UNIVERSITY OF CAPE COAST

HOUSEHOLD SOCIAL SPENDING AND WELFARE: EMPIRICAL EVIDENCE FROM GHANA

RICHARD KWABENA NKRUMAH

2019

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BY

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Thesis submitted to the Department of Economics of the Faculty of Social Sciences of the College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy degree in Economics

MARCH 2019

DECLARATION

Candidate's Declaration

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

Candidate's Signature ..... Date .....

Name: .....

Supervisor's Declaration

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

Principal Supervisor's Signature ..... Date .....

Name: .....

Co-Supervisor's Signature ..... Date .....

Name: .....

ABSTRACT

This study sought to examine the effect of household social spending on welfare in the light of both present and future poverty analyses using the quantitative approach. Ghana Statistical Service's Ghana Living Standard Survey (GLSS) fourth, fifth and sixth waves were used in the study. Final sample sizes of 5,556, 7,759 and 15,568 for the fourth, fifth and sixth rounds respectively were analysed. The study found in its first objective that very poor households benefited more in terms of welfare than non-poor households and that the difference in the effect of social spending widens between the poorest and other households, moving towards higher levels of welfare. On the other hand, vulnerability to poverty estimates showed that, for all three rounds of the GLSS, all households suffer poverty in the future and it is severe for very poor households. Moreover, the study found that as households have higher inclination towards unilateral social support, the more it reduced welfare and thus resulted in rising vulnerability to expected poverty for all households. This was true for all objects of social support.

Two key policy recommendations were made. First, informal sensitisation programmes by public agencies like the National Commission for Civic Education (NCCE) and NGOs should be organised to campaign against rising social spending and its effect on future poverty, since formal education was found to have rather increased social spending. Second, the traditional authorities may formulate policies to set guidelines for the indicative costs of organising and running social events aimed at combating the rising social spending as has been done by the governments of Tajikistan and India.

KEY WORDS

Social events

Social spending

Social support

Vulnerability to expected poverty

Welfare

ACKNOWLEDGEMENTS

I would like to express my profound gratitude to my principal supervisor, Prof. Samuel Kobina Annim and co-supervisor, Dr. Benedict Afful, both of the Department of Economics, for their professional guidance, top-class advice and the goodwill with which they guided this work. I am highly grateful to these earnest academicians.

Again, I wish to thank my family for their support, especially, my mother, Grace Arthur, my sister and her husband, Vida and Kenneth Tillotson, and my gospel preacher, Frank Obeng Essien, for their immense contributions in my life.

Finally, I would like to extend my gratitude to colleagues and lecturers who were at the Joint Facility for Electives (JFE) 2017 sponsored by the African Economic Research Consortium (AERC), Kenya. Lastly, to all my mates at the Department of Economics, University of Cape Coast, I appreciate the esprit de corps that pushed this work to its successful completion.

DEDICATION

In memory of my late father.

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LIST OF ABBREVIATIONS

3SLS	Three Stage Least Squares
AIH	Absolute Income Hypothesis
APC	Average Propensity to Consume
CWIQ	Core Welfare Indicators Questionnaire
FGLS	Feasible Generalized Least Squares
GIC	Growth Incidence Curve
GLS	Generalized Least Squares
GLSS	Ghana Living Standard Survey
GSS	Ghana Statistical Service
LEAP	Livelihood Empowerment Against Poverty
MDG	Millennium Development Goal
MPC	Marginal Propensity to Consume
MPS	Marginal Sropensity to Save
NCCE	National Commission for Civic Education
OLS	Ordinary Least Squares
PHC	Population and Housing Census
QSA	Quaker Social Action
RIH	Relative Income Hypothesis
SDG	Sustainable Development Goals
SFFP	Social Fund Funeral Payments
SQREG	Simultaneous Quantile Regression
VCE	Variance-Covariance of Errors
VEP	Vulnerability to Expected Poverty

CHAPTER ONE

INTRODUCTION

In both developed and developing societies, spending on social events has attracted attention of scholars in the quest to examining poverty and inequalities, and how to mitigate them, especially in the developing world (Woodthorpe, 2012). The debate on whether household social spending deepens social capital or a dissipation of productive resources still ranges on. Those who argue in favour reason that, participation in social events like wedding parties, funerals and festivals form part of individuals' social needs, thus improving household welfare (Burton, 1990; Maslow, 1954; Sen, 1985). On the other hand, there are others like Case, Garrib, Menendez, and Olgiati (2008), Chen and Zhang (2012), Rao (2001) who have argued that such expenditure are likely to squeeze out investments in health, education and employment. Hence, the general purpose of this study.

This chapter of the study presents the background to the main problem; describing the status quo of social spending from global perspective, narrowed down to the case of Ghana, and considers the objectives and limitations of the study. The chapter is organised into the following: Background to the Study, Statement of the Problem, Research Objectives, Hypotheses, Significance of the Study, Limitations, and Organisation of the Study.

Background to the Study

Mankind interact, communicate and share parts of their lives with others from their immediate to the farthest relations (Sen, 1985; Shefrin & Thaler, 1988). These communal sharing often come in the form of social assemblies often referred to as social functions, gatherings, events or simply social ceremonies. Social events, in most circumstances, have brought people together for ceremonies that would rarely happen in one's lifetime and are usually ceremonies for the passage of time. Therefore, social events are activities that an individual participates and derives

satisfaction on the account of so many others participating as well. The interest is a shared or a common one. It could either be for a shared happiness, commemoration, community development, solidarity and so on. They include funerals, weddings, festivals, parties, and other ceremonies that often bring two or more people together for a shared interest. However, the elaborate nature of consumption in some of these social events cannot be overemphasised.

At the global stage, the Goal 1 of the Sustainable Development Goals (SDGs) of the United Nations (UN) seeks to end poverty in all of its forms with the targets of eradicating extreme poverty and reducing absolute poverty for all people by the year 2030. The Goal 12, on the other hand, focuses on ensuring sustainable consumption and production patterns. The latter goal also focuses on sustainable consumption and consumer behaviour which ensure the prudent use of resources, cut back on wastes and promotes sustainable lifestyles. This is intended to eliminate any form of consumption and production excesses that harm the environment, society and, by extension, the attainment of any of the SDGs. It could be argued, therefore, that eradicating extreme poverty would also mean promoting sustainable consumer behaviour and consumption lifestyle in social spending as well.

World statistics show that the global economy is rapidly expanding with increasing population and high expenditures on the basic necessities of life, (World Health Organization, 2016), as well as on entertainment, goods of ostentation and luxury (Chen, 2014; Chen & Zhang, 2012). As some of these soaring expenditure could be said to be justifiable others like spending on weddings parties, festivals and funerals are confounding. Social spending, nowadays, command high expenditure as a result of changing lifestyle and social preferences (Mazzucato, Kabki, & Smith, 2006). Increasing spending on events as mentioned above means more pressure on household budgets for food and other necessities, especially for low income households that are struggling to come out of poverty (Chen & Zhang, 2012). The phenomenon cuts across developed and developing countries as expressed in the

works of Aker and Sawyer (2016), Banerjee and Duflo (2007), Bloch, Rao, and Desai (2004), Woodthorpe (2012).

In the UK, for instance, in 2014, the cost of funerals rose seven times faster than the cost of living (Royal London, 2015). By 2017, the cost of a funeral had risen by 70.6 percent whilst wages had increased by only 20 percent over the previous decade (Royal London, 2017). Also, the Royal London National Funeral Cost Index, 2017 showed a rise in funeral costs ahead of inflation. Unfortunately, it is reported that the UKs most vulnerable citizens are those taking on these increased levels of funeral debt (Quarker Social Action, 2017). Gradually, "public health funerals" or "paupers' funerals" which are organised by local authorities for deceased persons who neither have relatives nor friends are rising because there is evidence that funeral costs now deter some families from taking responsibility for arranging a funeral for their deceased (Quarker Social Action, 2015, 2017). Likewise in the US, the average funeral cost is between $7,000 - $10,000 ("How Much Does the Average Funeral Cost?", 2018), and a lot more poor households are being put under financial distress ("Funeral Poverty in the 21st Century", 2014). Also, in Eastern Europe and many parts of Russia, the average wedding cost ranged from $1,000 in Slovakia to $15,000 in Russia ("Survey Compares Countries Wedding Spending Habits", 2013).

The above entanglement of the poor to high social spending is also far widespread in developing countries. In China, Chen (2014), Chen and Zhang (2012) have found that social spending on funerals and festivals militate against early child development in rural China. Likewise, Bloch et al. (2004), Rao (2001) have shown that elaborate social spending perpetuates rural poverty in India. Yet the practice is largely indispensable in the lives of the poor. In fact, Banerjee and Duflo (2007) indicated that, more surprisingly, spending on festivals forms an important part of the budget for many extremely poor households in developing countries.

So according to the study by Banerjee and Duflo, in Udaipur, more than 99

percent of the extremely poor households spent money on a wedding, a funeral, or a religious festival, and the median household spent 10 percent of its annual budget on festivals. In South Africa, 90 percent of the households living under $1 per day spent money on festivals. In Pakistan, Indonesia, and Cote d'Ivoire, more than 50 percent did likewise (Banerjee & Duflo, 2007). According to Aker and Sawyer (2016), households in Niger spend to celebrate the holiday of Tabaski but are often unable to meet savings goals for education, health or agriculture expenses. Similarly, South African households could also spend about a year's income to bury a departed member of the family (Shimeles & Woldemichael, 2013).

In Ghana, according to Ghana Statistical Service's report on poverty profile in 2008, about 32 percent of Ghanaians were poor living below US $2 a day. Yet, the average funeral in Ghana then cost between US$2000 and US$3500 (Butu, 2013; Ghana Statistical Service, 2008); costing between 1000 and 1750 percent-fold of the poverty line. By 2013, more than 2.2 million Ghanaians (based on 2010 Population and Housing Census (PHC) projections) could not afford to feed themselves with 2,900 calories per adult equivalent of food per day, even if they were to spend all their incomes on food (Ghana Statistical Service, 2014). Nonetheless, the Ghana Living Standard Survey VI (GLSS 6) data on miscellaneous household expenditure on funerals, weddings and other social events could go as high as about US$10,000.

Presently, funerals have become an avenue for the display of wealth (Butu, 2013; Jufare, 2008). It is, therefore, expected that elaborate consumption of these social events is likely to overstretch the budget of some household within a cohort that have wide income disparities. Interestingly, such high expenditure cut across all types of households including the poor ones. Consider Table 1 which compares the cost of wedding between developed countries like USA and the UK and developing countries like South Africa and Ghana for 2016.

Table 1 – *Cost of Wedding across Countries*

Country	Income (PCI)[1]	Cost of Wedding	
		Mean Expenditure	Percentage of PCI
	$	$	%
USA	57638.16	31,213[2]	54.15
UK	40412.03	18,244[3]	45.14
South Africa	5274.55	5,297.92[4]	100.44
Ghana	1513.46	7016.56[5]	463.61

Source: Author's computations

From Table 1, it could be seen that the cost of wedding in the USA, for instance, takes 54.15 percent of the per capita income of an individual. This means that the average prospective groom would use about 54.15 percent of his annual income on an average wedding ceremony. It also means that a bachelor would have to save about 5 to 6 months' income in order to organise a successful, average wedding. The story is no vast different in the UK where an average bachelor would have to spend about 45.14 percent of his annual income on wedding; approximately four and half months of monthly income savings. The situation is excessively pronounced in developing countries than the developed world. For instance, in South Africa, the cost of wedding takes a little above the annual income of the average individual while in Ghana, the situation is much worse. A bachelor in Ghana would have to save his monthly income for about 4 to 5 years for a successful

[1]https://www.worldbank.org; PCI = Per Capita Income

[2]https://www.theknot.com/content/average-wedding-cost-2016

[3]Converted into dollars, sourced from https://www.independent.co.uk/life-style/average-british-wedding-cost-uk-27000-hitched-venue-honeymoon-food-london-midlands-a7937551.html

[4]Converted into dollars, sourced from https://www.hitched.co.za/wedding-planning/budget/how-to-organise-your-budget_7.htm

[5]Converted into dollars, sourced from http://www.pulse.com.gh/lifestyle/relationships-weddings/weddings-the-rise-rise-and-rise-of-wedding-expenditure-in-ghana-id5273616.html

wedding.

Digging deep, social events are a source of merry and relaxation as well as prestige and esteem which form part of the needs of individuals and households – specifically, their social needs. These social needs, according to Maslow (1943, 1954) theory of human needs, form part of the pyramidal needs of an individual. Social ceremonies on the pyramid constitute a higher need apart from the basic human needs such as food, shelter, clothing, sex and housing. Sociologists argue that the satisfaction derived from social events in the form of happiness, social solidarity, esteem and so on contributes significantly to the well-being or welfare of an individual (Burton, 1990; Mehra, Dixon, Brass, & Robertson, 2006; Sen, 1985).

Economists, on the other hand, only measure welfare in monetary terms but not the psychological feelings attached to goods and services. Economists argue that insofar as consumption of these social needs constitute a part of a household or an individual's expenditure, welfare could be measured through household consumption expenditure (Blau, 1964; Hoddinott & Quisumbing, 2010). This attempts to explain why some would borrow to heavily finance their lofty weddings and funerals. Some parents do ignore the education expenses of their wards to buy funeral cloth or hire a brass band to perform live music during weddings and funerals (Case et al., 2008; De Witte, 2003).

In Ghana, according to Mazzucato et al. (2006), money and death are inextricably interwoven. Every death triggers a flow of money and the funeral business flourishes. The elaborate funeral celebrations during which no trouble or expense is spared contrast sharply with the daily struggle for the primary necessities of life. They have become great public events, where families compete for prestige and respect by showing off wealth, and by publicly conforming to norms of solidarity and respect for the dead. Families would spend whatever assets possible just to bury the dead regardless of the lasting consequences for posterity.

In a similar fashion, marriage ceremonies in Ghana have become westernised

to the very extent that the couples-to-be usually hold two separate marriage ceremonies before they are socially accepted to be properly married. Traditionally, a marriage becomes legitimate and fully acceptable when the families of the would-be couple meet to witness and celebrate the marriage union where the bride price is fully paid and other demands of the bride's family fully met. At this stage, the marriage becomes legitimate and recognised even by the country's constitution. Unfortunately, this marriage ceremony has been wrongfully termed as 'engagement' ceremony while the church or Western wedding ceremony is regarded as the wedding proper. To some extent, some religious organisations do not recognise traditional marriage as legitimate until one performs the Western ceremony. This has resulted in double blow of money into wedding a life-partner in Ghana.

The implications of these elaborate spending on social events are pronounced and not far-fetched especially in the context of the mass poverty and poor standard of living in the country. Non-productive expenditure like these would likely aggravate the disease of poverty and misery among the people. In situations where one could sell off productive lands and plantations just to organise lofty weddings and funerals (Case et al. (2008), De Witte (2003)), there is nothing to expect than unnecessary hardships for the household. Newly wedded couples would have to necessarily restart their whole lives as bountiful amount of lifetime savings would have been expended on their wedding parties as Aker and Sawyer (2016) have found.

On the bright side, the world is becoming aware of the dire consequences inherent in such spending postures. Campaigns have started in some countries like the UK and the USA where there is the drive against costly spending on funerals among the poor and the vulnerable (Quarker Social Action, 2015; Royal London, 2015, 2017). Scotland, precisely, has gone ahead to administer the Social Fund Funeral Payment (SFFP) to cushion the poor against poverty arising out of costly

funerals (Quarker Social Action, 2015). According to Aker and Sawyer (2016), some governments, for example Tajikistan and India, have already begun to step up strict measures to combat the increasingly growing costs of running wedding celebrations. These governments have gone so far as to even formulate policies and set guidelines for the indicative costs for organizing and running wedding celebrations (Aker & Sawyer, 2016).

Statement of the Problem

In human societies, social events are understood as a way of life and they are activities that an individual participates to derive satisfaction. The utility derived from social events tend to be complementary in the sense that satisfaction increases as the number of friends and family increases in such gatherings. The complementarity of utility usually knits the demand of some goods and services to the demand of others in the family and among cohorts.

An example of such is a person's utilization of any of the social media platforms, like Facebook, which becomes a function of the number of friends and families on such platforms with whom he/she could exchange messages or chats. Therefore, as the rate of cohorts' utilization increases on such platforms the higher the satisfaction one derives from being on such social media platform (Alvarez-Cuadrado & Van Long, 2011). Social events, by this nature, also tie expenditure to the norms of cohort of affinity which must be borne by participating individuals and households. These norm-costs are usually high and may have some dire consequences on household incomes and welfare of the poor (Agyekum, 2006; Owusu-Frempong, 2005; Van der Geest, 2006)

By measuring consumption welfare after a household has expended on social events, it is not hard to obtain a positive addition to household welfare. In this case, ascertaining a precise addition to welfare would easily come through econometric analysis. However, works done in the case of Ghana have been largely qualitative

description of social spending on funerals or wedding ceremonies as in De Witte (2003), Mazzucato et al. (2006), Van der Geest (2006) and Agyekum (2006). It is important, therefore, to analyse using econometric approach to obtain exact effect of social spending for all categories of households, whether poor or non-poor – measuring the differential effect between the poor and the non-poor.

According to Chaudhuri (2003), thinking about appropriate forward-looking anti-poverty interventions, must, of first importance, be "necessarily going beyond the catalogue of who is currently poor, how poor they are, and why they are poor to an assessment of households' vulnerability to poverty – who is likely to be poor, how likely are they to be poor, how poor are they likely to be, and why are they likely to be poor". In this regard, vulnerability estimates of expected poverty for elaborate social spending become essential to policy as this is mostly concealed in the present consumption poverty analysis.

However, literature that have examined the effect of social spending have not analysed the vulnerability to expected poverty arising out of social spending. This is because the full effect of one's elaborate spending on social events may not be realised in the short term but could resonate into many years ahead or perhaps for the rest of one's life. For instance, a family that sells a farmland or a crop plantation to bury a deceased is likely to suffer poverty in some one or two years to come (Case et al., 2008). Likewise, a young man who expenses all his youthful savings on lofty weddings may not be able to recover for the rest of his life (Aker & Sawyer, 2016). It is therefore relevant to examine the effect of social spending not only in terms of what happens to present poverty levels but also the vulnerability to expected poverty which is always about future poverty levels.

Another key dimension to spending on wedding, funerals, festivals and other social events is social support. The term social support emanating from the social exchange theory is generally applied to interactions in which giving and receiving material or intangible resources are at least partially predicated on the

expectation of return or reciprocity (Uehara, 1990). This arises out of the set of specific relationships between one and others. A socially connected person has a lot of friends and well-wishers who would be present at his or her funeral or wedding ceremony. As a result, socially connected persons become engrossed in social exchanges where one would have to necessarily reciprocate actions and gestures towards friends and family during ceremonies like funerals, weddings etc (Langford, Bowsher, Maloney, & Lillis, 1997; Shumaker & Brownell, 1984). Yet, the effect of a social support where a household only contributes to social events but not receiving reciprocity has also not been examined in literature. Therefore, this study also undertakes to analyse its effect through social spending on present as well as future poverty of households.

Research Objectives

The general objective of the study is to examine the effect of social spending on household welfare. Specifically, the study seeks to:

1. Compare the differences in effect of social spending on welfare between the poor and non-poor households

2. Estimate households' vulnerability to expected poverty with regard to social spending

3. Examine the joint effect of social support and social spending on household welfare

4. Estimate the vulnerability to expected poverty from the joint effect of social support and social spending

Hypotheses

The following are the hypotheses of the study.

1. H_0 : Poor households have lower or equal addition to welfare as non-poor households per social spending

H_A : Poor households have higher addition to welfare than non-poor households per social spending

2. H_0 : Poor households are less or equally vulnerable to expected poverty than non-poor households per social spending

H_A : Poor households are more vulnerable to expected poverty than non-poor households per social spending

3. H_0 : Unilateral social support has positive or no effect on the welfare of giving-households through social spending

H_A : Unilateral social support has a negative effect on the welfare of giving-households through social spending

4. H_0 : Unilateral social support does not make giving-households vulnerable to expected poverty through social spending

H_A : Unilateral social support makes giving-households vulnerable to expected poverty through social spending

Significance of the Study

The findings of this study are important in providing empirical basis for policies regarding household social spending at both the local community level and the national level. Works undertaken in this area in Ghana have focused on the qualitative description of how costly funerals and wedding have become over the years. Some perceive such as a form of real investment that is expected to yield financial reciprocity in the future while others think of it as unproductive. This study estimates in quantifiable terms the effect of social spending on welfare, both on present poverty or welfare levels and on future poverty levels, between the poor and non-poor households. At the end, the study proffers recommendations that seek to control the negative effect of social spending on household welfare, especially towards the poor in society.

Limitations

The following are the limitations of the study. First is the unit of analysis which is at the household rather than at the individual level. All household members do not spend equally on social events and as such there is the likelihood that the analyses would not reflect true welfare state of individuals in a particular household. The assumption is that individuals within a household are homogeneous and that the characteristics of the household head is a fair representation the household. This assumption may not necessarily be true in the light of social spending. For instance, a spouse may spend heavily on social events out of his/her own income but may not be captured by the head of household when accounting for social expenditure.

The second limitation was a methodological challenge with regard to the simultaneous quantile regression. Just as the 3-Stage Least Square accounted for bi-causality between social spending and welfare, a technique that would have catered for the bi-causality before estimating the quantile regression would have been preferred. Therefore, the simultaneous quantile regression in this study only considered the structural, welfare equation of the system of equations used in this work. Worthy to state that, a stepwise regression using Ordinary Least Square (OLS) before quantile regression was conducted yet the results were similar.

Organisation of the Study

This study has been organised into five chapters. The first chapter dealt with the background story to the topic for the study, statement of the problem, the objectives of the study, significance of the study, limitations and the organization of the study. This chapter painted a conceivable picture about past and current trends of social spending behaviour of households in developing countries like Ghana and how it is perceived to promote or suppress welfare. It therefore, set forth the objectives and hypotheses to addressing the key gaps identified in literature.

