustainability analysis was done for the total respondents and then extended to compare pensioners with extra income and those depending only on pension wealth. The main findings concerning the expenditure sustainability analysis are as follows:

1. The study’s results showed that 62.8% of the total respondents were able to sustain consumption expenditure while the remaining 37.2% had their consumption expenditure being unsustainable when only pension wealth was considered. However, considering total income (that is; pension wealth plus other source of

income), it was found that 78.7% of the total respondents (164 pensioners) were able to sustain consumption expenditure on nondurable goods while 21.3% were unable to sustain consumption expenditure at retirement.

2. Extending the sustainability analysis to only pensioners with extra income (who constituted 47.6% of the total respondents), it was revealed that consumption expenditure was sustainable for 85.9% of them and unsustainable for the remaining 14.1%. For pensioners without other source of income (who constituted 52.4% of the total respondents), approximately 72.1% were able to sustain consumption expenditure while the remaining 27.9% were unable to sustain consumption expenditure.

The research question that aided analysis on whether some determinants of consumption (pension income/wealth, other source of income and demographic variables) significantly influence consumption expenditure on nondurable goods at retirement was:

> ‘‘In what ways do the main determinants of consumption influence consumption expenditure on nondurable goods at retirement?’’

To answer the question, a model by Kunawotor (2013) was adapted to derive an empirical model for a regression estimation. Current consumption expenditure was used as the dependent variable while the predictors included pension wealth, other source of income, age, number of dependents, sex, accommodation status and marital status. Ordinary least squares was the main estimation technique used in the regression estimation. The main findings regarding the determents of consumption include the following:

1. Pension wealth, (as the main policy variable) as well as other source of income were both found to be positive and statistically significant. The implication is that these determinants of consumption (pension wealth and other source of income) significantly influence the level of consumption expenditure on nondurable goods by pensioners in AEE district.

2. Similarly, three demographic variables (age, number of dependents and marital status) used as predictors of consumption expenditure emerged as significant factors that influence consumption expenditure on nondurable goods at retirement. While age as a variable was inversely related with consumption expenditure, number of dependents had a direct relationship with consumption expenditure. The dummy for marital status (being married) also related positively with consumption expenditure on nondurable goods.

3. Sex and accommodation status as demographic variables used to predict consumption expenditure on nondurable goods were however found to be statistically insignificant. This implies that consumption expenditure on nondurable goods at retirement is not influenced by the sex and residential arrangement status of pensioners in AEE district.

The value of R^2 obtained in the model estimation was approximately 0.49. This signifies that the independent variables jointly accounted for 49% of variations in consumption expenditure.

5.2 Conclusions

The results produced from the research established a drop in consumption expenditure by 22.6%, indicating that retirement induces a fall in consumption expenditure thus, rendering the prediction of the life cycle hypothesis void for young pensioners in AEE district. It can generally be concluded that, SSNIT pensioners in the research area who are in their early years of retirement do not smooth consumption. The drop in consumption expenditure was also evident for both pensioners with extra income and those who depended on pension wealth only. However, pensioners who earned extra income together with pension wealth experienced less consumption expenditure drop as compared to those who depended solely on pension wealth. Revelations from the results give evidence to conclude that pension income is not enough to enable pensioners adequately finance their consumption expenditure on nondurable goods.

Findings from the study also revealed that consumption expenditure on nondurable goods was sustainable for most of the pensioners when both pension wealth and total income (pension wealth plus other source of income) were considered. However, a greater percentage of pensioners who had other source of income together with pension wealth were able to sustain consumption expenditure as compared to pensioners who depended only on pension wealth.

Finally, results from the regression estimation on determinants of consumption that influence expenditure on nondurable goods at retirement established that consumption expenditure at retirement is influenced by pension wealth, other source of income and demographic variables; age of the pensioner, number of dependents and marital status. Sex and accommodation status were however, found to be insignificant determinants affecting

consumption expenditure on nondurable goods at retirement. It can thus be concluded that nondurable goods expenditure at retirement is primarily influenced by pension wealth from SSNIT, extra income earned as well as some demographic variables (i.e. age, number of dependents and marital status).

5.3 Policy Recommendations

The following recommendations are proposed based on the study's findings:

It is recommended that the government collaborates with SSNIT to concurrently adjust the monthly pension pay any time the minimum wage is reviewed. This will enable pensioners to adjust themselves to current cost of living associated with inflation, fuel price increment among others to be able to alleviate post-retirement poverty in the study district and probably, Ghana in general.

Again, the government in collaboration with SSNIT should improve upon the policies of SSNIT pension administration since pension wealth from SSNIT significantly influenced consumption expenditure of pensioners. It thus follows that any positive policy change towards pension income would impact positively on pensioners' lives regarding the financing of consumption expenditure on nondurable goods at retirement. For instance, with reference to the regression results, an upward adjustment in pension wealth by 1% will lead to rise in consumption expenditure by approximately 0.22% and that would imply improvement in the wellbeing of pensioners, ceteris paribus.