The second chapter reviewed relevant theories on human needs, social

exchange, consumption hypotheses, and concepts of poverty and welfare. This chapter critiqued some related empirical works and concluded with justification on what study sought to contribute to knowledge. Chapter three also dealt with the methodology including the research design, data sources, data preparation and generation of variables, model specification and the estimation techniques. Chapter four covered presentation of results and discussion of findings and chapter five summarised the entire work and stated the underlying conclusions based on the findings obtained in the study and finally made policy recommendations to controlling adverse social spending in Ghana.

Chapter Summary

Many households in Ghana live below the poverty line, yet a bachelor would need to save for 4 to 5 years in order to have an average marriage ceremony. Such costly spending are believed to perpetuate extreme poverty and even make the non-poor vulnerable to poverty. Moreover, empirical works that exist on social spending in Ghana have not mostly not considered quantitative regression analyses. The general objective of the study is to examine the effects expenditures on social events have on households' welfare and it is intended to provide empirical basis for policies regarding social spending at both community and national level. However, the main limitation of the study is that the unit of analysis is the household rather than the individual. All household members do not spend equally on social events and as such there is the likelihood that the analyses would not reflect true welfare state of individuals in a particular household.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter reviews relevant theories and concepts related to human need, consumption patterns, poverty and welfare, and it is divided into two sections: theoretical review and empirical review. Theoretical review begins with concepts of poverty and welfare followed by consumption hypotheses. Thirdly, the theory of social support and how it plays out between social exchanges and social spending. Thereafter follows the review of the theory of human needs from anthropology, sociology and economics perspectives. The chapter ends with a review of related empirical literature on household welfare, social spending and social exchanges.

Theoretical Literature Review

This section presents the theoretical literature review which is an evaluative report of related concepts and theories that form the basis of this study. The review is organised into the following subsections: Concepts of Poverty and Welfare, Consumption Hypotheses, Theory of Social Exchange and Theory of Human Need.

Concepts of Poverty and Welfare

According to the United Nations report in 2016, about one in eight people still lived in extreme poverty, nearly 800 million people suffered from hunger, the births of nearly a quarter of children under 5 had not been recorded, 1.1 billion people were living without electricity, and water scarcity affected more than 2 billion people (World Health Organization, 2016). Poverty is a widely used and meaningful concept in all countries in the world (Gordon, 2006), yet there is no international consensus on guidelines for measuring poverty (World Health Organization, 2016). The Sustainable Development Goal 1 of the United Nations calls for an end to

poverty in all its manifestations, including extreme poverty, over the next 15 years. All people everywhere, including the poorest and most vulnerable, should enjoy a basic standard of living and social protection benefits. Although some member countries are doing well at it, there still exist more to do.

World Health Organisation defines poverty in pure economic terms as when a family's income fails to meet a nationally established threshold. However, this threshold differs across countries. Typically it is measured with respect to families and not the individual, and is adjusted for the number of persons in a family (World Health Organization, 2016). It further posits that Economists often seek to identify the families whose economic position (defined as command over resources) falls below some minimally acceptance level. In the works of Nunes (2008), three important trends have emerged in the debate in defining, measuring and looking at the policy implications of poverty. They include, choosing poverty lines, choosing poverty measures and making the fine distinction and determining the relationship between inequality and poverty.

Poverty can be said to exist in a given society when one or more persons do not attain a level of material well-being deemed to constitute a reasonable minimum by the standards of that society (Martin, 1992). Saying that poverty exist is only the first step; for many purposes, including policy analysis, one must also say how much poverty exists. Poverty comparisons may be either qualitative or quantitative, according to Martin (1992). The most common approach to measuring poverty, according to Chamhuri, Karim, and Hamdan (2018), is quantitative, money-metric measures which use income or consumption to assess whether a household can afford to purchase a basic basket of goods at a given point in time. The basket ideally reflects local tastes, and adjusts for spatial price differentials across regions and urban areas in a given country (Chamhuri et al., 2018). Money-metric methods are widely used because they are objective, can be used as the basis for a range of socio-economic variables, and it is possible to adjust for differences between

households, and intra-household inequalities.

As stated in Ravallion, Chen, and Sangraula (2009), the widely used $1 a day poverty line was set for World Development Report 1990. Ravallion et al. (2009). A consensus emerged in the international development community on this standard for measuring extreme poverty in the world, and it became the basis of the first Millennium Development Goal, to halve the 1990s $1 a day poverty rate by 2015. Absolute poverty line is one that has a fixed value over time. When measuring the welfare function, the poverty line is absolute in the space of welfare where poverty comparisons of two individuals are treated in the same way if they are the same level of welfare (Nunes, 2008).

In contrast with the absolute approach, Townsend (1979) developed the relative approach as an alternative measure to poverty, breaking with the anterior definitions of poverty (Nunes, 2008). An upper bound for poverty line anchored to certain basic capabilities is also ideal to make poverty measurements comparable over time and space. Ultimately, a maximum admissible poverty line is ideal to best count the poor and to have a fairly good idea of the progress of anti-poverty programs (Townsend, 2014). The relative definition of poverty refer to poverty not as some absolute basket of goods but in terms of the minimum acceptable standard of living applicable to a certain member state and within a person's own society. Several problems arise from both absolute and relative poverty lines.

According to Martin (1992), there are a number of quite different conceptual approaches to the measurement of well-being at the individual level. Approaches differ in terms of the importance the analyst attaches to the individual's own judgements about his or her well-being. They also differ in terms of the importance attached to the essentially materialist idea of standard of living versus less tangible but possibly no less important concepts such as rights (Martin, 1992).

Nonetheless, absolute poverty cannot really be meaningfully comprehended without acknowledging inequality. Given the dramatic rise of inequality in recent

times, this suppression is all the more a concern (Saith, 2005). the income inequality gap ratio is increasingly being used, which is defined as the gap between the poverty line and the average income of the poor expressed as a proportion of the poverty line. In Yitzhaki (2002), the decomposition of the between-group component enables one to pinpoint the share of the poor in the population, the poverty gap, and inequality among the poor, from which all the components of a poverty measure can be identified.

Another dimension to measuring poverty is the concept of vulnerability to future poverty. Chaudhuri (2003) explains vulnerability, unlike the other measures of poverty, may be broadly construed as an ex-ante measure of well-being, reflecting not so much how well off a household currently is, but what its future prospects are. Poverty, on the other hand, is rather an ex-post measure of a household's well-being (or lack thereof). It reflects a current state of deprivation, of lacking the resources or capabilities to satisfy current needs. Economists, according to Ligon and Schechter (2003), have long recognised of well-being depends not just on its average income the risk it faces as well, particularly in households consider an extreme case, a household with very expenditures but with no chance of starving may might not wish to trade places with a household consumption but greater consumption risk.

Also, Hoddinott and Quisumbing (2010) argues that vulnerability is the likelihood that at a given time in the future, an individual will have a level of welfare below some norm or benchmark. The time horizon and welfare measure are general. One could think of vulnerability pertaining to the likelihood of being poor next year, in ten years time, or being poor in old age. Although vulnerability assessments typically express welfare in terms of consumption, and the norm or benchmark as the poverty line, the definition of vulnerability is sufficiently general so as to encompass many dimensions of well-being. Like Chaudhuri (2003), Ligon and Schechter (2003), Hoddinott and Quisumbing (2010) argued that interventions

designed to address all forms of poverty become noble in the light of vulnerability measures. It therefore, becomes prudent to view the phenomenon of elaborate household expenditure not only in the present effects but the future repercussions as well.

Consumption Hypotheses

This section begins with discussions on the relevant economic hypotheses of consumption, to lay the foundation support to the framework of how individuals and households behave when faced with consumption decisions set such as those pertaining to social spending and welfare choices. It is important to note, here, that consumption hypotheses discussed below are driven from income hypotheses since both are sides of the same coin.

Keynesian consumption hypothesis

The first of the hypotheses is the Keynesian consumption hypothesis also known as the absolute income hypothesis (AIH), credited to John Maynard Keynes' work on the *General Theory of Employment* in 1936. According to Alimi (2013) and Friedman (2008), Keynes treated consumption on a very "common sense" level. He relied almost entirely on intuition to demonstrate the central principle of his consumption theory based on the acclaimed fundamental psychological law. He defined the fundamental psychological law of consumption as, "*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 the income.*" (Keynes, 1937).

Using this hypothesis, Economists posit that a relationship exists between people's consumption and their disposable income. To Keynes, rational consumers

increase their level of consumption upon an increase in income. Nonetheless, this increase in the level of consumption is not proportional to the increase in income (Butu, 2013). That is, not all proportional increase in income is consumed but a proportion also goes into savings.

It further assumes that as income increases, the rich consume a lesser proportion of their income and save a larger share Alimi (2013), Butu (2013). The poor on the other hand consume a relatively larger share of their income and consume a lesser share. Keynesian consumption hypothesis assumes that, the spending pattern of consumers does not change. In other words, marginal propensity to save (MPS) is stable. He also assumed that there would be no war, no hyper inflation, no drought, no financial crisis, thus, economic activities must be stable. In the assumed stable economy, there must be no government intervention

In relation to social spending, the hypothesis explains how individuals and households' expenditure become directly related to their incomes. Thus, the richer, the more elaborate is the expenditure on social events. As a result, one effortlessly identifies the economic status of an individual or a household based on the level of social spending. Therefore, by extending the assumption of fixed consumption pattern over time, social spending patterns would also be relatively fixed over time. Even though Keynes' work was found to be empirically true, two anomalies rose.

The first and foremost anomaly was detected when during the Second World War, households income increased together with a fall in consumption over a long period of time, as shown by, Friedman (2008). This anomaly proves that the relationship between consumption and income is not always direct and positive. Hence, a rising income may not imply a rising consumption expenditure and vice versa. The second anomaly arose from Simon Kuznets' aggregate data on consumption and income. Using five year moving averages of consumption spending, Kuznets (1946) showed that long run time series consumption data for the U.S. economy are characterised by a constant aggregate APC, a finding that

is inconsistent with Keynesian consumption theory. The above anomalies led to the development of other hypotheses such as the intertemporal choice, life cycle, permanent and relative income hypotheses.

Intertemporal consumption hypothesis

The Intertemporal Choice model was developed by Irving Fisher. The theory materialized in the 1940s, after the failure of the Keynesian model. Contrary to Keynes, Irving Fisher proposed a model which explained how rational consumers make choices concerning how much to consume today and save for tomorrow in order to maximize utility. He identified that people had a desire to consume more but are constrained by their income. Thus their budget constraint hindered them from consuming as much as they wanted. An increase in income allows the consumer to choose a good combination of (thus both present and future consumption). The consumer spreads consumption over both periods irrespective of the period the increase in income occurred, whether in period one or two (Bommier, 2006). This is because the consumer can lend or borrow between the two periods. This economic behaviour is known as consumption smoothening. According to Fisher, (see Read, 2004), consumption at any point in time depends on the present value of current and future income, where future income is discounted by the interest rate.

Also, according to Loewenstein and Thaler (1989), intertemporal choices are decisions in which the timing of costs and benefits are spread out over time, are both common and important (Bommier, 2006; Leland, 2002; Read, 2004). Thus, decisions such as how much schooling to obtain, whom to marry, whether to have children, how much to save for retirement, how to invest, whether to buy a house, and if so which house to buy all have strong intertemporal components. In this regard, the costs and benefits of whether to spend on social events or not are also spread over time. Therefore, an individual or household's decision to spend on

social events may not be as a result of the present costs and benefits but for the future.

The most important assumption under this hypothesis is the existence of the capital market where individuals and households could borrow at no cost (Loewenstein & Thaler, 1989) in the presence of interest rate (Ross, Westerfield, & Jaffe, 1990). As a result, households can borrow to consume more in the present against future consumption. Individuals or households become indifferent between current and future consumption if they could borrow or save at no cost but with interest rate. The implication of this hypothesis in the social spending context is that households and individuals can borrow to spend more on events such as weddings, funerals, child-naming ceremonies and parties and still have same level of consumption in the future. This may attempt to explain why some could borrow huge sums for their weddings and funerals in the present and pay later. However, the assumption of borrowing and saving at no cost is not existent in the real world as charges such processing fees, time spent, bureaucracy, etc are costs to borrowing and saving (Ross et al., 1990).

Life-cycle consumption hypothesis

This hypothesis is a variant of the life-cycle consumption hypothesis explained above. It was postulated by Franco Modigliani and Richard Brumberg in the early 1950's as said by Canova, Rattazzi, and Webley (2005). Ando and Modigliani (1963), Modigliani (1986) posited that the individual is faced with an income stream that is relatively lower at the beginning (youthful age) and end of his or her life (old age) and high in the middle age of the person. The theory also assumes that, the individual has a fairly constant consumption level (Shefrin & Thaler, 1988). Thus he or she is a net borrower during his early years. This is because consumption level is fairly higher than the income level of the individual during the beginning of his or her life (Börsch-Supan, 1992). During the middle

age, the individual saves to pay back what he borrowed and also saves toward the future (retirement) (see Börsch-Supan, 1992). This implies that consumption is expected to be stable over ones' life span even though there would be fluctuations in income. Consumption is therefore smoothed by borrowing and saving.

Moreover, Shefrin and Thaler (1988) and Jappelli and Pagano (1989) assumed that the household's current consumption is proportional to its resources, the factor of proportionality depending on the interest rate used to discount future income, taste and age of the household. Also, given the life span of an individual, his consumption is proportional to these resources (Browning & Crossley, 2001). However, the proportion of the resources that the consumer plans to spend will depend on whether the spending plan is formulated during the early or later years of his life.

Permanent income hypothesis

Friedman (1957a) used Irving Fisher's intertemporal choice to explain consumer behaviour. Just like Modigliani, he argued that consumption does not only depend on current disposable income as proposed by Keynes. In contrast with the life cycle consumption hypothesis which emphasized that income follow a regular pattern over a person's lifetime, the permanent income hypothesis (PIH) emphasizes that people experience random and temporary changes in their incomes from year to year (Butu, 2013). He further explained that consumption is determined by the expected income or permanent income (Friedman, 1957b). This expected income is an ex-ante variable which is not observable. Friedman, therefore, defined permanent income as the part of income that people expect to persist (Flemming, 1973; Friedman, 1957a, 1957b).

Permanent income is technically defined as the amount a consumer unit could consume while maintaining its wealth intact (Friedman, 1957a). Friedman's PIH is based on division of both income and consumption into a permanent and

transitory component. The permanent components are systematic and form the basis of the theory although they are not directly observable. The basic argument is that permanent consumption is a constant proportion of permanent income, that is, average income it expects to earn over its life horizon. Thus, consumption is relatively stable over time (Hayashi, 1982). According to Butu (2013), transitory consumption occurs when a temporal condition gives rise to an unexpected or unplanned consumption; examples include an unusual illness, unexpected price fall, bountiful harvest etc. The effect of transitory consumption tends to average out. The permanent component of consumption on the other hand is when consumption is planned or expected (Alvarez-Cuadrado & Van Long, 2011). In effect, people would mostly use their transitory incomes on items which are transitory in nature.

Therefore, it is expected that expenditure on social events will fall within the transitory consumption. By the arguments to separate permanent income from transitory income, it is argued that transitory consumption follows a random walk while permanent consumption is relatively stable. According to this view the cross-sectional correlation between saving and income is driven by transitory deviations from permanent income, while in the aggregate, most transitory components cancel out, leading to the close relation between consumption and income observed in time series data (Alvarez-Cuadrado & Van Long, 2011).

According to behavioural finance, (see Ross et al., 1990), people care less about how they invest their transitory income other than the principal money. This is called the house money effect. This could explain why would-be couples would spend ostentatiously on their weddings because they regard such as a once-in-a-lifetime event and must be celebrated beyond one's normal expenditure patterns. Similarly, families would spend huge sums of money to bury their dead because they consider that as one that befits the last respect and honour for the deceased and thus must be a lofty one.

Relative income hypothesis

Relative Income Hypothesis (RIH), developed by Duesenberry (1949), argues that consumers are not so much concerned about their absolute level of consumption as they are with their consumption relative to that of the whole population. That is, the individual utility is a ratio of consumption to the weighted average of the rest of the population's consumption (Mason, 2000). Thus, the individual's utility increases only when the consumption rises relative to that of the community average. This implies that, the average propensity to consume (APC) of the individual depends on his position in the income distribution. The ratio will be high for an individual whose income falls below the average income and will be low for an individual whose income falls above the average (Butu, 2013).

In the works of Duesenberry (1949), as cited in Alvarez-Cuadrado and Van Long (2011), he argued that for any given relative income distribution, the percentage of income saved by a family will tend to be a unique, invariant, and increasing function of its percentile position in the income distribution. Before Duesenberry, the idea that the overall level of satisfaction derived from a given level of consumption depends, not only on the consumption level itself, but also on how it compares to the consumption of other members of society had been explored in economics by Veblen (1934) who postulated the concept of conspicuous consumption. Conspicuous consumption has been defined as "an ostentatious display of wealth for the purpose of acquiring or maintaining status or prestige" (Veblen, 2017). It occurred when the aim of consumption was to demonstrate one's economic position to others (Alvarez-Cuadrado & Van Long, 2011), and move into social groups in order to benefit from social interactions.

The common ostentatious displays described by Veblen (1934) are believed to be influenced by materialism, competitiveness and a sense of powerlessness. Some researchers have often used the term interchangeably with status consumption, according to Corneo and Jeanne (1997), O'cass and McEwen (2004), status

consumption is "the motivational process by which individuals strive to improve their social standing through the conspicuous consumption of consumer products that confer and symbolize status both for the individual and surrounding significant others" (Chipp, Kleyn, & Manzi, 2011).

Another construct related to relative consumption is *pay-off complementarity*. Goods whose utility from consumption increases with increase in the number of friends, relatives and families are said to exhibit pay-off complementarity (Calvó-Armengol, Patacchini, & Zenou, 2009; Chung, Singh, & Lee, 2000; Dasgupta et al., 2000). According to Calvó-Armengol et al. (2009), unlike the pure private goods that exhibit rivalry, payoff complementary goods are less rivalry among relatives and friends where one rather would garner other consumers in order to maximise his/her subjective utility. In this regard, one's utility becomes a function of the consumption of others of that same commodity. Social events such as sports events, wedding ceremonies, visiting the cinema house, cultural festivals, religious meetings and so on exhibit pay-off complementarity such that more consumers are desirable and preferable to less. An attempt, therefore, to pool together other consumers the organisation and consumption social events become more of 'public pleasing' rather than how much one would have otherwise consumed.

Hence, conspicuous consumption, status consumption and pay-off complementarity constructs illuminate the relevance of the hypothesis of relative consumption and its societal repercussions. It is natural for one to attempt interrogating people's attitude towards social spending in the light of relative hypothesis with the attendant constructs of status and conspicuous consumption, and pay-off complementarity. Since, in most cases, ostentatious spending on weddings and funerals could widely be attributed to the tenets of relative consumption where an individual or household's consumption depends on its position in the status class or income distribution. Relative consumption will mostly occur when an individual is exposed to social networks, becomes

susceptible to reference group influence and social compliance (Ahuvia & Wong, 1998; O'cass & McEwen, 2004). In that case, relative consumption will run in tandem with social exchanges and social networking.

Theory of Social Exchange

The term "social exchange" is generally applied to interaction in which giving and receiving material or intangible resources is at least partially predicated on the expectation of return or "reciprocity" (Blau, 1968; Lawler & Thye, 1999; Uehara, 1990). According to Uehara (1990), the concept borrows heavily from economics and its attempt to understand man's behaviour in the formal marketplace. Like economists, most social exchange theorists view exchange as a category of "rational" behaviour in situations of scarcity (see Blau, 1964). That is, given multiple goals and limited resources, people will choose alternatives they perceive to be most consistent with their most valued goal or goal set and that provide the most efficient path to goal achievement. Social exchange theory assumes self-interested actors who transact self-interested actors to accomplish individual goals that they cannot alone (Lawler & Thye, 1999). According to the authors, Lawler and Thye, whether it is two lovers who share a warm and mutual affection, two corporations who pool resources to generate a new product, the of interaction remains after the initial contact.

Blau (1964) explained social exchange to involve favours that create diffuse future obligations, not precisely specified ones, and the nature of the return cannot be bargained about but must be left to the discretion of the one who makes it. Since there is no way to assure an appropriate return for a favour, social exchange requires trusting others to discharge their obligations (Uehara, 1990), (Blau, 1964, pp. 93-94). In the words of Hill (1992), social exchange theory assumes that human beings seek to maximize their rewards and minimize their costs in personal, corporate, and political relationships. Therefore, social behaviour will not be repeated unless it

has received positive reinforcement or unless it is perceived to bring the least cost alternative behaviours.

A major characteristic of the exchange theory is the rule of reciprocity. Thus, according to Ekeh (1974), reciprocal interdependence emphasizes contingent interpersonal transactions, whereby an action by one party leads to a response by another. That is, if a person supplies a benefit, the receiving party should respond in kind. This is because an exchange requires a bidirectional transaction-something has to be given and something returned (Cropanzano & Mitchell, 2005). In this tradition, a reciprocal exchange is understood as one that does not include explicit bargaining (Thibaut & Kelley, 2008). Rather, one party's actions are contingent on the other's behaviour. Kempny (1993) also argued that the process of reciprocity begins when at least one participant makes the first overture and if the other reciprocates, new rounds of exchange initiate. Once the process is in motion, each consequence can create a self-reinforcing cycle.

Uehara (1990) suggested that Ekeh was largely responsible for reintroducing the thesis that the structure of exchange relations affects the degree of group solidarity. Thus, according to Ekeh (1974), there exist two basic forms of elementary social exchange, based on two different principles of reciprocity : restricted and generalised social exchanges. The restricted exchange occurs within systems that "effectively or functionally divide a group into pairs of exchange units" Ekeh (1974). The mechanisms of reciprocity operate between the two individuals in the dyad ("mutual reciprocity" – A gives to B and receives back directly from B) (Uehara, 1990). He further argued that restricted exchange and mutual reciprocity lead ultimately not to solidarity but to tension and instability. Ekeh characterizes these exchange relations as based on a quid pro quo mentality that generates low levels of trust and the belief that "common investments and goods, from which individuals can gain indirectly and benefit, are not workable" (Uehara, 1990).

Moreover, a restricted exchange is said to be characterized by a high degree

of accountability in each partner's behaviour, according to Ekeh (1974). There is much effort to maintain an equality in exchange rates between partners and to settle inequalities within a short period of time. This type of relation creates intensely self-interested actors who engage in frequent conflict over the fairness of the exchange. Actors are distrustful of one another (Ellis, 2000; Uehara, 1990). In Ekeh's words, restricted exchange "is characterized by attempts to avoid offending the other partner; in spite of that, perhaps because of that fact, it is emotion-laden". The lack of flexibility in restricted exchange structures tends to suggest a high degree of social instability and rapid turnover in exchange partners.

On the other hand, however, while restricted exchange operates on the normative principle of direct or mutual reciprocity, generalised exchange is based on the or indirect reciprocity principle (that is, Mr. A gives to Mr. B but receives back from a third actor, Mr. C) (Uehara, 1990). According to Ekeh (1974), generalized exchange "occupies a unitary system of relationships in that it links all parties to the exchange together in an integrated transaction in which reciprocations are indirect, not mutual". In contrast to restricted exchanges, systems of generalized exchange are relatively devoid of emotional tension.

An important attribute of generalised exchange is trust of each other in the system. When people experience a sense of equity and fairness in their relationships with others, there is a greater potential for stability and cohesiveness in the relationships. However, when persons experience little or no reciprocity in their relationships, conflict, turmoil and even the dissolution of the relationship ensue (Cropanzano & Mitchell, 2005). A simple trust that some physical and emotional transfers would come from amongst members within a network is key to sustaining the relationship. Similarly, as compared to restricted exchange, generalized exchange engenders a high degree of social solidarity (Ekeh, 1974). The principle of indirect reciprocity implies generalized duties to others from whom one cannot directly expect the fulfilment of one's "rights". Instead, there is an

expectation that one's rights will be fulfilled by some other source (Uehara, 1990).

Therefore, the generalised social exchange promotes a 'one-another feeling' towards members in a group. Regardless of the complexities of the nature of the links that connect them, the theory explains why members would choose to remain in a group and engage in exchanges. Blau (1964) opined that people who are attracted to each other form groups as a result of mutual expectation of rewards, either monetary or social. Each person who enters the group expects a reciprocity of contributions and rewards; in exchange for the contributions he makes to the group, he expects to receive a reward of some kind (Overstreet, 1972). Conjoined to this theory is network analysis and the concept of social ties. The following paragraphs briefly consider the overlay features and how they interweave into the theory of social exchange.

Social network analysis

This integrates the concept of relationships into the exchange equation. In social network research, the person whose network is investigated is called ego, while the person that connects with the ego is called alter. A social network, according to Liebowitz (2007), is a social structure made up of nodes (individuals or organizations) which are linked by one or more specific types of relationship or interdependence such as values, ideas, financial exchange, trade friendship, kinship, social role as well as affection or action relationship. It is largely characterised as personal ties and connections that are built on trust (Porras, Clegg, & Crawford, 2004). Members within a social network trust one another to abide by the terms of the network into which they voluntarily enter. This trust is based on repeated interactions, exchange of resources and shared expectations of behaviour which is strengthened by the accepted norms of the network. Social networks have the following structural characteristics.

First and foremost is network size. density can be defined as alters that are

connected and know each other in the network of the ego (Frazier & Niehm, 2004). It can also be defined as the extent to which network members are connected to each other (Gilsing, Nooteboom, Vanhaverbeke, Duysters, & van den Oord, 2008). In other words, density is the proportion of the existing ties over all possible ties in the network. The density of a network forms part of the network characteristic and also identifies the number of ties that link the ego to alter.

Furthermore, literature has discovered that the homophily in social networks foster strong ties which are important for the entrepreneur to obtain information and financial resources (Jenssen & Koenig, 2002). This principle of homophily structures network ties of every type, including marriage, friendship, work, advice, support, information transfer, exchange, co-membership, and other types of relationship. The result is that people's personal networks are homogeneous with regard to many socio-demographic, behavioural, and intrapersonal characteristics. According to Bottomore and Brym (1989), homophily limits people's social worlds in a way that has powerful implications for the information they receive, the attitudes they form, and the interactions they experience. Ties between non-similar individuals also dissolve at a higher rate, which sets the stage for the formation of niches (localized positions) within social space.

Centrality of a node is one of the oldest and most widely used network constructs in social network studies. Network centrality refers to the position of the ego in the group from which the flow of information is spread (Frazier & Niehm, 2004). Centrality refers to the strategically important position of an actor in a network (Freeman, 1979). In other words, centrality is the degree to which a firm is involved with other firms in its network (Wasserman & Faust, 1994). Being central in a network of relationships between organisations provides the focal firm with a wide range from access to control of different types of resources (Gulati, 1999). In business, an ego that is central to communication will have early access to information and thus control the spread of information to alter.

The effect of network centrality on business performance has been empirically proven in previous studies. For example, Sparrowe, Liden, Wayne, and Kraimer (2001) indicated that a central position in the social network is likely to increase the individual's performance as well as improve business performance. It was also found that network centrality allowed the transfer of technological knowledge from alters to the entrepreneur and this led to more innovative success (Cantner & Joel, 2011). Similarly, Tsai (2001) provided evidence that network centrality permitted the transfer of knowledge from alters. Thus, it is clear that network centrality is crucial to shorten the distance in network relations and further allows the transfer of resources with minimal costs. These transfers are mostly influenced my the strength of ties that exist between the ego and the alters, as postulated by Granovetter (1983).

Granovetter (1983) defined the concept of a strong interpersonal tie in terms of the time and emotions invested in a relationship, as well as the reciprocity involved between participating actors. Typical examples of strong ties include friendship and familial relationships. Weak ties, by contrast, entail more limited investments of time and intimacy, subsuming an array of social acquaintances (Ruef, 2002). He maintained that weak ties are often more important in spreading information or resources because they tend to serve as bridges between otherwise disconnected social groups; strong ties lead to less efficient transmission processes because a large number of actors in the strong tie network also know each other, as well as knowing the focal actor (Ruef, 2002).

Social support

Social support is a functional characteristic of a social network. That is, social networks provide the basis for the flow of social support between individuals and entities. According to Shumaker and Brownell (1984), social support is an exchange of resources between at least two individuals perceived by the provider or

the recipient to be intended to enhance the well-being of the recipients. However, the concept in practice indicates a social support such as cash and material transfers from governments and non-governmental organisations (NGOs) to the poor and the disadvantage in society. In spite of this, the concept could be operationalized to represent an exchange between two or more individuals just as in Shumaker and Brownell (1984) and Uehara (1990).

The concept is basically classified into two broad categories: perceived and enacted social support (Ruef, 2002; Shumaker & Brownell, 1984; Uehara, 1990). Perceived social support has emerged as a prominent concept that characterizes social support as the cognitive appraisal of being reliably connected to others, as according to Barrera (1986). It attempts to capture individuals' confidence that adequate support would be available if it was needed or to characterize an environment as helpful or cohesive. The availability of social ties contribute to an individual's perception that he or she can rely on others for aid or emotional sustenance. This perception, for instance, influences people's psychological health and the consequential actions towards himself or herself and society.

On the other hand, received social support is conceptualized as actions that others perform when they render assistance to a focal person (Barrera, 1986). Authors like Tardy (1985) referred to enacted support as being distinct from available support that is measured in terms of perceived availability. Therefore, enacted support measures the tangible deeds offered to individuals in times of distress. These classes of support could be in the form of emotional, instrumental, tangible, informational, among others (Shumaker & Brownell, 1984). Emotional support, for instance, involves the provision of caring, empathy, love and trust. It is seen as the most important category through which the perception of support is conveyed to others (Langford et al., 1997). It is also defined as affective assistance. An affective transaction is one which imparts liking, admiration respect, and love (Langford et al., 1997). It is the warmth and nurture provided by sources of

social support which includes empathy, concern, affection, love, trust, acceptance, intimacy, encouragement, or care (House, 1981).

Theory of Human Need

The measurement of human welfare differs across various fields of human studies. As economists view welfare in a quantifiable consumption gain and well-being, sociologists, psychologists and other disciplines measure human welfare differently incorporating the intangible aspects of well-being which economists are unable to measure in monetary terms. However, contemporary economics tries to incorporate such intangible yet important determinants of human welfare (Max-Neef, Elizalde, & Hopenhayn, 1992). The welfare of an individual encompasses several needs, wants and desires. A more popular theory of needs is by Maslow (1943, 1954) who ranked human needs from the basic needs to self-actualization needs. Maslows theory of needs has over the years provided basis for policy on how to distribute resources efficiently based on the order of needs.

Human needs, scholars say, cannot be observed directly but must be inferred from universal motivation and from the consequences of non-gratification. Maslow distinguishes between "deficiency needs" and "growth needs" and assumes that the former reigns over the latter (Veenhoven, 2014). The notion of a need "hierarchy" has received little support in empirical research, but the assumption that these needs are part of a universal human nature still stands. From an evolutionary view, it is plausible that we share several needs with other animals, in particular the physiological needs and the need for safety (Maslow, 1954).

According to Maslow, an individual has five categories of needs: Fundamental needs, Safety and Security, Love needs, Esteem needs and Self-actualization needs. The fundamental needs include food, clothing and shelter while safety needs entails the need for protection of life against dangers which emanate from the human environment (Maslow, 1954). Love needs consist of need

to love and be loved and accepted by others. On the other hand, esteem needs include the sense of identity and self-dignity while self-actualization need is where an individual pursues self-fulfilment, dreams and aspirations in life. The theory, therefore, teaches us how an individual's welfare increases as he/she moves unto higher needs (Maslow, 1943, 1954).

Maslow suggested that the first and most basic need people have is the need for survival: their physiological requirements for food, water, and shelter. People must have food to eat, water to drink, and a place to call home before they can think about anything else. If any of these physiological necessities is missing, people are motivated above all else to meet the missing need. Have you ever had a hard time paying attention to what the professor is saying when you are hungry? Some of your future students may not have had breakfast or even dinner the night before. Free and reduced breakfast and lunch programs have been implemented in schools to help students meet some of their physiological needs.

After their physiological needs have been satisfied, people can work to meet their needs for safety and security. Safety is the feeling people get when they know no harm will befall them, physically, mentally, or emotionally; security is the feeling people get when their fears and anxieties are low. The third level of the pyramid are needs associated with love and belonging. These needs are met through satisfactory relationships – relationships with family members, friends, peers, classmates, teachers, and other people with whom individuals interact. Satisfactory relationships imply acceptance by others. Having satisfied their physiological and security needs, people can venture out and seek relationships from which their need for love and belonging can be met.

Once individuals have satisfactorily met their need for love and belonging, they can begin to develop positive feelings of self-worth and self-esteem, and act to foster pride in their work and in themselves as people.The fifth level of Maslow's pyramid represents an individual's need to know and understand. According to

Maslow's hierarchy, this motivation cannot occur until the deficiency needs have been met to the individual's satisfaction. Aesthetics refers to the quality of being creatively, beautifully, or artistically pleasing; aesthetic needs are the needs to express oneself in pleasing ways. Decorating your living room, wrapping birthday presents attractively, washing and waxing your car, and keeping up with the latest styles in clothing are all ways of expressing your aesthetic sense. At the top of the pyramid is the need for self-actualization, which is a person's desire to become everything he or she is capable of becoming – to realize and use his or her full potential, capacities, and talents. This need can be addressed only when the previous six have been satisfied. It is rarely met completely; Maslow (1943) estimated that less than 1 percent of adults achieve total self-actualization.

In his pyramid of human needs, as shown in Figure 1, Abraham Maslow puts emphasis on the hierarchy of needs, stating that some are more urgent than others. On the base of the pyramid he places food, water, and shelter. On a second level, he places the need for safety and security, followed by belonging or love. The need for self-esteem is found on a fourth level, and finally on a fifth and final level, personal fulfilment. Maslow argues that each human-being is trying to meet needs on a certain level at any one time. An individual looking to meet needs for food and water will not be looking to meet needs of belonging, love or self-esteem. Only when the needs on the lower end of the Pyramid are met, will humans look to meet their need for personal fulfilment (Danielsen, 2005). This is however criticised by modern sociologists and economists like Burton, Rosenberg and Max-Neef. They have argued that theory places priority on loftier needs like self-esteem, and love than basic needs like food, shelter and clothing.

For instance, John Burton, applying human needs theory on protracted, social conflicts, looked at how universal human needs often are neglected, leading groups to use violence to claim their rights and satisfying their needs (Burton, 1990). In what is really a compatibility of human needs, Burton argues that education and

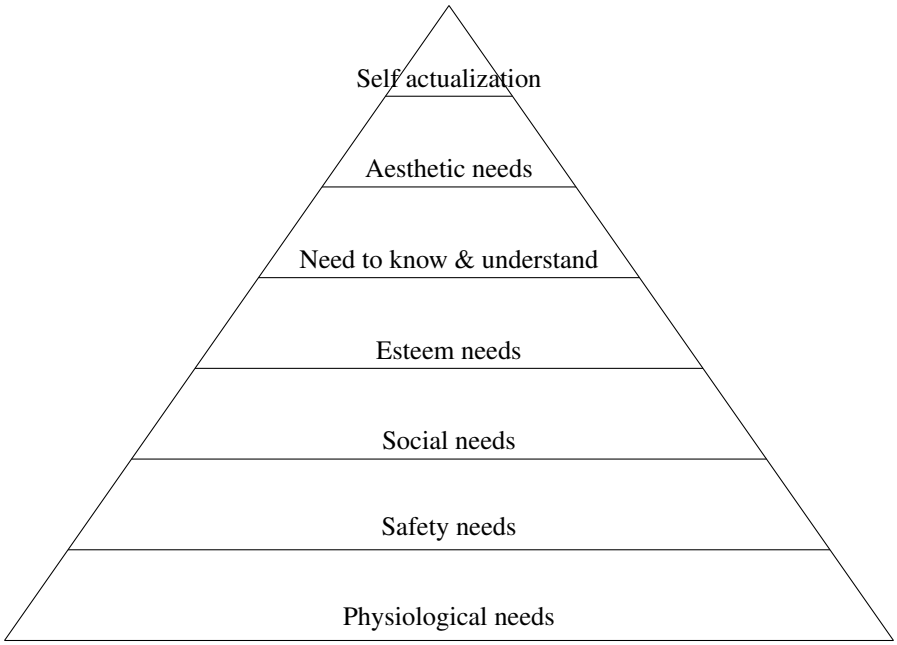

Figure 1: Maslow's pyramid of human needs
Source: Maslow (1943)

culture make parties manipulate the issues and dehumanising the other parties. For Burton, the concept of basic human needs offered a possible method of grounding the field of conflict analysis and resolution in a defensible theory of the person (Rubenstein, 2001). According to Rubenstein (2001), Burton's view was that the needs most salient to an understanding of destructive social conflicts were those for identity, recognition, security, and personal development. Over time, however, he tended to emphasize the failure of existing state systems to satisfy the need for identity as the primary source of modern ethno-nationalist struggles.

In Marshall Rosenberg's approach, human needs are universal and meeting them is essential to human survival and well-being (Danielsen, 2005). Rosenberg groups the needs in sub-groups, and is open to the existence of needs beyond what he has defined. He states that our education and culture often alienate us from connecting with our real needs, and through Non-violent Communication, he proposes a model for connecting with our own and others' needs, an approach he applies in all levels of society and which he has used in mediation in several countries.

However, in her article post, "Turning Maslow's Hierarchy on Its Head", Martin (2016) argued that, "We mistakenly assume that there's no way a person can or should possibly worry about self-esteem if they're hungry". According to Martin, it is not surprising to find the poor in deprived regions who are active on social media even in times of unmet basic needs. It indicates how the poor would want to strive for self-esteem and self-identity among his cohort even when some fundamental needs have not been met. The implication is that individuals' behaviour are likely not to follow the hierarchical order of human needs. This would possibly explain some adverse relative consumption and ostentatious living by those who lack the means to prosecute them. A possible reason for developing countries spending lavishly on luxury phones, cars, leisure and so forth.

Empirical Literature Review

This section reviews empirical works in the context of their focus, methodology and, most importantly, their findings in relation to this work. Here, empirical literature pertaining to measures of household welfare from the global, continental and Ghanaian perspectives are reviewed. In addition, works in the area of social spending are also reviewed.

To begin with, World Health Organisation's report has shown that the proportion of the global population living below the extreme poverty line dropped by half between 2002 and 2012, from 26 to 13 per cent (World Health Organization, 2016). This translated to one in eight people worldwide living in extreme poverty in 2012, it further stated. This shows that the global poverty levels are falling, however, poverty remains widespread in sub-Saharan Africa, where more than 40 per cent of people lived on less than 1.90 US dollars a day in 2012. In a similar report, in 2013, 767 million people are estimated to have been living below the international poverty line of US$ 1.90 per person per day (World Health Organization, 2016).

In 2013, a substantial decline in extreme poverty was in two regions, East Asia and Pacific (71 million fewer poor) and South Asia (37 million fewer poor), that showed cuts in the extreme poverty headcount ratio of 3.6 and 2.4 percentage points, respectively . The former is explained in large part by lower estimates on China and Indonesia, whereas the decrease in South Asia is driven by India's growth. The number of poor people in Sub-Saharan Africa fell by only 4 million between 2012 and 2013, a 1.6 percentage point drop which still leaves the headcount ratio at a high rate of 41.0 percent.

Putting the spotlight on Ghana, Teal (2005) found that between 1987/1988 to 1997/1998 the largest and poorest section of Ghanaians: farmers, saw a fall in their expenditures over the decade of some 3 percent. In contrast, the urban self-employed and wage employees saw rises in excess of 17 percent. Households headed by wage employees or those with urban self-employment have close to twice the per capita expenditure of farmers. The average consumption measure, which rose by 11 per cent indicating that poverty fell. However, using the Growth Incidence Curve (GIC) approach, the author established that while, on the average, per capita consumption rose across all percentiles of the distribution this was not true for farmers who are, on the average, the poorest. While on average growth was pro-poor within the poor, there were substantial gainers and losers. Ghana Statistical Service (2014) also revealed that poverty levels dropped by half, from 56 to 24 percent, between 2000 and 2014, achieving the Millennium Development Goal One (MDG 1) before its 2015 deadline. Is this decline a reflection among the poor?

Furthering the discussion of welfare in Ghana, Diallo and Wodon (2007) investigated the reduction in poverty for Ghana using the assets poverty approach. Using the 1997 Core Welfare Indicators Questionnaire (CWIQ) survey, they obtained a general reduction in poverty with estimates for urban and rural areas at 55.2 percent and 25.0 percent respectively. A result confirmed by Coulombe and

Wodon (2007) using the consumption poverty approach. In latter's work, the trend in asset poverty was based on ownership variables that indicated ownership or a lack thereof, without taking into account the value of the assets owned. It is likely that in a period of high growth, households will buy better televisions or radios over time, and this increase in the quality (and price) of the assets owned by households is not captured in an analysis of asset-based poverty.

A further analysis by Coulombe and Wodon (2007) revealed that the national asset-based headcount of poverty had decreased from 45.7 percent in 1997 to 38.9 percent in 2003. However, for the same period, they argued that, without exceptions, all of the inequality measures show an increase over time, as was also found by Annim, Mariwah, and Sebu (2012), which in some cases is quite large in comparison with other West African countries, like Cote d'Ivoire (Glewwe, 1991).

The above works on poverty in Ghana failed to consider the quantile distribution of poverty among the poor and the non-poor over the period. Though, works by Annim et al. (2012), Diallo and Wodon (2007), Teal (2005) established a pro-poor growth, an in-depth analysis of the various quantiles would tell the story about how welfare of the different quantiles have been affected over the period. Moreover, These analysis ignored to include social needs like social spending which is also consumed by most households, sometimes, ahead of food, clothing and shelter.

Turning to households' expenditure on social events like weddings, funerals, naming ceremonies and so forth, Case et al. (2008) estimated that, in South Africa households are expected to spend a third of household permanent income on funerals, an amount shaded up or down according to the status of the deceased. They set out to investigate how funerals place households at risk, taking potentially productive resources and turning them into consumption (coffins, meat, groceries etc.). There narrative is no different in China, as Chen and Zhang (2012) also found that frequent ceremonies organized by fellow villagers affect early child

development. In specific terms, the squeeze effect results in lower height-for-age z-score, higher probability of stunting and underweight for children aged 1-5.

Basing on the theory of costly relative consumption, Chen and Zhang (2012) showed that the interaction between relative status and ceremony frequency (and intensity) serves as the key variable that identifies squeeze effect resulting in negative child health outcomes. They further stated that households fully anticipating future ceremonies smooth nutritional intake by eating less and at lower quality before the events; second, anticipated large gift expenditure in the near future may lead to lower food consumption today to save money.

Likewise, in Kenya, Mango et al. (2009) examining factors that push people into and pull them out of poverty using a participatory poverty assessment methodology known as the 'Stages of Progress Methodology' found that large funeral expenses force households to liquidate productive assets and fall into poverty.This conclusion also ignores the present utility derived and the consequential improvement in poverty levels as has been stated that public consumption at funerals is a way of fulfilling desires that are identified with highly valued lifestyles, a visual and material realisation of the image of a good life (De Witte, 2003). Just as Mango et al established, Jufare (2008) intimated that nearly all the households who held funeral and wedding ceremonies ended up having critical food shortage. However, evidence, according to Jufare, suggests that as much as investment in social relations helps to cope with risks and shocks, it may also increase household susceptibility to them when there is no commensurate reciprocation.