It is also recommended to pensioners in the research district that they undertake investment opportunities in areas that would provide them with additional income in the period of

retirement. This is because, depending solely on pension wealth may be inadequate and make them unable to adequately finance and sustain their consumption needs.

Finally, employers including the government should from time to time, organise retirement seminars for their workers in AEE district especially those under SSNIT to educate them on retirement planning. This will remind and encourage workers to plan early and save enough resources in their working life to meet their consumption demands at retirement.

5.4 Limitations of the Study

The study faced few challenges during the collection of data. Some pensioners, especially those who had spent more than a year in retirement had some difficulties in providing information on pre-retirement consumption expenditures on nondurable goods. Few respondents found it a bit difficult to provide the actual expenditures which made them to give estimates of expenditures before retirement on various expenditure items on the administered questionnaires. To ensure quality and reliable data for the study, such inconclusive answered questionnaires were excluded from the study.

5.5 Suggestions for Further Research

This study was conducted to investigate whether or not consumption expenditure on nondurable goods by SSNIT pensioners in AEE district is consistent with the prediction of the life cycle hypothesis. As reviewed in the literature, the SSNIT scheme is just one of at least five pension schemes in Ghana. Suggestions for further research include the following:

- The validity of the consumption-smoothing hypothesis could be investigated by interested researchers for pensioners under other pension schemes like the CAP 30 and the GUSSS to ascertain the extent to which they smooth consumption.
- Another area to investigate could be the extent of consumption smoothing by pensioners with regards to expenditure on durable goods or total consumption expenditure in general.
- The study did not also incorporate physical assets of pensioners to arrive at their total wealth (income) in examining the extent to which pensioners are able to sustain consumption expenditure on nondurable goods. Based on this, it is suggested to interested researchers to aggregate all social security/pension wealth, financial and physical wealth of pensioners to determine their ability to maintain pre-retirement consumption expenditure.

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APPENDICES

APPENDIX A

Full Regression Results (Not Corrected For Heteroscedasticity) for Determinants of Consumption Influencing Expenditure on Nondurable Goods at Retirement

```
. reg Consumption_Expenditure PenWealth OSY_no AGE DEP SEX_male AS_rented MS_married
```

Source	SS	df	MS	Number of obs	=	164
				F(7, 156)	=	21.62
Model	13285517.5	7	1897931.07	Prob > F	=	0.0000
Residual	13695020.9	156	87788.5953	R-squared	=	0.4924
				Adj R-squared	=	0.4696
Total	26980538.3	163	165524.775	Root MSE	=	296.29

Consumptio~e	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
PenWealth	.2248812	.0377594	5.96	0.000	.1502954	.2994669
OSY_no	-104.4281	48.81737	-2.14	0.034	-200.8565	-7.999806
AGE	-40.80309	18.87352	-2.16	0.032	-78.08371	-3.522463
DEP	65.73042	11.28316	5.83	0.000	43.44294	88.0179
SEX_male	9.001848	58.94475	0.15	0.879	-107.431	125.4347
AS_rented	76.66539	50.20711	1.53	0.129	-22.50809	175.8389
MS_married	113.873	57.92574	1.97	0.051	-.5470341	228.2929
_cons	2986.159	1176.746	2.54	0.012	661.7468	5310.571

APPENDIX B

Full Regression Results (Corrected For Heteroscedasticity) for Determinants of Consumption Influencing Expenditure on Nondurable Goods at Retirement

```
. reg Consumption_Expenditure PenWealth OSY_no AGE DEP SEX_male AS_rented MS_married,r
> obust

Linear regression                               Number of obs     =        164
                                                F(7, 156)         =      18.50
                                                Prob > F          =     0.0000
                                                R-squared         =     0.4924
                                                Root MSE          =     296.29
```

Consumptio~e	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
PenWealth	.2248812	.0455155	4.94	0.000	.1349751	.3147873
OSY_no	-104.4281	50.46269	-2.07	0.040	-204.1065	-4.749816
AGE	-40.80309	22.0757	-1.85	0.066	-84.40893	2.802759
DEP	65.73042	16.03075	4.10	0.000	34.06508	97.39577
SEX_male	9.001848	61.18558	0.15	0.883	-111.8573	129.861
AS_rented	76.66539	53.25541	1.44	0.152	-28.52936	181.8601
MS_married	113.873	55.64988	2.05	0.042	3.948445	223.7975
_cons	2986.159	1385.038	2.16	0.033	250.3101	5722.008

APPENDIX C

Variance Inflation Factor Test for Multicollinearity

VARIABLE	VIF	1/VIF
DEP	1.22	0.817614
AGE	1.19	0.841273
PenWealth	1.18	0.846490
MS_married	1.18	0.850844
SEX_male	1.11	0.899247
OSY_no	1.11	0.900617
AS_rented	1.06	0.944365

Mean VIF: 1.15

According to Gujarati (2004, pg. 362), multicollinearity is a problem in a model when the Variance Inflation Factor exceeds 10. But since all the VIF's are less than 10, multicollinearity is absent in the model.