Though resources are scarce in developing countries, large social spending has been widely observed. The welfare consequences of negative externality might hinder efforts to reduce poverty for households living close to subsistence, as money spent on socially visible goods is not available for food, health care, or productive investments (Browning & Crossley, 2001; Chipp et al., 2011; Mango et al., 2009).

Specifically, the resulting negative externalities may reduce well-being. According to Chen (2014), share of gift and festival expenditure, overtime, increases very fast. Comparing share of gift and festival expenditure among four income quartiles in each wave, the quartiles spread more and more widely. The poorer a household, the higher share of consumption is devoted to social spending, and the higher increase in the share of gift and festival expenditure is observed between 2004 and 2009. This indicates the influence of relative consumption. However, unless a vulnerability analysis into the future is made, Chen's assertion would also imply a better living for the poor.

Furthermore, Rao (2001) used both qualitative and quantitative data from a case-study of three South Indian villages to show that festivals are important public goods in the village but neither a pure entertainment motive, nor an altruistic desire to contribute to a public event seem to explain their size. Households who spend money on festivals, everything else held equal, are, however, able to get generate tangible rewards – lower prices on food, higher social status and more invitations to meals from other families (Rao, 2001). This indicates that active participation in festivals generates private economic and social returns which helps resolve a potential free-rider problem.

Again, Rao (2001) demonstrates that expenditures on weddings and festivals can be explained by integrating an understanding of how identity is shaped in the Indian context with an economic analysis of decision making under conditions of extreme poverty and risk. Rao further argued that publicly observable celebrations have two functions: they provide a space for maintaining social reputations and webs of obligation, and they serve as arenas for status- enhancing competitions (Rao, 2001). That the first role is central to maintaining the networks essential for social relationships and coping with poverty, while the second is a correlate of mobility that may become more prevalent as incomes.

In addition, funerals, according to Jindra and Noret (2011), are part and parcel

of the moral orders and "moral economies" of Africa, with the notions and powers of the living and the dead tightly connected to the social organization and hierarchy of a society, expressed in the reciprocities and consumption practices of everyday life. Indeed, the crucial link between the living and the dead should be part of the discussion of African political and economic change (Jindra & Noret, 2011).

The works of Rao and the duo, Jindra and Noret, have shown the influence of status seeking in social spending in both Asia and Africa. Their works acknowledge the existence of social networks that provide platforms for families and individuals to showcase their status-seeking spending. However, they were silent on the relevance of social exchanges that give individuals the morale to stay in a social network and spend on others within the network. It is actually the reciprocities (including status) that would accrue to the spending-individual that would influence social spending (Veblen, 1934, 2017). Hence, the observed excesses of spending could be captured as one's social support (contribution) to others within the network (Ekeh, 1974; Uehara, 1990).

Now, in Ghana, De Witte (2003) and Van der Geest (2006) evoke the ambiance of lavish display of Asante funerals, where huge sums of money are spent to organize memorable events whose richness will impress the attendees. According to these authors, among the Asantes, the disposal of the corpse acquires a more prominent status the longer it stays in a mortuary before burial, as does the use of various media to capture multiple images of the obsequies, just as Jindra and Noret (2011) found. In fact, contemporary funerals produce an idealized image of the deceased to be remembered. The dressing and preparation of the corpse is therefore subject to much attention: it must present an image of the good life (Jindra & Noret, 2011). The study by De Witte, Van der Geest and others like Agyekum (2006), Owusu-Frempong (2005) and Salm and Falola (2002) were mainly qualitatie which do not estimate, in quantifiable terms, the effect of social spending on household welfare.

Finally, like De Witte (2003), Mazzucato et al. (2006) found that funerals are becoming multi-sited events as migrants from developing countries play important roles in the organization, financing and practice of funeral ceremonies in their home countries. Funerals thus give rise to flows of money, goods and people across national borders, ultimately affecting different economies around the world. This is part of a myriad of reasons for the rising cost of funerals in Ghana such that in 2007, the average funeral cost between US$2000 and US$3500 yet about 32 percent of Ghanaians were poor living below US $2 a day (Butu, 2013).

Chapter Summary

This chapter reviewed relevant theories and concepts related to human need, consumption patterns, poverty and welfare as well as empirical works in the context of their focus, methodology and, most importantly, their findings in relation to social expenditure and welfare. The theories included consumption hypotheses (absolute income, intertemporal choice, life-cycle consumption, the permanent income and relative income hypotheses).

Furthermore, the theory of social exchange was reviewed. This theory is generally applied to interaction in which giving and receiving material or intangible resources is at least partially predicated on the expectation of return or reciprocity These laid the foundation to the theoretical framework of how individuals and households behave when faced with consumption decisions set such as those pertaining to social expenditure and welfare choices. Also, different constructs of the human need theory reviewed showed the ranking of human needs and its implication on individuals' socio-economic behaviour with regard to social spending.

In the empirical literature, works done in Asia and Africa by authors like De Witte, Chen and Zhang, Jufare and Mango et al showed how social spending places households at risk as they take potentially productive resources and turning

them into consumption (coffins, meat, groceries etc.). In China, Chen and Zhang (2012) found that frequent ceremonies organized by fellow villagers affect early child development. They further stated that households fully anticipating future ceremonies smooth nutritional intake by eating less and at lower quality before the events; second, anticipated large gift expenditure in the near future may lead to lower food consumption today to save money. The studies in Ghana by De Witte and Mazzucato et al focused on funerals and how they affect individuals and households. The following are the summary of the gaps identified in the empirical literature reviewed in this study.

1. Generally, studies in this area have only focused on one social event at a time. That is, none has considered the aggregate effect of spending on wedding, funeral and festival on household welfare.

2. Studies reviewed did not consider quantile analysis of the pro-poor growth in Ghana while considering the effect household social spending on present poverty levels which could provide detail insight into the distribution of effect within groups of poor and non-poor

3. Works on social spending did not consider its effect on vulnerability to expected poverty

4. Empirical literature have not considered social support in any quantitative analysis and so as to examine its effect on welfare through social spending

5. Lastly, works reviewed did not also consider how social support affect vulnerability to expected poverty through social spending

CHAPTER THREE

METHODOLOGY

Introduction

This chapter discusses the research design, methods and analytical techniques that were employed in the study to achieve the set objectives. A step-by-step walk from the research design through the generation of variables to data analysis is presented. The chapter is organised into the following sections: Research paradigm, Data sources, Definition of variables, Data management and generation of variables, Empirical model specification, and Estimation techniques.

Research Design

Research design refers to the overall strategy to integrate the different components of the study in a coherent and logical way; it constitutes the blueprint for the collection, measurement, and analysis of data (Kumar, 2005). It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of data (Kerlinger, 1986). According to Kerlinger, a research design serves two functions: (1) to detail the procedures for undertaking a study; and (2) to ensure that, in the case of causality, the independent variable has the maximum opportunity to have its effect on the dependent variable while the effect of extraneous and chance variables is minimised. In the first function, a research design should outline the logistical details of the whole process of the research while the second function ensures that the independent variable has the maximum chance of affecting the dependent variable and that the effects of extraneous and chance variables are quantified and/or controlled (Kerlinger, 1986).

This study follows the quantitative paradigm which uses quantitative data to test hypotheses (Creswell & Creswell, 2017). Therefore, quantitative research designs are consequently discussed. According to Kumar (2005), some of the

commonly used designs in quantitative studies can be classified by examining them from three different perspectives: (a) the reference period of the study; (b) the nature of the investigation; (c) the number of contacts with the study population. Studies are categorised based on the reference period as: (1) retrospective; (2) prospective; (3) retrospectiveprospective. Lastly, on the basis of the nature of the investigation, study designs in quantitative research can be classified as: (4) experimental; (5) non-experimental; (6) quasi- or semi-experimental. Based on the number of contacts with the study population, designs can be classified into three groups: (7) before-and-after studies; (8) longitudinal studies; (9) cross-sectional studies.

However, this study adopts a cross-sectional approach where data for different snapshot years are analysed to ascertain the effect of social spending on household welfare in Ghana. Cross-sectional studies, also known as one-shot or status studies, are the most commonly used design in the social sciences. This design is best suited to studies aimed at finding out the prevalence of a phenomenon, situation, problem, attitude or issue, by taking a cross-section of the population (Bordens & Abbott, 2002; Kumar, 2005; Miller & Salkind, 2002). They are useful in obtaining an overall picture as it stands at the time of the study.

Data Type and Source

This study uses a secondary data from the fourth, fifth and sixth rounds of the Ghana Living Standard Survey (GLSS 4 – 6) obtained from Ghana Statistical Service. The Ghana Living Standard Survey is a regular nationwide survey designed to generate information on living conditions in Ghana. It collects household and individual information on demographic characteristics, education, health, employment and time use, migration and tourism, housing conditions, household agriculture, access to financial services, asset ownership and so on. This is a World Bank initiated project, according to Ghana Statistical Service (2014),

that is intended to make available relevant data for policy and decision-makers to measure socio-economic indicators and appreciate their determinants. Programmes could then be developed and implemented to address challenges in the various sectors of the economy such as health, education, economic activities and housing conditions, among others.

According to Ghana Statistical Service (2014), again, the fourth and fifth rounds were conducted in 1998/99 and 2005/06 respectively. The sixth round of the GLSS was conducted between October 2012 and October 2013. While maintaining the questionnaires used during the fifth round, three new modules were introduced in the sixth round. These are the Labour Force Module which focused on employment and time use, a module on Household Access to Financial Services and a module on Governance, Peace and Security. The sixth round had a total sample size of 18,000 households selected for the survey, out of which 16,772 were successfully interviewed in 1,200 enumeration areas and 71,524 household members captured across the country. The fifth round had 8,687 households successfully interviewed in 580 enumeration areas, containing 37,128 households members (Ghana Statistical Service, 2008). Lastly, the fourth round covered a nationally representative sample of 5,998 households containing 25,855 household members (Asenso-Okyere, Twum-Baah, Kasanga, Anum, & Pörtner, 2000).

Empirical Model Specification

The study draws its model from the works of Chaudhuri (2003), Coulombe and Wodon (2007), Deaton and Zaidi (2002), Shimeles and Woldemichael (2013). The empirical welfare model is specified in Equation (1) as:

$$lnWelfare = \beta_0 + \beta_1 lnSocHHEXP + \beta_2 Age + \beta_3 Agesq + \beta_4 HHsize + \beta_5 Sex + \beta_6 Marstatus + \beta_7 Educ + \beta_8 Industry + \beta_9 EmpType + \beta_{10} Remit + \beta_{11} House + \beta_{12} Car + \beta_{13} Locality + e \quad (1)$$

A reduced equation is also specified due to bi-causality, as was done in Donkoh, Alhassan, and Nkegbe (2014), between the welfare of a household and the amount spent on social events like weddings, funerals and so forth. This results in endogeneity bias. That is, a poor household, essentially having a lower welfare, is likely to cause them to spend low amounts on weddings, funerals, etc., whereas households with higher welfare would be spending more. The reduced equation is also stated in Equation (2) as:

$$lnSocHHEXP = \beta_0 + \beta_1 lnWelfare + \beta_2 Age + \beta_3 Agesq + \beta_4 Sex + \beta_5 Marstatus + \beta_6 Educ + \beta_7 Industry + \beta_8 Remit + \beta_9 Religion + \beta_{10} Ethnic\_grp + \beta_{11} Region + e \quad (2)$$

The structural equations (1) and (2) were used to analyse the disparity in additions to welfare between the poor and the non-poor households in objective one likewise in determining the future vulnerability to poverty in the second objective.

In objectives three and four, each source of social support is introduced into the structural equation (1) separately. The structural equation becomes:

$$lnWelfare = \beta_0 + \beta_1 lnSocHHEXP + \beta_2 Support + \beta_3 Support \times lnSocHHEXP + \beta_4 Age + \beta_5 Agesq + \beta_6 HHsize + \beta_7 Sex + \beta_8 Marstatus + \beta 9 Educ + \beta_{10} Industry + \beta_{11} EmpType + \beta_{12} Remit + \beta_{13} House + \beta_{14} Car + \beta_{15} Locality + e \quad (3)$$

With regard to the third objective, the author used Equation (3) to determine the joint effect of expenditure on social events and each independent object of social support on household welfare. Subsequently, in objective four, the vulnerability to poverty as a result of the joint effect for each source of social support was determined.

Definition of Variables

Table (2) defines the variables included in the statistical analysis. The unit of analysis in this study was the household. Thus, all variables included in the Table 2 are at the household level, taking from the heads of households as a representation of the entire household's characteristics and decisions as in most economic analysis. All included variables emanates from the works of Bagarani, Forleo, Zampino, et al. (2009), Chen and Zhang (2012), Coulombe and Wodon (2007), Haq, Arshid, and Anwar (2009), Pachauri (2004), and which make intuitive sense in the context of this study.

Table 2 – *Definition of Variables*

Variable	**Description / Measurement**	**Expected signs**		
		Welfare	Social spending	Consumption
lnWelfare	Welfare (in currency units)–Total household expenditure per adult equivalence (in natural log)		+	
lnconsumption	Per capita consumption expenditure less social spending (in currency units;log)			
lnSocHHEXP	Household social spending (log)	+		+
Age	Age of head of household Completed number of years	+	+	+
Agesq	Square age of head of household	-	-	-
HHsize	Household size Number of individuals in a household	-	+	-
HHsizesq	Square of household size	+	-	+
Sex	Sex of head of household 0= Female , 1= Male	-	+	+
Car	Household ownership of a car 0= No , 1= Yes	+		+
House	Household ownership of a house 0= No , 1= Yes	+		+
Remit	Remittance income 0 = No, 1 = Yes	+	+	+
Ethnic_grp	Ethnic group of household head 0=Akan 1=Non Akan	±	-	±
Marstat	Marital status of household head 0=Never married, 1=Married/cohabiting, 2=Divorced/separated/widowed	±	±	±

Table 2, continued

Empstat	Employment status of household head	±	±	±
	0=Wage/salaried worker,. . . , 5=Other			
Industry	Industry of household head	±	±	±
	0=Agriculture, . . . , 9=Other services			
Religion	Religion of household head	±	±	±
	0= No religion, 1=Christianity, 3=Others			
Region	Region	±	±	±
	1=Western,. . . , 10=Upper West			
Educ	Educational level of head of household	+	-	+
	0=No education, . . . , 4=Non-formal/Other			
Family_sup	Support to members from one's family	-		+
	1=Very weak, 2=Weak, 3=Strong			
Village_sup	Support to members of one's village	-		+
	1=Very weak, 2=Weak, 3=Strong			
Ethnic_sup	Support to members from ethnic group	-		+
	1=Very weak, 2=Weak, 3=Strong			
OutsideEthnic_sup	Support to outsiders of ethnic group	-		+
	1=Very weak, 2=Weak, 3=Strong			
Religious_sup	Support to members of one's religion	-		+
	1=Very weak, 2=Weak, 3=Strong			
Club_sup	Support to members of one's club	-		+
	1=Very weak, 2=Weak, 3=Strong			
Business_sup	Support to business community	-		+
	1=Very weak, 2=Weak, 3=Strong			

Source: Author(2018)

Data Management and Generation of Variables

The Stata statistical software, version 13, was used for the data management and statistical analysis. In the first place, all missing observations were dropped till the sample size stabilised in each round. The household sample size for the sixth round the final sample size was 15,568 (approximately 93 percent of the sample remained). For the fifth round it dropped to 7,759 (approximately 89 percent remained) while for the fourth round, it declined to 5,556 (approximately 93 percent remained). Thereafter, the following transformations were carried out. So, for all the rounds of the GLSS, the aggregated household dataset, the updated

poverty dataset, Section 11d, and Section 13e (GLSS 6 only) datasets were merged accordingly.

Also, for GLSS 4, 5 and 6, 1 cedi was added across board to all observations of social spending as a factor. This is harmless because during the period of the fourth and fifth rounds of the GLSS, it was never possible to spend 1 cedi since the smallest denomination (coin) was 10 cedis. Therefore, 1 cedi then would be equivalent to not spending anything. This was done so that none of the observations will drop out when normalising through natural log. Moreover, in order to make social spending an exogenous variable to household consumption in estimating the vulnerability to expected poverty (VEP) in objectives two and four of the study, social spending was subtracted from the total household consumption. This, in a way, makes social spending independent of household consumption and could be treated as 'shock' variable when introduced into the consumption function.

Furthermore, in Section 13e of GLSS 6 dataset there were variables on the objects of trust (family, village, ethnic group, etc.) and the community lifestyle. Trust was measured on a scale of 1 - 4 as: 1=*At all times*, 2=*Most of the time*, 3=*Sometimes*, 4=*Not at all*. Community lifestyle variable was also captured on a scale of 1 - 4: 1=*Mostly help each other*, 2=*Some do, others don't*, 3=*Don't know*, 4=*Mostly mind their own business*. These two variables were used in the creation of the social support variables. The four-level objects of trust were multiplied with the variable community lifestyle variable. The resultant index was recoded as *Very weak support* if product equals *12 & 16*; *Weak support* if product equals *3, 4, 6, 8, & 9*; and *Strong support* if product equals *1 & 2* .Lastly, *Remittance income* was coded into a dummy variable where households that zero amount were coded as 0 with the value-label *NO* and 1 with value-label *Yes* for any positive amount.

Estimation Techniques

This subsection presents the statistical estimation techniques employed in analysing the cleaned data to achieve the set objectives and test hypotheses. These techniques include, Three Stage Least Squares estimator, Simultaneous Quantile Regression and Vulnerability to Expected Poverty (Feasible Generalised Least Squares approach).

Three Stage Least Squares (3SLS)

First, the ex-post simultaneous equations, (1) and (2), were estimated using 3-Stage Least Square (3SLS). Unlike a 2-stage least squares approach as in Donkoh et al. (2014), a 3-stage least square is more efficient, according to Cameron and Trivedi (2005). As a result of some of an explanatory variable being the dependent variable of other equation in the system, the error terms among the equations are expected to be correlated. 3SLS uses an instrumental-variables approach to produce consistent estimates and generalized least squares (GLS) to account for the correlation structure in the disturbances across the equations (Cameron & Trivedi, 2005; Zellner & Theil, 1962).

According to Zellner and Theil (1962), three stage least squares estimates are obtained by estimating a set of nonlinear (or linear) equations with cross-equation constraints imposed, but with a diagonal covariance matrix of the disturbances across equations. This is the constrained two stage least squares estimator.They further explained that the parameter estimates thus obtained are used to form a consistent estimate of the covariance matrix of the disturbances, which is then used as a weighting matrix when the model is re-estimated to obtain new values of the parameters. The following mathematical explanation follows from Zellner and Theil (1962).

$$\begin{bmatrix} X'y_1 \\ X'y_1 \\ \vdots \\ X'y_M \end{bmatrix} = \begin{bmatrix} X'Z_1 & 0 & \cdots & 0 \\ 0 & X'Z_2 & \cdots & 0 \\ \vdots & \vdots & & \vdots \\ 0 & 0 & \cdots & X'Z_M \end{bmatrix} \begin{bmatrix} \delta_1 \\ \delta_2 \\ \vdots \\ \delta_M \end{bmatrix} + \begin{bmatrix} X'\mu_1 \\ X'\mu_1 \\ \vdots \\ X'\mu_M \end{bmatrix} \tag{4}$$

which is a system of AM equations involving

$$n = \sum_{n=1}^{M} n_\mu \tag{5}$$

parameters. Next, we write δ for the n-element column vector of parameters on the right of (4). Then we can apply generalized least squares to estimate all elements of δ simultaneously. For this purpose we covariance matrix of the disturbance vector of (4).

$$V \begin{bmatrix} X'\mu_1 \\ X'\mu_1 \\ \vdots \\ X'\mu_M \end{bmatrix} = \begin{bmatrix} \sigma_{11}X'X & \sigma_{12}X'X & \cdots & \sigma_{1M}X'X \\ \sigma_{21}X'X & \sigma_{22}X'X & \cdots & \sigma_{2M}X'X \\ \vdots & \vdots & & \vdots \\ \sigma_{M1}X'X & \sigma_{M2}X'X & \cdots & \sigma_{MM}X'X \end{bmatrix} \tag{6}$$

where $\sigma_{\mu\mu'}$ is the contemporaneous covariance of the of the structural disturbances of the μth and μ'th equation:

$$E(u_\mu u_{\mu'}) = \begin{bmatrix} \sigma_{\mu\mu'} & 0 & \cdots & 0 \\ 0 & \sigma_{\mu\mu'} & \cdots & 0 \\ \vdots & \vdots & & \vdots \\ 0 & 0 & \cdots & \sigma_{\mu\mu'} \end{bmatrix} = \sigma_{\mu\mu'} I, \tag{7}$$

I being the unit matrix of order T. Also, we need the inverse of the co-variance matrix (6)

$$V^{-1}\begin{bmatrix} X'\mu_1 \\ X'\mu_1 \\ \vdots \\ X'\mu_M \end{bmatrix} = \begin{bmatrix} \sigma^{11}(X'X)^{-1} & \sigma^{12}(X'X)^{-1} & \cdots & \sigma^{1M}(X'X)^{-1} \\ \sigma^{21}(X'X)^{-1} & \sigma^{22}(X'X)^{-1} & \cdots & \sigma^{2M}(X'X)^{-1} \\ \vdots & \vdots & & \vdots \\ \sigma^{M1}(X'X)^{-1} & \sigma^{M2}(X'X)^{-1} & \cdots & \sigma^{MM}(X'X)^{-1} \end{bmatrix} \tag{8}$$

where $\sigma^{\mu\mu'}$ is an element of the inverse of the contemporaneous covariance matrix of the structural disturbances:

$$[\sigma^{\mu\mu'}] = [\sigma_{\mu\mu'}]^{-1} \tag{9}$$

A straightforward application of generalized least squares gives the following result:

$$\begin{bmatrix} \sigma^{11}(X'X)^{-1}X'y_1 & + & \cdots & + & \sigma^{1M}(X'X)^{-1}X'y_M \\ \cdots\cdots\cdots\cdots & \cdots & \cdots & \cdots & \cdots\cdots\cdots\cdots \\ \sigma^{M1}(X'X)^{-1}X'y_1 & + & \cdots & + & \sigma^{M2}(X'X)^{-1}X'y_M \end{bmatrix}$$

Thus, the three-stage least squares estimator is defined as:

$$\hat{\delta} = \begin{bmatrix} s^{11}Z_1'X(X'X)^{-1}X'Z_1 & \cdots & s^{1M}Z_1'X(X'X)^{-1}X'Z_M \\ \vdots & & \vdots \\ s^{M1}Z_M'X(X'X)^{-1}X'Z_1 & \cdots & s^{MM}Z_M'X(X'X)^{-1}X'Z_M \end{bmatrix}^{-1} \times \begin{bmatrix} \sum s^{1\mu}Z_1'X(X'X)^{-1}X'y_\mu \\ \sum s^{M\mu}Z_M'X(X'X)^{-1}X'y_\mu \end{bmatrix} \tag{10}$$

It is therefore observed that there is a gain in asymptotic efficiency in relation to two-stage least squares only if $[\sigma_{\mu\mu'}]$ is not diagonal; if it is diagonal, two-and three-stage least squares are identical.

Simultaneous Quantile Regression

Simultaneous quantile regression is an quantile regression (Sqreg) technique which estimates different quantiles concurrently (Cameron & Trivedi, 2005; Zellner & Theil, 1962). The reported standard errors are similar to singular quantile regressions, but simultaneous quantile regression obtains an estimate of the variance-covariance matrix of the error terms (VCE) via bootstrapping, and the VCE includes between-quantile blocks (Koenker & Hallock, 2001). Thus we can perform hypothesis tests concerning coefficients both within and across equations.

Hence, this technique was required to estimate and test the significance of the coefficients of social spending between different welfare quantiles. Such would offer the opportunity to determine whether the addition to welfare is the same for all quantiles or otherwise towards achieving objective one. Afterwards, a linear combination test is conducted to ascertain the differences in social spending between different welfare quantiles.

Vulnerability to Expected Poverty

Vulnerability to future poverty is also estimated following the methods prescribed in Browning and Lusardi (1996), Chaudhuri (2003), Dercon (2002), Hoddinott and Quisumbing (2010). Vulnerability is considered as the probability of consuming below an established welfare threshold Z. This definition is adapted in this study to mean the probability that a household at time t would consume below the absolute poverty line at time $t+1$. Vulnerability, V, is given as:

$$\hat{V} = \hat{P}_r(lnC_{h+1} < lnZ|X_h) \quad = \quad \Phi(\frac{lnZ - X_h\hat{\beta}}{\sqrt{X_h\hat{\Theta}}}) \tag{11}$$

Where lnC_{h+1} is household's per capita consumption at time $t+1$ and Z is the absolute poverty line. We begin by assuming that the stochastic process generating

the consumption of a household h is given by:

$$lnC_h = X_h\beta + e_h \tag{12}$$

where C_h is per capita consumption expenditure, X_h represents a bundle of observable household characteristics, characteristics such as household size, location, educational attainment of the household head, etc., β is a vector of parameters, and e_h is a mean-zero, constant disturbance term that captures idiosyncratic factors (shocks) that contribute to different per capita consumption levels for households that are otherwise observationally equivalent (Chaudhuri, 2003). Further, it is also assumed that the variance of e_h is given by:

$$\sigma^2{}_{e,h} = X_h\theta \tag{13}$$

We estimate β and θ using a three-step feasible generalized least squares (FGLS) procedure as in Chaudhuri (2003) and Shimeles and Woldemichael (2013). First, equation (12) is estimated using an ordinary least squares (OLS) procedure. Then, the estimated residuals from equation (12) to estimate the following equation using OLS.

$$\hat{e}^2_{OLS,h} = X_h\theta + \eta_h \tag{14}$$

The predictions from equation (14) are used to transform the equation (14) as follows:

$$\frac{\hat{e}^2_{OLS,h}}{X_h\hat{\theta}_{OLS}} = \left(\frac{X_h}{X_h\hat{\theta}_{OLS}}\right)\theta + \frac{\eta_h}{X_h\hat{\theta}_{OLS}} \tag{15}$$

This transformed equation is estimated using OLS to obtain an asymptotically efficient FGLS estimate, $\hat{\theta}_{FGLS}$ which is consistent with $\sigma^2{}_{e,h}$, the variance of the idiosyncratic component of household consumption. The estimates:

$$\hat{\sigma}_{e,h} = \sqrt{X_h \hat{\theta}_{FGLS}} \tag{16}$$

are then used to transform equation (12) as follows:

$$\frac{lnC_h}{\hat{\sigma}_{e,h}} = \left(\frac{X_h}{\hat{\sigma}_{e,h}}\right)\beta + \frac{e_h}{\hat{\sigma}_{e,h}} \tag{17}$$

OLS estimation of equation (17) yields a consistent and asymptotically efficient estimate of β. Using the estimates $\hat{\beta}$ and $\hat{\theta}$ to directly estimate expected log consumption:

$$\hat{E}[lnC_h|X_h] = X_h\hat{\beta} \tag{18}$$

and the variance of the log consumption is also given as:

$$\hat{V}[lnC_h|X_h] = \hat{\sigma}^2_{e,h} = X_h\hat{\beta} \tag{19}$$

By assuming that consumption is log-normally distributed, it becomes possible to form an estimate of the probability that a household with the characteristics, X_h, will be poor. Letting $\Phi(.)$ denote the cumulative density of the standard normal, we obtain the probability values given by equation (11).

As according to literature (Chaudhuri, 2003; Hill & Porter, 2017; Hoddinott & Quisumbing, 2010; Shimeles & Woldemichael, 2013), this study considers a household as vulnerable to poverty if $\hat{V}_h$ is greater than a probability threshold P :

$$\hat{V}_h = \begin{cases} 1, & if \ \ \hat{V}_h > P \\ 0, & if \ \ \hat{V}_h \leq P \end{cases}$$

Also, the study adopts the commonly used threshold of 0.5 for P such that a vulnerable household is one whose probability exceeds 0.5.

Chapter Summary

This study follows the quantitative paradigm and adopted the cross-sectional design which is best suited to studies aimed at finding out the prevalence of a phenomenon, situation, problem, attitude or issue, by taking a cross-section of the population at the time of the study. Furthermore, the study uses a secondary data from the fourth, fifth and sixth rounds of the Ghana Living Standard Survey (GLSS 4 – 6) obtained from Ghana Statistical Service. The fourth, fifth and sixth rounds were conducted in 1998/99, 2005/06 and 2012/13 respectively, having total sample sizes of 5,998, 8,687 and 16,772 households respectively. The unit of analysis in the study is the household and the Stata statistical software, version 13, is used in the study for data management and statistical analyses.

Two simultaneous equations are specified as a result of endogeneity bias caused by bi-causality where a poor household, essentially having a lower welfare, is likely to spend low amounts on weddings, funerals and vice versa. These simultaneous equations are to be estimated using 3-Stage Least Square (3SLS) Estimator which uses an instrumental-variables approach to produce consistent estimates and generalized least squares (GLS) to account for the correlation structure in the disturbances across the equations. Also, simultaneous quantile regression is suggested to be used to estimate different quantiles concurrently and to test the significance of the coefficients of social spending between different welfare quantiles using linear combination tests. Lastly, a normal probability distribution approach to capture household vulnerability to poverty is also discussed.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter discusses results from the statistical analysis set out in this study. Results have been organised in the form of tables and figures for better understanding of the values and direction of relationships between variables. The chapter is organised into following sections: Descriptive statistics, Determinants of Household Welfare; Determinants of Household Welfare – Quantile Regression; Hypothesis Testing; Vulnerability to poverty analysis; Objects of Social Support and Welfare; and, lastly, Vulnerability to poverty and social support.

Descriptive Statistics

This first section discusses some descriptive statistics of variables included in the study. Here, we discuss the average tendencies and distributions of variables in the samples and how they compare with the population. Table 3 shows some descriptive statistics of continuous variables included in the study.

Table 3 – *Descriptive Statistics: Continuous Variables*

		2012/2013			
Variable	Obs	Mean	Std. Dev.	Min	Max
Welfare	15568	3209.287	3366.8	39.417	96421.3
Consumption	15568	3310.092	3451.002	67.932	98464.98
Social spending	15568	142.794	544.916	0	40000
Age	15568	45.5	15.437	15	98
Square of age	15568	2308.559	1584.013	225	9604
Household size	15568	4.365	2.794	1	29

Table 3, continued

Square of household size	15568	26.861	37.735	1	841
			2005/2006		
Variable	Obs	Mean	Std. Dev.	Min	Max
Welfare	7759	2147794	2348710	69650.88	8.17e+07
Consumption	7759	1.93e+07	2.09e+07	504351.8	6.01e+08
Social spending	7759	810083	3.41e+07	0	3.00e+09
Age	7759	44.447	14.57	16	98
Square of age	7759	2187.82	1445.267	256	9604
Household size	7759	4.339	2.858	1	29
Square of household size	7759	26.992	39.72	1	841
			1998/1999		
Variable	Obs	Mean	Std. Dev.	Min	Max
Welfare	5556	1668105	1472693	118358	2.92e+07
Consumption	5556	4030575	3280494	105655.7	6.86e+07
Social spending	5556	75035.48	206343.6	0	6000000
Age	5556	45.004	14.52	18	98
Square of age	5556	2236.14	1441.276	324	9604
Household size	5556	4.371	2.55	1	21
Square of household size	5556	25.611	29.602	1	441

Source: Author (2018)

As shown in Table 3, the successful sample size of households for 2012/2013 (sixth round) was 15,568, approximately 93 percent of the national data. For 2005/2006 (fifth round) it was 7,759, approximately 89 percent of the national data in GLSS 5 while for 1998/1999 (fourth round) it was 5,556, approximately 93 percent of the national data. It could quickly be observed that the mean welfare

increases from 1998/1999 to 2005/2006, an indication of a fall in poverty over the period. This is confirmed in the studies of Coulombe and Wodon (2007), Diallo and Wodon (2007). However, this is not straightforward in the case of 2012/2013 since superficial comparison is not possible due to currency re-denomination that took place in 2007. A conversion into the old cedi denominations will allow for such direct comparisons. A similar trend analysis could be made for consumption per capita (excluding social spending) and social spending values.

On the other hand, mean age of head of household remained fairly fixed around 45 years between 1988 to 2013. The maximum age was capped at 98years while the minimum age of head reduced from 18years to 16years and to 15years for 1998/1999, 2005/2006 and 2012/2013 respectively. Also, household size remained stable around 4.4. Appendix **??** shows the frequencies and percentages of categorical variables included for the analysis.

Table 4 shows the distribution of household social spending across sex and education level of heads of households. Generally, social spending rose among all levels of education and between sexes from 1999 to 2006 but, once more, this cannot be directly compared with 2013 because of currency re-denomination. In Table 4, male-headed households have higher social spending than female-headed households, at all levels of education, for the three rounds of the GLSS (as shown in the total expenditure), except for 1998/1999 where female-headed households with tertiary or higher education spent approximately 3 percent more. However, for 2012/2013, the gap in expenditure reduces as the level of education increases from no education to tertiary or higher. This monotonicity is, however, not observed for 2005/2006 and 1998/1999. Again, the table shows that households head with secondary or tertiary education have higher social spending across from 1998/1999 to 2012/2013, and the least being those with no education.

Table 4 – *Household social spending across sex and education*

2012/2013	Sex of head		
Education level of head	Female (Mean expend)	Male (Mean expend)	**Total expenditure**
No education	83.30	121.29	108.61
Primary	104.63	130.10	121.79
Secondary	113.47	155.70	146.70
Tertiary/Higher	267.96	270.34	269.87
Non-formal/other	127.15	163.09	152.60
Total expenditure	112.04	154.33	142.79
N	4,247	11,321	15,568
2005/2006			
No education	181,732.65	285,086.33	252,361.59
Primary	265,149.61	328,659.40	307,606.43
Secondary	480,863.37	1,729,987.52	1,464,373.63
Tertiary/Higher	622,350.21	1,121,062.97	1,045,898.13
Non-formal/other	242,046.64	326,775.30	302,695.58
Total expenditure	317,203.25	986,129.90	810,082.96
N	2,042	5,717	7,759
1998/1999			
No education	58,099.71	60,224.87	59,272.63
Primary	52,330.23	73,484.24	65,452.64
Secondary	87,763.24	90,372.51	89,774.13
Tertiary/Higher	104,489.46	100,972.68	101,335.52
Non-formal/other	59,251.00	85,017.13	82,072.43
Total expenditure	66,335.65	79,266.69	75,035.48

Table 4, continued

N	1,818	3,738	5,556

Source: Author (2018)

Figure 2 shows the relationship between the age of heads of household (categorised into groups) and social spending for 2012/2013. Apendix **??** and **??** show the relationship for 2005/2006 and 1998/1999 respectively. From Figure 2, the mean social spending increases with increase age to about 50years and then falls gently to about age 90. This is generally true for the other rounds of the GLSS. In this case, the 96-100 age-group have an outlying mean expenditure of about GHC 600 while in the GLSS 5, the 25-35 group had the outlying expenditure.

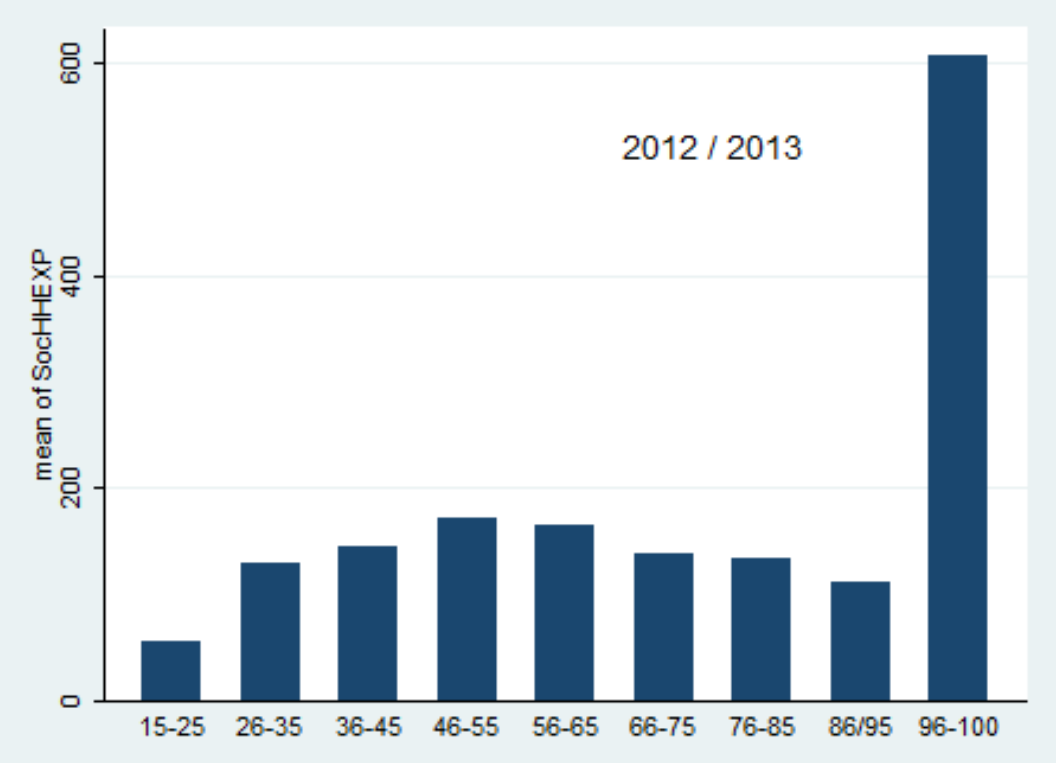

Figure 2: Mean social expenditure and age of head (2012/2013)
Source: Author's computation using GLSS 6

Table 5 also describes the distribution of social spending across region and marital status of heads of households. From the column totals, household heads

who are married or co-habiting have the highest social spending followed by heads of households who are either widowed, divorced or separated for GLSS 4, 5 and 6. The table also shows that households in the Western Region recorded the highest social spending for 1998/1999 and 2012/2013 while Greater Accra took the lead in 2005/2006. Generally, Akan dominated regions have higher social spending than otherwise. The least spending was recorded in the Upper East and Upper West regions.

Table 5 – *Household Social Spending across Marital Status and Region*

2012/2013				
	Marital status of head			
Region	Never married (Mean)	Married (Mean)	Divorced/Wid (Mean)	**Total expend**
Western	44.05	225.65	192.53	194.19
Central	48.41	140.07	147.97	135.17
Greater Accra	130.52	149.74	140.21	144.12
Eastern	56.88	176.60	87.01	146.19
Volta	49.48	151.93	117.29	135.28
Ashanti	85.20	160.01	112.58	138.52
Brong Ahafo	44.69	193.53	87.93	155.20
Northern	50.20	151.38	84.92	138.88
Upper West	50.93	108.08	92.94	102.44
Upper East	510.19	115.20	52.46	130.82
Total expend	97.79	157.19	116.52	142.79
N	1,520	10,758	3,290	15,568
2005/2006				
Western	159,612.11	597,443.83	335,447.43	497,524.15
Central	112,939.78	496,356.56	549,513.05	480,286.48

Table 5, continued

Greater Accra	281,586.99	5,749,727.90	490,232.21	3,911,483.74
Eastern	109,114.64	328,151.00	141,414.04	271,226.08
Volta	167,689.89	327,080.40	214,227.87	279,843.20
Ashanti	224,255.90	578,530.17	444,249.32	511,755.08
Brong Ahafo	97,432.37	426,522.13	211,181.41	347,600.73
Northern	204,556.56	349,130.13	178,420.35	327,590.36
Upper West	100,389.89	284,170.72	110,540.06	240,299.97
Upper East	60,801.00	196,498.57	23,733.76	171,641.21
Total expend	190,498.81	1,035,237.89	310,466.88	810,081.96
N	685	5,462	1,612	7,759
1998/1999				
Western	38,605.65	131,663.79	73,621.49	113,037.47
Central	39,501.00	80,945.32	52,027.46	69,868.35
Greater Accra	34,043.31	118,840.69	130,221.24	109,220.92
Eastern	28,978.78	91,096.38	58,932.72	80,615.55
Volta	26,441.91	78,532.44	63,531.30	71,036.03
Ashanti	59,805.40	71,893.62	66,843.76	69,323.36
Brong Ahafo	29,288.80	42,911.90	24,851.49	38,178.50
Northern	21,762.90	64,266.98	38,076.00	58,992.67
Upper West	10,667.67	31,608.37	7,181.00	27,809.85
Upper East	18,501.00	43,195.31	35,001.00	41,215.01
Total expend	37,852.24	82,246.29	65,958.26	75,035.48
N	402	3,790	1,364	5,556

Source: Author (2018)

Furthermore, Figure 3 shows the distribution of social spending across religious and ethnic groups. It could be seen that household heads who are Christians have the highest spending followed by Muslims and the least being the

Traditionalists or other religions. Once more, the Akan ethnic group have higher mean social spending compared with non-Akans. A surprise observation is that of traditional Akans who have a near-zero expenditure. Appendix **??** and Appendix **??** also show the distribution for 2005/2006 and 1998/1999 respectively.

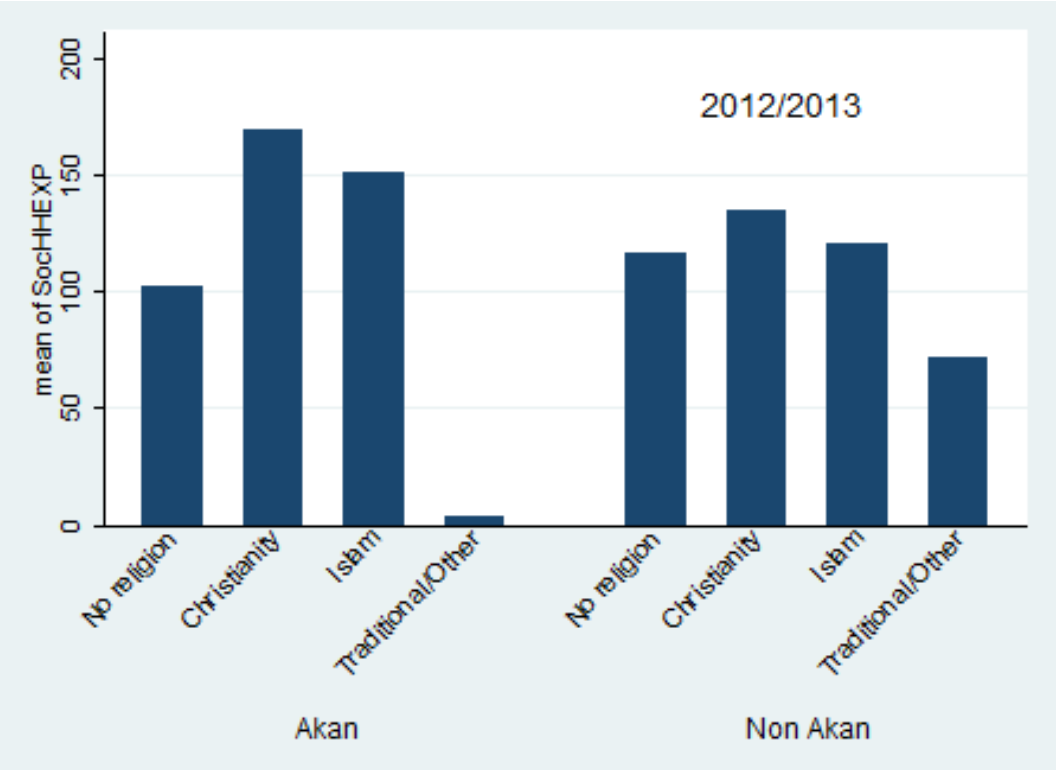

Figure 3: Mean social expenditure across religion and ethnic groups (2012/2013)
Source: Author's computation using GLSS 6

Finally, Table 6 shows the distribution of social spending across social support variables found in the GLSS 6 only. Apart from support to family and business community, those with very weak support have the highest mean social spending followed by those with weak support and the least being those with strong social support.