APPENDIX D

Ramsey Regression Specification-Error Test for Omitted Variables

H_o: model has no omitted variables

F (3, 153) = 0.95

Prob > F = 0.4204

We fail to reject the null hypothesis at 5% significant level and this indicates that the model has no omitted variables. It is however insignificant at 1% and so, there could be further improvement by the addition of other variables like years of education in future research.

APPENDIX E

Breusch-Pagan/Cook-Weisberg Test for Heteroscedasticity

Ho: Constant variance

Chi 2(1) = 12.10

Prob > Chi 2 = 0.0005

We reject the null hypothesis of homoscedasticity and therefore acknowledge the presence of heteroscedasticity. This was however corrected for with the use of White Heteroscedasticity-Corrected Standard Errors (Robust Standard Errors).

APPENDIX F

Questionnaire for Pensioners

TOPIC: INCOME AT RETIREMENT AND CONSUMPTION OF PENSIONERS IN GHANA: THE CASE OF A.E.E. DISTRICT

This questionnaire concerns income levels and expenses made on nondurable goods and services (goods and services we buy and use regularly) by pensioners in AEE district. You have been chosen because your responses will help achieve the purpose of the study and also help to make recommendations to the government and other stakeholders of pensions. It is expected that your responses would be as frank as possible. It is also reiterated that information provided is only meant for academic purposes and will thus, be treated confidential.

SECTION A: BACKGROUND INFORMATION OF RESPONDENTS

Kindly respond to the following questions, please tick [√] where applicable.

Q1. Sex:

[ ] 1. Male

[ ] 2. Female

Q2. How old are you (in years) now? …….

Q3. What is your current marital status?

[ ] 1. Married .

[ ] 2. Unmarried

Q4. Do you have dependants?

[ ] 1. Yes

[ ] 2. No

Q5. If yes, how many? .....

Q6. How are you currently accommodated?

[ ] 1. Lives in rented house

[ ] 2. Lives in unrented house

Q7. At what age did you retire? …….

Q8. Based on which reason did you retire?

[ ] 1. Official retirement age

[ ] 2. Voluntary retirement

[ ] 3. Pressure from employer

[ ] 4. Other (please specify)……..

SECTION B: SOURCES OF INCOME AVAILABLE TO YOU AS A PENSIONER

Q9. Are you on any pension scheme?

[ ] 1. Yes

[ ] 2. No

Q10. If yes, which pension scheme do you belong to?

[ ] 1. SSNIT

[ ] 2. CAP 30

[ ] 3. Ghana Armed Forces Pension Scheme

[ ] 4. Ghana Universities Staff Superannuation Scheme

[ ] 5. Cocoa Research Institute of Ghana Pension Scheme

[ ] 6. Other (please specify)……..

Q11. Has your pension scheme paid you your lump sum benefit?

[ ] 1. Yes

[ ] 2. No

Q12. If yes, how much were you paid as lump sum? GH¢.....

Q13. Currently, how much does your pension scheme pays you as monthly pension? GH¢…...……

Q14. If you are not on any pension scheme, how do you get your income? ……..…..

Q15. How much is it in a month? GH¢.....

SECTION C: EXPENDITURE INCURRED BEFORE AND AT RETIREMENT ON THE CONSUMPTION OF NONDURABLE GOODS AND SERVICES

(i) **Daily Expenses**

Q16. Please, provide the average **daily expenditure** on the following goods and services for your entire household before and at retirement.

Good/Service		Before retirement (GH₵)	At retirement (GH₵)
Food and non-alcoholic beverages			
Alcoholic beverages and tobacco			
Communication (cost on call credits, internet bundles, postal services, etc.)			
Transport			
Other daily costs incurred (please specify)	1.		
	2.		
	3.		

(ii) **Monthly Expenses**

Q17. Please, provide the average **monthly expenditure** on the following goods and services for your entire household before and at retirement.

Good/Service		Before retirement (GH₵)	At retirement (GH₵)
Health (e.g. hospital expenses, drugs, etc.)			
Electricity bill			
Water			
Gas, firewood, charcoal and other household fuels			
Clothing (attires, footwear)			
Recreation and culture (e.g. visits to tourist sites, beaches, fun game programmes, newspapers, etc.)			
Other costs incurred within a month (please specify)	1.		
	2.		
	3.		

SECTION D: OTHER SOURCES OF INCOME

Q18. Do you receive additional income apart from the monthly pension?

[ ] 1. Yes

[ ] 2. No

Q19. If yes, please refer to the table below, tick as many sources as applicable and provide the amount you averagely get in a month.

Additional Source(s) of Income		**Tick here (√)**	**Amount (GH₵)**
Rental income (Income from renting houses, canopies, plastic chairs, etc.)			
Remittances from children, relatives, etc.			
Income from farms (e.g. cocoa, citrus, cassava, etc.)			
Income from operating a shop (provisions, hardware, drinking/chop bar, etc.)			
Income from operating corn mill, fufu pounding machines, etc.			
Income from rearing livestock, poultry, fish farm, etc.			
Income from operating transport business			
Interest on savings, fixed deposits, share dividends, etc.			
Others (please specify and state amounts)	1.		
	2.		
	3.		

Thank you for your co-operation in responding to the questionnaire.