Table 6 – *Descriptive Statistics: Support Variables*

	Mean GHC	Sample size

Table 6, continued

Support to members of one's family		
Very Weak	143.61	2,781
Weak	142.86	10,146
Strong	146.06	2,104
Total	143.44	15,031
Support to members of one's village		
Very Weak	147.93	1,654
Weak	142.55	9,364
Strong	143.67	4,013
Total	143.44	15,031
Support to members of one's Ethnic grp		
Very Weak	149.86	1,664
Weak	145.85	9,147
Strong	135.70	4,220
Total	143.44	15,031
Support to members outside one's Ethnic grp		
Very Weak	163.98	1,088
Weak	145.82	8,301
Strong	136.01	5,641
Total	143.45	15,030
Support to members of one's religion		
Very Weak	149.85	1,271
Weak	147.85	8,473
Strong	134.88	5,285
Total	143.46	15,029
Support to members of one's club		

Table 6, continued

Very Weak	150.48	1,477
Weak	146.24	8,809
Strong	136.06	4,745
Total	143.44	15,031
Support to members of one's business comm		
Very Weak	165.92	1,443
Weak	139.71	8,726
Strong	143.48	4,862
Total	143.44	15,031
N		15,031

Source: Author (2018)

Determinants of Household Welfare

Household welfare measured by consumption expenditure per adult equivalent scale (Annim et al., 2012; Asenso-Okyere et al., 2000; Donkoh et al., 2014; Ghana Statistical Service, 2014) is influenced by household idiosyncratic characteristics and, sometimes, external variables (Deacon, 1992; Diallo & Wodon, 2007). Following the works of Browning and Lusardi (1996), Chaudhuri (2003), Coulombe and Wodon (2007), Diallo and Wodon (2007) and Shimeles and Woldemichael (2013), variables such as age, sex, marital status, education, working status of household head as well as durable assets which serve as a store of wealth were included in the determination of household welfare.

Table 7 shows the output for a three-stage least square regression (3SLS) of the determinants of household welfare from 1998/1999 to 2012/2013. The upper part of the table shows the determinants of welfare while the lower part shows the determinants of the endogenous social spending. First and foremost, consider

determinants of social spending at the lower part of Table 7. It could be seen that there is a negative relationship between welfare and social spending. Also, the effect of welfare on social spending generally increased from 48 percent to 93 percent, and to 39 percent for 1998/1999, 2004/2005 and 2012/2013 respectively. This means that as households get richer, they reduce their social spending. A majority of poor households spend on funerals, weddings or religious festivals every year, and the amounts spent represent a significant proportion of their budget. Therefore, for richer households, social spending represent a smaller proportion of their budget compared with poor households.

The above explanation is corroborated by the positive relationship between social spending and household welfare in the upper part of Table 7. It could also be seen that a cedi increase in social spending will increase household welfare by 15 percent, 11 percent and 6 percent for 1998/1999, 2004/2005 and 2012/2013 respectively. This is intuitive because in the ex-post computation of household welfare, consumption expenditure, it captures social spending as well such that an increase in social spending will improve household welfare. Evidently, the effect of social spending on household welfare is seen to have declined consistently over the period. This decline could be attributed to the general fall in poverty levels over the same period, (Coulombe & Wodon, 2007; Diallo & Wodon, 2007), such that the proportion of social spending falls as households become richer, as indicated early on.

Still on the determinants of social spending, age of head of household is worthy of notice. Age of head of household has a positive relationship with social spending while the square of age has a negative relationship. The interpretation is that social spending rises as the age of head of household increases up to a point and falls in late years. This narrative is supported by Figure 2 in the descriptive analysis and Appendix **??** and Appendix **??**. Hence, social spending could be said to be a tendency of those younger than 50 years. That is, head of households who are aged

tend to spend lesser on social events than the those in the youthful and adult age brackets. This is also quite intuitive.

Moreover, as shown from the descriptive statistics, male-headed households spend more on social events than female-headed households. From the table, male-headed households spend about 52 percent more than female-headed households for 2012/2013. However, male-headed households spent about 34 percent less than female-headed households. Also, the result indicates that household heads who are married or co-habiting, together with those divorced or widowed, spend more than those never married for all the considered years of the GLSS. For instance, in 2012/2013, those married or co-habiting spend close to thrice (190 percent) the expenditure made by those never married while those divorce, separated or widowed expended about 140 percent more. Juxtaposing this finding with the results for the age of head of households, one could argue that social spending is more pronounced among the middle-aged adults (mostly, 40-60years) who are or ever married.

Again, it is observed that households with primary education or higher spend more on social events than those with no education. The results have shown that formal education have higher positive effect on social spending than no education. Also, as the level of education increases from primary education upwards, household spend more on social events than heads with no education. An explanation amenable to this is that as one progresses on the academic ladder, the number of colleagues and social class increases which encourage high social spending. Also, results show that in 2012/2013 households in the manufacturing industry have about 44 percentage change in social spending more than those in the agricultural sector for a change in the level of education. Likewise, the financial, insurance and real estate sector have more than double, that is 118 and 129 percentage changes more than those in the agricultural sector for both 2012/2013 and 2005/2006 respectively. This could be as a result of the agricultural sector

occupying lower welfare levels as shown in Asenso-Okyere et al. (2000), Coulombe and Wodon (2007), Diallo and Wodon (2007). However, households in the mining and the construction sectors have 179 and 109 percentage changes lower than those in the agricultural sector for 2005/2006.

In addition, households that received remittances have the tendency to increase social spending by 68 percent and 26 percent for 2012/2013 and 2005/2006 respectively. This result is supported by the findings of Mazzucato et al. (2006) which stated funerals are becoming multi-sited events as migrants from developing countries play important roles in the organization, financing and practice of funeral ceremonies in their home countries. Funerals thus give rise to flows of money, goods and people across national borders. This means that remittance income have positive relationship with social spending.

With regard to religion of head of household, in 1998/1999, households that profess traditional or other religion spend 78 percent more than those of no religion in terms of social spending followed by Christians who have 71 percent. Also, in 2005/2006 Islamic, Christian and traditional households have 115 percent, 90 percent and 86 percentage changes more than households with no religion. However, in 2012/2013, households that profess traditional religion have 267 percentage change more than household of no religion. The result is intuitive in the sense that most social events tend to be religious in nature (Case et al., 2008; Chen & Zhang, 2012). It is therefore no surprise that religion has higher effect positive effect on social spending compared with no religion.

As expected, non-Akans have a lesser percentage change in social spending compared with the Akan ethnic group. Again, this is no surprise since social ceremonies like funerals, wedding and festivals are more pronounced among the Akans than non-Akans (Owusu-Frempong, 2005; Van der Geest, 2006). As stated in De Witte (2003), Mazzucato et al. (2006), the Ashanti tribe of the Akan ethnic group are widely known for elaborate funerals and festivals. Last but not least, it

could be seen that all regions have lesser effect on social spending compared with Ashanti region for all three rounds of GLSS. Here, again, non-Akan dominated regions: Upper West, Upper East, Northern, Greater Accra and Volta regions have much less effect than the Akan dominated regions.

Table 7 – *Determinants of Household Welfare and Social Spending – 3SLS*

	Welfare		
	2012/2013	2004/2005	1998/1999
Social spending	0.0591***	0.114***	0.154***
Age	-0.00229	-0.0220***	-0.0329***
Square of age	0.0000235	0.000210***	0.000291***
Household size	-0.231***	-0.249***	-0.305***
Square of household size	0.00913***	0.00982***	0.0155***
Sex of head			
Male	-0.0559***	-0.105***	-0.0509
Marital status of head			
Married/co-habiting	0.0147	-0.0500	-0.107*
Divorced/separated/Widowed	-0.0639**	-0.137***	-0.160**
Education of head			
Primary	0.131***	0.0756**	0.0255
Secondary	0.285***	0.156***	0.0987
Tertiary/Higher	0.581***	0.416***	0.258**
Non-formal/other	0.197***	-0.0232	
Industry of head			
Mining	0.269***	0.417***	0.308**
Manufacturing	0.112***	0.0923**	0.179***
Electricity and utilities	0.118	0.221	0.118
Construction	0.103***	0.129*	0.0173
Commerce	0.200***	0.133***	0.184***

Table 7 continued

Transportation, storage & communications	0.111***	0.0488	0.223***
Financial, insurance & real estate	0.365***	0.0195	0.414***
Services: public administration	0.211***	0.142*	0.227***
Others	0.145***	0.125**	0.146***
Employment status of head			
Self-employed with employees	0.0994***	-0.00179	-0.0461
Self-employed without employees	-0.0208	-0.182***	-0.149***
Family worker	-0.0296	-0.102*	-0.222**
Apprentice/Volunteer/Other	-0.135**	-0.209**	-0.132*
Remittance income			
Yes	0.0101	-0.0312	-0.0361
Ownership of house			
Yes	0.0285*	0.0569***	0.0268
Ownership of car			
Yes	0.261***	0.859***	0.650***
Locality			
Other Urban	-0.386***	-0.0219	-0.244***
Rural Coastal	-0.447***	-0.268***	-0.422***
Rural Forest	-0.559***	-0.359***	-0.356***
Rural Savannah	-0.854***	-0.544***	-0.551***
Constant	8.910***	14.75***	14.85***
		lnSocHHEXP	
Welfare	-0.626***	-0.932***	-0.471**
Age	0.161***	0.214***	0.191***
Square of age	-0.00140***	-0.00195***	-0.00160***
Sex			
Male	0.518***	0.280	-0.336*

Table 7 continued

Marital status of head			
Married/co-habiting	1.894***	1.058***	1.174***
Divorced/separated/Widowed	1.427***	0.369	0.559*
Education of head			
Primary	0.499***	0.258	0.401*
Secondary	0.715***	0.463**	0.558***
Tertiary/Higher	1.750***	2.037***	0.609*
Non-formal/other	1.026***	1.146***	0.815
Industry of head			
Mining	0.457	-1.792**	0.810
Manufacturing	0.440*	-0.386	-0.0435
Electricity and utilities	1.286	-0.124	0.668
Construction	-0.123	-1.091**	-0.181
Commerce	0.182	-0.0278	0.0841
Transportation, storage & communications	-0.193	0.166	0.0902
Financial, insurance & real estate	1.184*	1.287**	-0.252
Services: public administration	0.188	-0.210	0.151
Others	0.0818	-0.452	-0.149
Remittance income			
Yes	0.683***	0.261*	-0.128
Religion of head			
Christianity	0.311	0.900***	0.713***
Islam	0.624**	1.146***	0.296
Traditional/Other	-2.668*	0.857***	0.778***
Ethnic group of head			
Non Akan	-0.129	-0.274*	-0.473**
Region			

Table 7 continued

Western	-1.186***	-0.818***	0.148
Central	-1.641***	-0.506*	-0.745***
Greater Accra	-2.856***	-2.388***	-0.657***
Volta	-2.175***	-1.769***	-0.760***
Eastern	-0.764***	-0.630***	-0.559***
Brong ahafo	-0.243	-0.923***	-0.118
Northern	-0.486*	-1.216***	-0.786***
Upper east	-2.383***	-3.584***	-3.352***
Upper west	-2.719***	-6.789***	-2.938***
Constant	1.400	18.17***	9.952***
Observations	15568	7759	4874

Source: Author (2018)

95% confidence intervals in second, third and fourth columns

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Now, consider the structural equation for the determinants of household welfare at the upper part of Table 7. As mentioned earlier, household welfare is influenced by household specific characteristics and some external factors that may control the consumption expenditure of households (Bagarani et al., 2009; Browning & Lusardi, 1996). Some variables affecting household welfare also influence social spending at the lower part of the table, therefore average marginal effect table was constructed for all determinants of welfare as captured in the Table 8 below. Also, as already stated, the table shows that household social spending positively affects household welfare and that this effect declined over the three periods of the GLSS.

So, Age of household head negatively affects household welfare. That means, welfare declines as age of household head increases. However, this relationship terminates at a point (around 50 years, as seen from Figure 2 and Appendix **??**

and Appendix **??**, and this is captured by square of age of household head which positively affect welfare. This finding confirms the findings of Coulombe and Wodon (2007, pg. 30) who found that there is a clear tendency for poverty measures to increase with the age of the household head for GLSS 3, 4 and 5. Nonetheless, the effect of age on welfare, for both age and age-square, declined consecutively from 1998/1999 to 2012/2013. This may be that households were overcoming the challenge age poses by postponing its consequences to later years where, perhaps, the nuclear family becomes empty with no children.

Moreover, as also found by Browning and Lusardi (1996), Calvo and Dercon (2005), Chaudhuri (2003), Deacon (1992) and Coulombe and Wodon (2007), increasing household size by an additional member decreases the welfare of the household. In other words, larger households would have a poorer welfare than those with fewer members. As it was in the case of age of household head, the effect of household size also declined over the period from 31 percent to 25 percent, and to 23 percent for 1998/1999, 2004/2005 and 2012/2013 respectively. The reasons may not be different from that of age of household because in the arguments of Calvo and Dercon (2005), larger households may enjoy economies of scale, for instance, by cooking on a larger scale which would reduce the cost of food per person compared with households with fewer members. This is statistically shown from Table 8 that the square of household size positively affects welfare. That is, beyond a certain number of members, households became better off (see Chaudhuri, 2003).

Furthermore, male-headed households had less welfare than female-headed households for all periods. This is in conformity with Diallo and Wodon (2007) and Coulombe and Wodon (2007). Here, again, the effect difference declined between 2004/2005 and 2012/2013 from about 11 percent to 6 percent respectively. Also, it could seen that households whose head is married or co-habiting had lesser (11 percent) welfare than those whose head is never married in 1998/1999 whereas those whose head had divorced or widowed had much lesser welfare, that

is, 16 percent, 14 percent and 6 percent for 1998/1999, 2004/2005 and 2012/2013 respectively.

Table 8 shows that education level of households head has a positive effect on welfare and that as education level increases from primary to tertiary or higher, households become more better off than their counterparts with no education. This could be attributed to the higher wages (returns on education) at higher education levels (Diallo & Wodon, 2007). As Coulombe and Wodon (2007, pg. 30) captured it, "the probability of being poor decreases with the education level of the household head, from primary, to secondary, and college/post-graduate studies", this result confirms it for GLSS 4, 5 and 6.

On the other hand, industry classification for head of households indicates that households in the agricultural sector have the poorest welfare since none of the industries had a lesser (non-negative coefficients) welfare than those in the agricultural sector for whichever year considered (1998/1999, 2004/2005 and 2012/2013). Industries such as financial, insurance and real estate; mining; public administration services and commerce had higher than manufacturing and construction, similar to what Coulombe and Wodon (2007, pg. 30) also found. Also, with the exception of heads who are self-employed with employees, public or salary workers have better household welfare than all others and the least being those whose heads are apprentices or volunteer workers.

Next, durable assets like houses and cars have positive effect on household welfare and that those who own them have better welfare than those who have not. Ownership of a house, for instance, increased welfare by 6 percent and 3 percent for 2004/2005 and 2012/2013 respectively. Also, owning a car increased welfare by 65 percent, 86 percent and 26 percent for 1998/199, 2004/2005 and 2012/2013 respectively. Receiving remittance income, on the other hand, had no significant effect on household welfare for all years. Last but not least, it is evidently shown in Table 8 that households outside the capital city, Accra, have lesser welfare with

the severest being those living in the rural Savannah, followed by rural Forest and rural Coastal. This result (as also in Bagarani et al. (2009), Coulombe and Wodon (2007), Diallo and Wodon (2007), Shimeles and Woldemichael (2013)) shows the disparities that exist between the urban and the rural households.

Table 8 – *Average Marginal Effect after 3-Stage Regression*

	Welfare		
	2012/2013	2004/2005	1998/1999
Social spending	0.0591***	0.114***	0.154***
Age	-0.00229	-0.0220***	-0.0329***
Square of age	0.0000235	0.000210***	0.000291***
Household size	-0.231***	-0.249***	-0.305***
Square of household size	0.00913***	0.00982***	0.0155***
Sex of head			
Male	-0.0559***	-0.105***	-0.0509
Marital status of head			
Married/co-habiting	0.0147	-0.0500	-0.107*
Divorced/separated/Widowed	-0.0639**	-0.137***	-0.160**
Education of head			
Primary	0.131***	0.0756**	0.0129
Secondary	0.285***	0.156***	0.0860**
Tertiary/Higher	0.581***	0.416***	0.245***
Non-formal/other	0.197***	-0.0232	-0.0126
Industry of head			
Mining	0.269***	0.417***	0.308**
Manufacturing	0.112***	0.0923**	0.179***
Electricity and utilities	0.118	0.221	0.118

Table 8, continued

Construction	0.103***	0.129*	0.0173
Commerce	0.200***	0.133***	0.184***
Transportation, storage & communications	0.111***	0.0488	0.223***
Financial, insurance & real estate	0.365***	0.0195	0.414***
Services: public administration	0.211***	0.142*	0.227***
Others	0.145***	0.125**	0.146***
Employment status of head			
Self-employed with employees	0.0994***	-0.00179	-0.0461
Self-employed without employees	-0.0208	-0.182***	-0.149***
Family worker	-0.0296	-0.102*	-0.222**
Apprentice/Volunteer/Other	-0.135**	-0.209**	-0.132*
Remittance income			
Yes	0.0101	-0.0312	-0.0361
Ownership of house			
Yes	0.0285*	0.0569***	0.0268
Ownership of car			
Yes	0.261***	0.859***	0.650***
Locality			
Other Urban	-0.386***	-0.0219	-0.244***
Rural Coastal	-0.447***	-0.268***	-0.422***
Rural Forest	-0.559***	-0.359***	-0.422***
Rural Savannah	-0.854***	-0.544***	-0.551***
Observations	15568	7759	4874

Source: Author (2018)

95% confidence intervals in second, third and fourth columns

Table 8, continued

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Determinants of Household Welfare – Quantile Regression

In the previous section, the determinants of welfare discussed were considered at the means of the influential variables. Going a step further, this section discusses briefly the effects of those influential variables of welfare at different quantiles (10th, 25th, 50th, 75th and 90th percentiles) of welfare. The interest, here, is to reveal the differential effect of all explanatory variables included in the upper part of Table 8 and to aid hypothesis testing which is discussed in the succeeding section. Table 9, Appendix 1 and Appendix 1 show the results for simultaneous quantile regression of the structural equation for the determinants of welfare for 2012/2013, 2005/2006 and 1998/1999 respectively.

In Table 9, the first variable of interest is household social spending whose effect declines as welfare quantile increases from 10th to 90th percentile. A similar result is also shown for 2005/2006 and 1998/1999 in Appendix 1 and Appendix 1. The reduction in how much is added to welfare at higher percentile confirm the discussions so far that as households get richer, they would benefit less and less from social spending and thus spend lesser. However, It could be observed that, the direction of effect for age and age-square have reversed at the 25th percentile.

As opposed to the mean effect, quantile regression has shown that age has a positive effect while age-square has a negative at the 25th percentile. Also, the effect of household size is enormous at higher quantiles which could be as a result of the consumption per capita being higher at higher levels of welfare. Further, the effects of both primary and secondary education are highest at the 25th percentile and declined towards higher quantiles, whereas the effect of tertiary/higher education increased throughout and that of non-formal education

decreasing towards higher quantiles. Finally, the effect of locality consistently decreased towards higher quantiles in reference to households at Greater Accra Metropolitan Area (GAMA). An indication that disparities are higher among the poor living outside GAMA.

Table 9 – *Simultaneous Quantile Regression–2012/2013*

	Welfare Quantiles				
Variable	10th	25th	50th	75th	90th
Social spending	0.0282***	0.0283***	0.0265***	0.0214***	0.0179***
Age	0.00564	0.00647**	0.00101	0.00224	0.00240
Square of age	-0.0000595*	-0.0000536*	-0.00000105	-0.0000111	-0.00000814
Household size	-0.194***	-0.222***	-0.234***	-0.246***	-0.268***
Square of household size	0.00686***	0.00894***	0.00965***	0.0104***	0.0124***
Sex of head					
Male	0.0207	-0.0454*	-0.0634***	-0.0540**	-0.000630
Marital status of head					
Married/co-habiting	0.0613*	0.0360	0.0666**	0.0757**	0.120**
Divorced/separated/Widowed	-0.00180	-0.0587	-0.0149	-0.0266	0.0550
Education of head					

Table 9 continued

Primary	0.129***	0.156***	0.152***	0.146***	0.115***
Secondary	0.270***	0.320***	0.312***	0.279***	0.293***
Tertiary/Higher	0.584***	0.603***	0.610***	0.640***	0.643***
Non-formal/other	0.248***	0.234***	0.232***	0.177***	0.142**
Industry of head					
Mining	0.263***	0.286***	0.271***	0.272***	0.247**
Manufacturing	0.154***	0.130***	0.132***	0.126***	0.140***
Electricity and utilities	0.00523	0.151	0.0813	0.209	0.309*
Construction	0.139***	0.114***	0.0870***	0.0670	0.0577
Commerce	0.221***	0.187***	0.234***	0.187***	0.216***
Transportation, storage and communications	0.103*	0.123***	0.115***	0.106***	0.148**
Financial, insurance and real estate	0.226*	0.323**	0.301***	0.427*	0.704***
Services: public administration	0.163**	0.202***	0.197***	0.230***	0.289***
Others	0.141***	0.130***	0.145***	0.153***	0.169***

Table 9 continued

Employment status of head					
Self-employed with employees	0.0793*	0.0677*	0.0802**	0.119***	0.180***
Self-employed without employees	0.00556	-0.00781	-0.0525*	-0.0253	-0.0126
Family worker	-0.125*	-0.113*	-0.0752	-0.00315	0.0875
Apprentice/Volunteer/Other	-0.183	-0.101*	-0.193**	-0.101	-0.0568
Remittance income					
Yes	0.0529**	0.0587***	0.0179	0.0293	0.0466*
Ownership of house					
Yes	-0.0128	0.00239	0.0283*	0.0383**	0.0468*
Ownership of car					
Yes	0.274***	0.263***	0.255***	0.246***	0.239***
Locality					
Other Urban	-0.358***	-0.339***	-0.324***	-0.276***	-0.225***
Rural Coastal	-0.448***	-0.445***	-0.420***	-0.396***	-0.316***
Rural Forest	-0.537***	-0.511***	-0.469***	-0.433***	-0.409***

Table 9 continued

Rural Savannah	-0.968***	-0.882***	-0.793***	-0.686***	-0.574***
Constant	7.935***	8.291***	8.779***	9.039***	9.217***

Source: Author (2018)

95% confidence intervals in second, third and fourth columns

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Hypothesis Testing

This section discusses the results of the hypothesis tests conducted on the coefficients of social spending across different quantiles of the simultaneous quantile regression estimates using linear combination (lincom) tests. First, 2012/2013 is considered followed by 2005/2006 and then 1998/1999 respectively. Appendix 1 presents a composite test outputs for household social spending across different welfare quantiles.

Results from Appendix 1 show that there are differences in the effect of social spending on household welfare between the 10th and the 75th percentile; and between the 10th and the 90th percentile. These statistical differences imply that the extremely poor households (10th percentile) have more addition to welfare for a cedi social expenditure than the very rich households (75th and 90th percentile). This could be explained in the sense that, in the ex-post, poor households have smaller consumption spending such that an additional cedi would have high effect on household welfare than rich households. Hence, poor households in the 10th percentile of welfare have approximately 0.7 percent and 1 percent more than the 75th and the 90th percentiles respectively. Also, the tests for the upper percentiles (that is, 25th, 50th, 75th and 90th percentiles) indicate that even between the median and the rich households, the poorer ones have greater addition to welfare than the richer households in the ex-post analysis. The reasons are just as is in the case between the 10th, 75th and 90th percentiles.

Moreover, Appendix 1 also shows the test for the differences in social spending across welfare quantiles for 2004/2005. The result is not vastly different from that of 2012/2013 except that in 2004/2005 differences existed between fewer quantiles. These include 10th and 90th percentiles, 25th and 90th percentiles and 50th and 90th percentiles. It is, therefore, seen that the differences are in reference to the richest households which means that between the poor, the median and some rich households, the effect of social spending on welfare was the same. Between

10th and 90th percentiles, the differential effect was 1.2 percent while between 25th and 90th percentile, it was 1 percent and, lastly, between 50th and 90th percentile, the differential effect was 0.9 percent.

Finally, same tests for 1998/1999 also showed the following results, captured in Appendix 1. Similar to the results for 2005/2006 and 2012/2013, differences in the effect of social spending exist between the 10th and 75th percentiles, 10th and 90th percentiles, 25th and 90th percentiles and 50th and 90th percentiles. Between the 10th and the 75th and 90th percentiles, the effect of social spending on household welfare for the very poor was 1 percent and 1.7 percent, respectively, more than the rich household. Also, between the 25th and 90th percentiles, poor households had 1.4 percent of effect of social spending more than the richest households. Likewise, between 50th and 90th percentiles, the median households had 1 percent of social spending effect on welfare more than the richest households.

The implication of the above hypotheses is straightforward. That is, the effect of social spending on welfare between the poorest households and others increases towards higher quantiles of welfare. Thus, in the neighbourhood of the 10th percentile of welfare, there is no evidence of differences in the effect of social spending. However, extending the neighbourhood towards higher quantiles like 50th, 75th and 90th quantiles reveal such differential effect. This suggests that in the ex-post, poor households benefit from social spending than rich households. The latter statement would lead one to argue social spending as a form of social investment which yields welfare returns. As this argument may be partly true, in the presence a functional, resourceful social networks, it may not be true if such expenditure do not yield commensurate benefits. According to Case et al. (2008), Haq et al. (2009), Mazzucato et al. (2006) and Chen and Zhang (2012), household social spending tend to be an unproductive venture with the possibility of squeezing out essential components of household consumption like food, health, education and so forth at a different time period. In this regard, the next section

discusses the future vulnerability to poverty as a result of household's engagement in social spending as a step further to examine the ex-ante effect apart from the ex-post benefits.

Vulnerability to Expected Poverty

This section discusses the vulnerability to poverty due to social spending. The process followed the works of Chaudhuri (2003) and Shimeles and Woldemichael (2013) using the Full Generalised Least Square process for the consumption expenditure then to the generation of the probabilities as described in Chapter Three of the study. It is worthy to restate that in the tables that follows, for the first instances in each year, vulnerability to poverty is estimated without social spending (that is, social spending is subtracted from the total household expenditure). This was intended to determine households' level of vulnerability assuming they did not make any social spending. Then, in the second instances, social spending was included to ascertain the level of vulnerability, whether increased or decreased, for the very poor, poor and non-poor households. By this, the study was able to determine the change in vulnerability levels of households which could then be attributed to the effect of household social spending. Table 10 shows the vulnerability to poverty without social spending while Table 11 shows vulnerability including social spending for 2012/2013.

From Table 10, 64.14 percent of all households are vulnerable to poverty. Out of which 94.33 percent of the very poor are vulnerable while 55.18 percent of the non-poor are vulnerable without social spending.

Table 10 – *Vulnerability without Social Spending – 2012/2013*

	Vulnerability to poverty		
Poverty status	Not vulnerable	Vulnerable	**Total**

Table 10, continued

	No.	%	No.	%	No.	%
Very poor	89	5.67	1480	94.33	1569	100.00
Poor	231	10.30	2012	89.70	2243	100.00
Non poor	5236	44.82	6447	55.18	11683	100.00
Total	5556	35.86	9939	64.14	15495	100.00

Source: Author (2018)

On the other hand, Table 11 shows the fact that for the total sample of households, 63.81 percent are vulnerable after social spending was introduced as an exogenous (shock) variable. This represents a drop in the sample average from 64.14 percent to 63.81 percent which looks good. However, considering the constituents of the sample average, it could be seen that the decline in vulnerability for the entire sample was a result of fall in the vulnerability of the Non-poor only (that is, 55.18 in Table 10 to 54.56 in Table 11). Which means that, vulnerability rather increased from 94.33 percent in Table 10 to 95.03 percent in Table 11 for the Very poor while for the Poor, it rose from 89.70 percent in Table 10 to 90.15 in Table 11. It suggest, therefore, that social spending increases slightly the vulnerability to poverty of the Very poor by 1.3 percent and the Poor by 0.45 percent. By this, one could argue that, although in the ex-post analysis poor households have more positive effect than the rich households, social spending is not good for the poor in future vulnerability analysis.

This argument is true especially when consumption of social events are tied to the societal norms and relative consumption, poor households that stretch their budget in order to meet present expenditure on social events may counted to have improve their welfare by virtue of increasing consumption expenditure but would have to face the dire consequences in the future. So this finding points out the

negative future effect that social spending brings on households that are poor but would still want to follow the herd. In the wake of extravagant funerals, festivals and weddings in developing countries, the ex-ante analysis points to future permanent or transitional poverty for poor households that would venture what is the preserve of the rich.

Table 11 – *Vulnerability with Social Spending – 2012/2013*

	Vulnerability to povery					
Poverty status	Not vulnerable		Vulnerable		**Total**	
	No.	%	No.	%	No.	%
Very poor	78	4.97	1491	95.03	1569	100.00
Poor	221	9.85	2022	90.15	2243	100.00
Non poor	5309	45.44	6374	54.56	11683	100.00
Total	5608	36.19	9887	63.81	15495	100.00

Source: Author (2018)

In 2005/2006, nonetheless, Table 12 shows no vulnerability without social spending. This does not seek to suggest that in the said year no household in Ghana was vulnerable.

Table 12 – *Vulnerability without Social Spending – 2005/2006*

	Vulnerability to povery			
Poverty Status	Not vulnerable		**Total**	
	No.	%	No.	%
Very poor	1292	100.00	1292	100.00
Poor	639	100.00	639	100.00

Table 12, continued

Non poor	5821	100.00	5821	100.00
Total	7752	100.00	7752	100.00

Source: Author (2018)

Yet in Table 13, results indicate that, once again, vulnerability increases, this time, for all categories of household. So, while the for total sample vulnerability increased by 0.25 percent, the Very poor shot up their vulnerability by 1.16 percent while the 0.31 was for the Poor and the Non-poor recording 0.03 percent of vulnerability. It is instructive to note that all manner of households are vulnerable to either permanent poverty in the case of the Very poor and the Poor or transitory poverty for the Non-poor which is likely to nullify the present gains in welfare in the future.

Table 13 – *Vulnerability with Social Spending – 2005/2006*

	Vulnerability to povery					
Poverty Status	Not vulnerable		Vulnerable		**Total**	
	No.	%	No.	%	No.	%
Very poor	1277	98.84	15	1.16	1292	100.00
Poor	637	99.69	2	0.31	639	100.00
Non poor	5819	99.97	2	0.03	5821	100.00
Total	7733	99.75	19	0.25	7752	100.00

Source: Author (2018)

Last but not least is the vulnerability test for 1998/1999. Table 14 presents the vulnerability estimates without social spending. It is seen from here that 33.59 percent of the sampled households are vulnerable which is constituted by 71.65

percent vulnerable Very poor, 57.49 vulnerable Poor and 19.06 vulnerable Non-poor households.

Table 14 – *Vulnerability without Social Spending – 1998/1999*

	Vulnerability to poverty					
Poverty Status	Not vulnerable		Vulnerable		**Total**	
	No.	%	No.	%	No.	%
Very poor	271	28.35	685	71.65	956	100.00
Poor	227	42.51	307	57.49	534	100.00
Non poor	2739	80.94	645	19.06	3384	100.00
Total	3237	66.41	1637	33.59	4874	100.00

Source: Author (2018)

Table 15 then shows the vulnerability of households to poverty after consuming social events such as weddings, funerals and festivals. This table indicates that vulnerability ot poverty for the entire sample increased from 33.59 percent to 34.67 percent in Table 14 and Table 15 respectively. Breaking this further, the Very poor increased their vulnerability from 71.65 percent to 74.48 percent. Also, the Non-poor increased their vulnerability slightly from 19.06 to 19.98 percent whereas the vulnerability of the Poor declined from 57.49 to 56.55 percent.

Table 15 – *Vulnerability with Social Spending – 1998/1999*

	Vulnerability to poverty					
Poverty Status	Not vulnerable		Vulnerable		**Total**	
	No.	%	No.	%	No.	%

Table 15, continued

Very poor	244	25.52	712	74.48	956	100.00
Poor	232	43.45	302	56.55	534	100.00
Non poor	2708	80.02	676	19.98	3384	100.00
Total	3184	65.33	1690	34.67	4874	100.00

Source: Author (2018)

The above vulnerability estimates show, to the contrary, the negative repercussions of household social spending behaviour to future poverty for all three years of the GLSS. By comparison, it is seen that vulnerability to poverty due to household social spending in 1998/1999 for the Very poor increased by 2.83 percent which reduced to 1.3 percent by 2012/2013. Also, for the Poor households, it moved from -0.94 percent to 0.45 percent while for the Non-poor, vulnerability moved from 0.92 percent to -0.62 percent by 2012/2013. These go on to suggest that vulnerability to future poverty due to social spending persists for the Very-poor and the Non-poor. As a result, the notion of social investment through social spending may not be entirely true for the poor in these instances, especially without a compensating reciprocation within a social network setting. Hence, the next section discusses the effect of social spending working through the objects of social support on household welfare.

Objects of Social Support and Welfare

This section introduces the theory of social support into the analysis so far. It is worthy to restate that social support as used in this study considers only a support where the giver receives an insignificant reciprocation or nothing at all. In this form, the individual households within a social network offer support in which reciprocations are indirect or not mutual (Ekeh, 1974; Uehara, 1990). In the following, Table 16 shows the marginal effect of such support to objects

including family members, members of one's village, members of one's ethnic group, members outside one's ethnic group, members of one's religion, members of one's club and members of one's business community.

First and foremost, the second column of Table 16 shows household welfare where households offer support to family members (the last row variable in Table 16). The result indicates that having a weak or a strong social support to family members increases household welfare compared to those with very weak social support. This also applies to all other members of society . However, an interaction between social support and social spending shows a reducing effect in welfare compared to those with very weak support to family (i.e. 0.291 percent lower welfare than those with very weak support to family members). This finding conforms with intuition in the sense that as households have higher inclination towards social support, the more they expend out of their budget such that without a commensurate reciprocity, it is expected to reduce household consumption welfare. This, however, may have not been valid if reciprocity was accounted for.

Similarly, it is shown that a support to members of one's village reduces household welfare. In this case, those with weak support have 0.44 percent of welfare lower than those with very weak support, likewise those with strong support who have 0.46 percent of welfare lower. The reasons are not far from that pertaining to support to family members above. It is noteworthy that, here, the effect is higher than support to family. Also, those with strong support to members on one's ethnic group have 2.5 percent lower than their counterparts with very weak support. On the other hand, households with weak support have 0.65 percent higher welfare than those with very weak support to members of the business community.

Further, the positive effect of social spending on welfare increases as one moves support outside one's family. As earlier noted that social spending would increase welfare since it is an element constituting the total household consumption, a higher social spending in the ex-post analysis would imply higher household

consumption and, thus, higher welfare. Also, it is intuitive for households to spend on social events involving people outside the nuclear family more than family members within any given year. For instance, attending funerals and weddings of friends, classmates, workmates and neighbours are very likely to outnumber that of nuclear family members. Per the foregoing arguments, the results shown in Table 16, indicating a higher addition to welfare when households extend support outside the family, support the interpretation that households spend more on support at social events to people outside their nuclear family relative to their own. It could, therefore, be seen that support to business community through social spending has the highest addition to welfare (that is, 7.7 percent). This is followed by support to persons of same religion (7.2 percent) and then support to persons of the same club, outside one's ethnic group, same ethnic group and same village have 6.3, 5.0, 4.7 and 3.0 percent respectively. It is no surprise to find higher additions to welfare for business community and religion since these are mostly the drivers of a plethora of social spending.

Moreover, age of head of household is only statistically significant in terms of support to members of the family and village. The positive coefficients show an addition to welfare as the age of head increases but, as in the case of the family, there is a turning point beyond which the increase in age of head becomes sparingly detrimental to welfare. On the other hand, yet an increase in the household size by an additional member would reduce welfare regardless of the objects of support. However, households with support to members of same religion are most affected with 23.5 percent decline in welfare, followed by those with support to club members, 23.4 percent, and the least being those with support to family members with 22.7 percent decline. Yet when households begin to have economies of scale in larger household size, those with support to family members have the highest addition to welfare.

Also, male-headed households have lesser welfare than female-headed

households as earlier established and in Asenso-Okyere et al. (2000), Cooke, Hague, and McKay (2016), Shimeles and Woldemichael (2013) and Coulombe and Wodon (2007). This is true for all objects of social support. the shortfall in welfare of male-headed households is highest among those with support to business community (0.61 percent) followed by family and the least being those of same ethnic group. Households heads who are married, on the other hand, have better welfare than those never married for only those with support to members of the family and village where those with support to village have higher addition to welfare than those with support to family. Those divorced, separated or widowed have lesser welfare compared with those never married. This only occurred among those with support to members outside one's ethnic group (5.6 percent), same religion (8.4 percent), same club (6.9 percent) and same business community (7.1 percent).

Turning to education level of household head, Table 16 shows that for all objects of social support, tertiary or higher education has the greatest addition to household welfare as all levels of education are compared with no education. After tertiary or higher education follows secondary education then informal education and the least being primary education. Also, households with support to family have the highest addition to welfare at all levels of education and least being those with support to business community. This is valid because whatever the returns of education on welfare, the immediate family would benefit more than outsiders.

In addition, the financial, insurance and real estate industry had the highest addition to welfare than all other industries compared with the agricultural industry. This was followed by public administration services and then commerce. The least were manufacturing and other services. Generally, households with support to family members had the highest addition to welfare than other counterparts and the reason is no different from was in the case of education level of head of household. Similarly, households that are self-employed with employees have better addition

to welfare than those in the public or salaried workers for those with support to family members. However, those with support to village have comparatively higher addition to welfare. There is little or no room for doubts as self-employed with employees usually have higher incomes and consumption compared with public or salaried workers.

To add on, ownership of a car had greater effect for households who inwardly supported members of their families through social expending than those who supported members of their villages and outside their ethnic groups. Reversely, ownership of a house had greater effect on those with support to village. Remittance income, on the other hand, was not statistically significant. Lastly, households in rural Savannah had the least welfare than other geographical locations compared with the capital city, Accra. This was followed by those in rural Forest. The closest comparable welfare with households in the capital city are those in rural coastal. Again, households with support to members same religion dominate the addition to welfare at all geographic locations. They are followed by those with support to business community and the least being those with support to village and family.

Table 16 – *3-stage regression(reg3): Social Support*

	Welfare						
	Dimensions of Social Support						
	Family	Village	Ethnic grp	Outside Ethinic	Religion	Club	Business Comm
Social spending	0.462***	0.875***	1.000***	1.048***	1.533***	1.273***	1.598***
Age	-0.00414	-0.00459	-0.00671	-0.00486	-0.00903**	-0.0109**	-0.0141**
Square of age	0.0000356	0.0000414	0.0000615	0.0000442	0.0000786*	0.0000898*	0.000117**
Household size	-0.244***	-0.243***	-0.244***	-0.238***	-0.244***	-0.239***	-0.236***
Square of household size	0.00946***	0.00950***	0.00953***	0.00930***	0.00954***	0.00929***	0.00897***
Sex of head							
Male	-0.0679**	-0.0736**	-0.0868***	-0.0849***	-0.103***	-0.0958***	-0.118***
Marital status of head							
Married/co-habiting	-0.0218	-0.0447	-0.0423	-0.0358	-0.0288	-0.00127	0.00670
Divorced/separated/Widowed	-0.0932**	-0.123**	-0.110**	-0.107**	-0.113**	-0.0800	-0.0691
Education of head							

Table 16, continued

Primary	0.134***	0.132***	0.129***	0.135***	0.129***	0.109***	0.0938**
Secondary	0.286***	0.269***	0.257***	0.278***	0.257***	0.233***	0.218***
Tertiary/Higher	0.553***	0.536***	0.526***	0.575***	0.507***	0.486***	0.497***
Non-formal/other	0.149***	0.160***	0.167***	0.163***	0.169***	0.157***	0.170**
Industry of head							
Mining	0.322***	0.351***	0.363***	0.380***	0.375***	0.343***	0.309***
Manufacturing	0.209***	0.209***	0.218***	0.218***	0.192***	0.199***	0.200***
Electricity and utilities	0.330*	0.0965	0.222	0.272*	0.209	0.0556	-0.0337
Construction	0.224***	0.183***	0.171***	0.177***	0.149**	0.172***	0.108
Commerce	0.327***	0.316***	0.329***	0.313***	0.288***	0.341***	0.295***
Transportation, storage and communications	0.245***	0.231***	0.244***	0.257***	0.205***	0.243***	0.238***
Financial, insurance and real estate	0.442***	0.446***	0.433***	0.508***	0.366***	0.412***	0.474***
Services: public administration	0.316***	0.268***	0.276***	0.219***	0.164*	0.231**	0.273***
Others	0.256***	0.244***	0.245***	0.247***	0.255***	0.239***	0.250***
Employment status of head							

Table 16, continued

Self-employed with employees	-0.0298	-0.0558	-0.0633*	-0.0540*	-0.0774**	-0.0465	-0.0656
Self-employed without employees	-0.0239	-0.0403	-0.0406	-0.0236	-0.0526*	-0.0413	-0.0477
Family worker	-0.0397	-0.0397	-0.0699	-0.0416	-0.0571	-0.0698	-0.119*
Apprentice/Volunteer/Other	0.0445	0.0387	0.0801	-0.00435	0.161*	0.160	0.165
Remittance income							
Yes	-0.0112	-0.0201	-0.0259	-0.0240	-0.0335	-0.00955	-0.0386
Ownership of house							
Yes	-0.00869	-0.0131	-0.0118	-0.00527	-0.0327*	-0.0220	-0.0307
Ownership of car							
Yes	-0.0510**	-0.0678**	-0.0755***	-0.0469**	-0.0778***	-0.0789**	-0.0922**
Locality							
Other Urban	-0.394***	-0.449***	-0.489***	-0.448***	-0.564***	-0.511***	-0.592***
Rural Coastal	-0.294***	-0.331***	-0.373***	-0.362***	-0.444***	-0.356***	-0.395***
Rural Forest	-0.367***	-0.424***	-0.450***	-0.433***	-0.551***	-0.466***	-0.527***
Rural Savannah	-0.497***	-0.572***	-0.601***	-0.565***	-0.673***	-0.630***	-0.686***
Social support							
Weak	0.995*	2.463**	2.887***	3.135***	4.708***	3.883***	5.097***

Table 16, continued

Strong	0.988*	2.450**	2.866***	3.120***	4.696***	3.865***	5.071***
Social support and Social Spending							
Weak × lnSocHHEXP	-0.291*	-0.710**	-0.833***	-0.889***	-1.366***	-1.105***	-1.429***
Strong × lnSocHHEXP	-0.291*	-0.710**	-0.832***	-0.888***	-1.367***	-1.105***	-1.428***
Constant	7.233***	5.905***	5.571***	5.221***	3.926***	4.693***	3.655***
Observations	15031	15031	15031	15029	15031	15031	15031

Source: Author (2018)

95% confidence intervals from 2nd to 8th columns

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Vulnerability to Poverty and Social Support

This last but least section discusses vulnerability to poverty due to social support through social spending discussed in the previous section. As was done for the ex-ante analysis of social spending, Tables 10, 12, and 14 show the extent of vulnerability to poverty where households engage in offer social support through social spending. The benchmark for comparisons is the vulnerability to poverty without social spending in Table 10, Section . In what follows, Table 17 shows the vulnerability to poverty due to family support through social spending. It is evident that social support to family increases vulnerability the sampled household from 64.14 percent in Table 10 to 65.20 percent, in Table 17. The Very poor, in this regard, increased their vulnerability by 0.95 percent while the Poor increased their vulnerability by 1.33 percent and, lastly, the Non-poor slightly increased theirs by 0.80 percent. Thus, there is general rise in vulnerability for all categories of households.

Table 17 – *Vulnerability to Poverty due to Family Support*

	Social support to family member					
Poverty status	**Not vulnerable**		**Vulnerable**		**Total**	
	No.	%	No.	%	No.	%
Very poor	73	4.72	1475	95.28	1548	100.00
Poor	197	8.97	2000	91.03	2197	100.00
Non poor	4936	44.02	6277	55.98	11213	100.00
Total	5206	34.80	9752	65.20	14958	100.00

Source: Author's computation using GLSS 6

Also, Table 18 presents how vulnerability to poverty for the sampled household rose to 65.56 percent for households with support to members of their village. This increment in vulnerability is constituted by a rise in vulnerability for the Very poor by 1.02 percent, 0.83 percent for the Poor and 1.35 percent increase for the Non-poor households. The general vulnerability here is fairly higher than that of support to family.

Table 18 – *Vulnerability to Poverty due to Village Support*

Social support to members of one's village						
Poverty status	**Not vulnerable**		**Vulnerable**		**Total**	
	No.	%	No.	%	No.	%
Very poor	72	4.65	1476	95.35	1548	100.00
Poor	206	9.38	1991	90.62	2197	100.00
Non poor	4874	43.47	6339	56.53	11213	100.00
Total	5152	34.44	9806	65.56	14958	100.00

Source: Author's computation using GLSS 6

Next, Table 19 also presents the vulnerability to poverty for households who offer social support to members of their own ethnic groups through social spending. The table shows that vulnerability among the sample rose by 0.99 percent. Contributing to this, vulnerability among the Very poor rose by 1.02 percent. Also, the Poor increased their vulnerability by 0.97 percent while the Non-poor increased their vulnerability by 0.77 percent.

Table 19 – *Vulnerability to Poverty due to Ethnic Group Support*

	Social support to members of ethnic group					
Poverty status	**Not vulnerable**		**Vulnerable**		**Total**	
	No.	%	No.	%	No.	%
Very poor	72	4.65	1476	95.35	1548	100.00
Poor	205	9.33	1992	90.67	2197	100.00
Non poor	4939	44.05	6274	55.95	11213	100.00
Total	5216	34.87	9742	65.13	14958	100.00

Source: Author's computation using GLSS 6

Contrary to those above, vulnerability to future poverty is shown to have decreased due to social support to people outside one's ethnic group, according to Table 20. That is, from 64.14 percent to 62.82 percent. There is generally a decline among all categories of households: Very poor, Poor and the Non-poor.

Table 20 – *Vulnerability to Poverty due to Support Outside Ethnic Group*

	Social support to members outside one's ethnic group					
Poverty status	**Not vulnerable**		**Vulnerable**		**Total**	
	No.	%	No.	%	No.	%
Very poor	96	6.20	1452	93.80	1548	100.00
Poor	253	11.52	1944	88.48	2197	100.00
Non poor	5212	46.49	6000	53.51	11212	100.00
Total	5561	37.18	9396	62.82	14957	100.00

Source: Author's computation using GLSS 6

However, Table 21 indicates that vulnerability among sampled households increased from 64.14 percent to 65.59 percent. This was also constituted by a rise in vulnerability of the Very poor by 0.37 percent while the Poor increased their vulnerability by 0.69 percent and the Non-poor raised theirs 1.54 percent. Here, too, the rise in vulnerability among the sampled households was fairly above that of support to family, village and within ethnic groups.

Table 21 – *Vulnerability to Poverty due to Religion Support*

Social support to members of one's religious group						
Poverty status	**Not vulnerable**		**Vulnerable**		**Total**	
	No.	%	No.	%	No.	%
Very poor	82	5.30	1466	94.70	1548	100.00
Poor	211	9.61	1985	90.39	2196	100.00
Non poor	4853	43.28	6359	56.72	11212	100.00
Total	5146	34.41	9810	65.59	14956	100.00

Source: Author's computation using GLSS 6

Moreover, as shown in Table 22 vulnerability to poverty among the entire sample moved up by 1.73 percent; from 64.14 percent to 65.87 percent. This was enforced by a 0.76 percent rise in vulnerability among the Very poor, 1.01 percent increase among the Poor and 1.79 percent among the Non-poor. This escalation is substantial as this rises above all vulnerability to poverty for objects of social support discussed till this far.

Table 22 – *Vulnerability to Poverty due to Club Support*

Poverty status	Social support to club member: Not vulnerable		Vulnerable		Total	
	No.	%	No.	%	No.	%
Very poor	76	4.91	1472	95.09	1548	100.00
Poor	204	9.29	1993	90.71	2197	100.00
Non poor	4825	43.03	6388	56.97	11213	100.00
Total	5105	34.13	9853	65.87	14958	100.00

Source: Author's computation using GLSS 6

Last but not least in the vulnerability analysis, Table 23 indicates that vulnerability to poverty rose from 64.14 percent in Table 10 to 64.23. Although the vulnerability of the Non-poor declined sightly from 55.18 percent to 54.98 percent, it rather moved up in the case of the Very poor and the Poor showing a 0.37 percent and 0.24 percent respectively.

Table 23 – *Vulnerability to Poverty due to Business Community Support*

Poverty status	Social support to members of one's business community: Not vulnerable		Vulnerable		Total	
	No.	%	No.	%	No.	%
Very poor	82	5.30	1466	94.70	1548	100.00
Poor	221	10.06	1976	89.94	2197	100.00
Non poor	5048	45.02	6165	54.98	11213	100.00
Total	5351	35.77	9607	64.23	14958	100.00

Source: Author's computation using GLSS 6

In the foregoing analysis, one could realise that vulnerability to future poverty increases consistently, apart from support outside one's ethnic group, as social support extends far away from the family. There is intuition to support this finding in the sense that support offered to any member of the family benefits the entire household in the present and in the future. Thus, cushioning the household against future vulnerability rather than a support rendered outside the family which would not rake in a commensurate reciprocity. Therefore, households that tend to spread their scarce tentacles to support others through social spending without receiving in return stand to jeopardise the household's welfare in the next period.

Chapter Summary

This chapter sought to implement statistical techniques and to analyse the empirical models set out in the previous chapter and to achieve objectives set forth in this study namely, first, to determine the differential effect (magnitude) of social spending on welfare between the poor and non-poor households. Second, to estimate households vulnerability to poverty per social spending. Third, to examine the effect of social support through social spending on welfare and, lastly, to estimate the vulnerability to poverty due to social support through social spending. The empirical models included a simultaneous equation system where both household welfare and social spending were endogenous; as well as a normal probability distribution which captures the probability of a household engaged in social spending being vulnerable to future poverty. On the other hand, statistical techniques employed in analysing the said models included the Three-Stage Least Square (3SLS) Estimator which efficiently estimated the parameter coefficients of both determinants of household welfare and social spending. However, before considering the analysis of the stated models, the chapter, first, presented descriptive statistics of the relationship between main variable, social spending, and other demographic variables used in the study.

Results from the Three-Stage Least Square showed that as households get richer, they reduce their social spending. That is, there is a negative relationship between welfare and social spending and that the effect of social spending on household welfare is seen to have declined consistently over the years of the GLSS. Also, as the age of head of household progresses from a youthful age, social spending rises up to a point and falls in later years that social spending in more pronounced among the middle-aged adults (mostly, 40-60years) who are or ever married. Again, it is observed that households with primary education or upwards spend more on social events than those with no education.

The results of the hypothesis tests also showed that the effect of social spending on welfare between the poorest households and others increases towards higher quantiles of welfare. This suggests that in the the current poverty analysis, poor households benefit from social spending than rich households. Thus, in the neighbourhood of the 10th percentile of welfare, there is no evidence of differences in the effect of social spending. However, extending the neighbourhood towards higher quantiles like 50th, 75th and 90th quantiles reveal such differential effect. Vulnerability estimates show, to the contrary, the negative repercussions of household social spending behaviour to future poverty for all three years of the GLSS. By comparison, it is seen that vulnerability to poverty due to household social spending in 1998/1999 for the Very poor increased by 2.83 percent which reduced to 1.3 percent by 2012/2013.

Lastly, it was shown that vulnerability to future poverty increases consistently, apart from support outside one's ethnic group, as social support extends far away from the family. This is because support offered to any member of the family benefits the entire household in the present and in the future. Thus, cushioning the household against future vulnerability rather than a support rendered outside the family which would not rake in a commensurate reciprocity. Therefore, households that tend to spread their scarce tentacles to support others through social spending

without receiving in return stand to jeopardise the household's welfare in the next period.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This final chapter, first of all, summarizes the entire study; from statement of problem to results and discussions. This is to encapsulate the research work on fewer pages. It is then followed by conclusions drawn based on the findings of the study and, finally, make policy recommendations based on the research findings.

Summary

Many households in Ghana live below the poverty line, yet a bachelor would need to save for 4 to 5 years in order to have an average marriage ceremony. Such costly spending are believed to perpetuate extreme poverty and even make the non-poor vulnerable to poverty. Moreover, empirical works that exist on social spending in Ghana have not mostly not considered quantitative regression analyses. The general objective of the study is to examine the effects expenditures on social events have on households' welfare and it is intended to provide empirical basis for policies regarding social spending at both community and national level. However, the main limitation of the study is that the unit of analysis is the household rather than the individual. All household members do not spend equally on social events and as such there is the likelihood that the analyses would not reflect true welfare state of individuals in a particular household.

In the reviewed of relevant literature, theories, laws and concepts related to human need, consumption patterns, poverty and welfare as well as empirical works in the context of their focus, methodology and, most importantly, their findings in relation to social expenditure and welfare. The relevant consumption hypotheses discussed included the Keynesian consumption hypothesis, also known as the absolute income hypothesis (AIH), the intertemporal Choice model developed by

Irving Fisher, life-cycle consumption hypothesis by Franco Modigliani and Richard Brumberg. Also, it included the permanent income hypothesis (PIH) by Friedman and, lastly, the relative income hypothesis (RIH), developed by Duesenberry. These laid the foundation to the theoretical framework of how individuals and households behave when faced with consumption decisions set such as those pertaining to social expenditure and welfare choices.

In addition, the theory of social exchange was reviewed. This theory is generally applied to interaction in which giving and receiving material or intangible resources is at least partially predicated on the expectation of return or reciprocity (Blau, 1968; Lawler & Thye, 1999; Uehara, 1990). According to Ekeh (1974), reciprocal interdependence emphasizes contingent interpersonal transactions, whereby an action by one party leads to a response by another and that there exist two basic forms of elementary social exchange, based on two different principles of reciprocity : restricted and generalised social exchanges. While restricted exchange operates on the normative principle of direct or mutual reciprocity, generalised exchange is based on the unilateral or indirect reciprocity principle.

Also, different constructs of the human need theory have shown how, for instance, the poor would want to strive for self-esteem and self-identity among his cohort even when some fundamental needs have not been met. The implication is that individuals' behaviour are likely not to follow the hierarchical order of human needs as popularly known and would possibly explain the ostentatious lifestyle by those who lack the means to prosecute them – a possible reason for developing countries spending lavishly on luxury phones, cars, leisure and so forth.

In the empirical literature, works done in Asia and Africa by authors like De Witte, Chen and Zhang, Jufare and Mango et al showed how social spending places households at risk as they take potentially productive resources and turning them into consumption (coffins, meat, groceries etc.). In China, Chen and Zhang

(2012) found that frequent ceremonies organized by fellow villagers affect early child development. They further stated that households fully anticipating future ceremonies smooth nutritional intake by eating less and at lower quality before the events; second, anticipated large gift expenditure in the near future may lead to lower food consumption today to save money. The studies in Ghana by De Witte and Mazzucato et al focused on funerals and how they affect individuals and households.

The following are the summary of the gaps identified in empirical literature reviewed in this study. First, generally, studies in this area have only focused on one social event at a time. That is, none has considered the aggregate effect of spending on wedding, funeral and festival on household welfare. Second, studies reviewed did not consider quantile analysis of the pro-poor growth in Ghana while considering the effect household social spending on present poverty levels which could provide detail insight into the distribution of effect within groups of poor and non-poor. Third, works on social spending did not consider its effect on future poverty levels (vulnerability to poverty). Fourth, literature failed to include unilateral social support in any quantitative analysis and examine its effect on welfare through social spending and lastly, works reviewed did not also consider how unilateral support affect future poverty levels through social spending.

This study followed the quantitative paradigm which uses quantitative data to test hypotheses (Creswell & Creswell, 2017). Hence, nine different quantitative research designs were discussed. The study design adopted was the cross-sectional design which is best suited to studies aimed at finding out the prevalence of a phenomenon, situation, problem, attitude or issue, by taking a cross-section of the population at the time of the study. Furthermore, the study used a secondary data from the fourth, fifth and sixth rounds of the Ghana Living Standard Survey (GLSS 4 – 6) obtained from Ghana Statistical Service. The fourth, fifth and sixth rounds were conducted in 1998/99, 2005/06 and 2012/13 respectively, having total sample

sizes of 5,998, 8,687 and 16,772 households respectively. The unit of analysis in the study was the household and the Stata statistical software, version 13, was used for data management and statistical analyses.

Two simultaneous equations are specified as a result of endogeneity bias caused by bi-causality where a poor household, essentially having a lower welfare, is likely to spend low amounts on weddings, funerals and vice versa. These simultaneous equations were estimated using Three-Stage Least Square (3SLS) Estimator which uses an instrumental-variables approach to produce consistent estimates and generalized least squares (GLS) to account for the correlation structure in the disturbances across the equations. Also, simultaneous quantile regression is suggested to be used to estimate different quantiles concurrently and to test the significance of the coefficients of social spending between different welfare quantiles using linear combination tests. Lastly, a normal probability distribution approach to capture household vulnerability to poverty was also discussed.

Last but not least, the fourth chapter sought to implement statistical techniques and to analyse the empirical models set out in the third chapter and to achieve objectives set forth in this study namely, first, to determine the differential effect (magnitude) of social spending on welfare between the poor and non-poor households. Second, to estimate households vulnerability to poverty per social spending. Third, to examine the effect of unilateral social support through social spending on welfare and, lastly, to estimate the vulnerability to poverty due to unilateral social support through social spending. The empirical models included a simultaneous equation system where both household welfare and social spending were endogenous; as well as a normal probability distribution which captures the probability of a household engaged in social spending being vulnerable to future poverty. On the other hand, statistical techniques employed in analysing the said models included the Three-Stage Least Square (3SLS) Estimator which efficiently estimated the parameter coefficients of both determinants of household welfare and

social spending. However, before considering the analysis of the stated models, the chapter, first, presented descriptive statistics of the relationship between main variable, social spending, and other demographic variables used in the study.

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Also, results of the hypothesis tests also showed that the effect of social spending on welfare between the poorest households and others increases towards higher quantiles of welfare. This suggests that in the the current poverty analysis, poor households benefit from social spending than rich households. Thus, in the neighbourhood of the 10th percentile of welfare, there is no evidence of differences in the effect of social spending. However, extending the neighbourhood towards higher quantiles like 50th, 75th and 90th quantiles reveal such differential effect. Vulnerability estimates show, to the contrary, the negative repercussions of household social spending behaviour to future poverty for all three years of the GLSS. By comparison, it is seen that vulnerability to poverty due to household social spending in 1998/1999 for the Very poor increased by 2.83 percent which reduced to 1.3 percent by 2012/2013.

Finally, it was shown that vulnerability to future poverty increases consistently, apart from support outside one's ethnic group, as social support extends far away from the family. This is because support offered to any member of the family benefits the entire household in the present and in the future.

Thus, cushioning the household against future vulnerability rather than a unilateral support rendered outside the family which would not rake in a commensurate reciprocity. Therefore, households that tend to spread their scarce tentacles to support others through social spending without receiving in return stand to jeopardise the household's welfare in the next period.

Conclusions

Drawing on the findings as established in this study so far, the following conclusions are made. First, in relation to social spending, it could be said that as households get richer, they would spend less and less proportions of their incomes on social events. This is arrived at as higher welfare was seen to reduce social spending, spanning from 1998/1999 to 2012/2013. In addition, social spending, could be said to be more pronounced among the middle-aged adults (mostly, 40-60years) who are or ever married. Then, households with primary education or higher spend more on social events than those with no education. Thus, formal education does not curtail social spending but rather escalate them. Therefore, in an attempt to control elaborate social spending, formal education will not be appropriate. Lastly, household remittances increase social spending. This means that household remittances go into social spending rather than productive spending or investments.

Furthermore, directly from the hypotheses tested in this study, it is concluded that very poor households benefit more in terms of welfare than non-poor households and that the difference in the effect of social spending widens between the poorest and other households, moving towards higher levels of welfare. However, vulnerability to poverty estimates showed the negative repercussions of household social spending behaviour to future poverty for all three years of the GLSS. Thus, poor households may benefit from social spending in the present but also suffer poverty in the future.

Moreover, as households have higher inclination towards unilateral social support, the more they expend out of their budget such that without a commensurate reciprocity, it reduced household consumption welfare. This was true for all objects of social support. Hence, without accounting for compensating returns, building a strong unilateral social support will reduce household welfare. Finally from the analysis, one could realise that vulnerability to expected poverty increased consistently as social support extended far away from the family. This is so because support offered to any member of the family benefits the entire household in the present and in the future, thus, cushioning the household against vulnerability to poverty rather than a unilateral support rendered outside the family which would not rake in a commensurate reciprocity. Therefore, households that tend to spread their scarce tentacles to support others through social spending without receiving in return stand to jeopardise the household's welfare in the next period.

Recommendations

By virtue of the above conclusions, two key policy recommendations are made towards controlling social spending with its attendant vulnerability to expected poverty.

First, informal sensitisation programmes by agencies like the National Commission for Civic Education (NCCE) should be organised to campaign against high social spending and its effect on future poverty just as has been started by Quaker Social Action in the UK; Marie Curie, Citizens Advice, among other NGOs in the USA.

Lastly, like Tajikistan and India, Ghanaian local and traditional authorities may formulate policies to set guidelines for the indicative costs of organising and running social events aimed at combating the high social spending (Aker & Sawyer, 2016; Danzer, 2013).

Suggestion for Further Research

Future research may consider analysing social spending and welfare at the individual level since social events are mostly patronised by individuals rather than households. This will enable a clearer appreciation of an individual's decision to spend and its consequence on welfare for targeted policies towards individuals.

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APPENDICES

A: Descriptive Statistics: Categorical Variables

	2012/2013		2005/2004		1998/1999	
	No.	%	No.	%	No.	%
Sex of Head						
Female	4247	27.28	2042	26.32	1818	32.72
Male	11321	72.72	5717	73.68	3738	67.28
Total	15568	100.00	7759	100.00	5556	100.00
Marital status of head						
Never married	1520	9.76	685	8.83	402	7.24
Married/co-habiting	10758	69.10	5462	70.40	3790	68.21
Divorced/separated/Widowed	3290	21.13	1612	20.78	1364	24.55
Total	15568	100.00	7759	100.00	5556	100.00
Education level of head						
No education	4454	28.61	2195	28.29	2080	37.44
Primary	3312	21.27	1086	14.00	856	15.41
Secondary 1	4519	29.03	970	12.50	2111	37.99
Secondary 2	1217	7.82	2242	28.90	187	3.37
Superior	2066	13.27	1266	16.32	322	5.80
Total	15568	100.00	7759	100.00	5556	100.00
Industry of head						
Agriculture and fishing	8202	52.68	4407	56.80	3148	56.66
Mining	242	1.55	69	0.89	53	0.95
Manufacturing	1132	7.27	700	9.02	523	9.41
Electricity and utilities	45	0.29	28	0.36	19	0.34
Construction	613	3.94	212	2.73	133	2.39
Commerce	2412	15.49	1116	14.38	774	13.93
Transportation, storage & comm.	784	5.04	310	4.00	187	3.37
Financial, insurance & real estate	100	0.64	125	1.61	66	1.19
Services: public administration	309	1.98	169	2.18	129	2.32

Appendix A, continued

Others	1729	11.11	623	8.03	524	9.43
Total	15568	100.00	7759	100.00	5556	100.00
Employment type of head						
Wage & salaried worker	3735	23.99	1753	22.59	1044	18.79
Self-employed with employees	1206	7.75	2347	30.25	1780	32.04
Self-employed without employees	10053	64.57	3431	44.22	2575	46.35
Family worker	422	2.71	146	1.88	60	1.08
Apprentice/Volunteer/Other	152	0.98	82	1.06	97	1.75
Total	15568	100.00	7759	100.00	5556	100.00
Remittance income						
No	10677	68.58	3790	48.85	2269	40.84
Yes	4891	31.42	3969	51.15	3287	59.16
Total	15568	100.00	7759	100.00	5556	100.00
Ownership of a house						
No	7017	45.07	4020	51.81	3210	57.78
Yes	8551	54.93	3739	48.19	2346	42.22
Total	15568	100.00	7759	100.00	5556	100.00
Ownership of a Car						
No	13897	89.27	7521	96.93	4751	97.48
Yes	1671	10.73	238	3.07	123	2.52
Total	15568	100.00	7759	100.00	4874	100.00
Ethnic group of Head						
Akan	6191	39.77	3604	46.45	5186	93.34
Non Akan	9377	60.23	4155	53.55	370	6.66
Total	15568	100.00	7759	100.00	5556	100.00
Religion of head						
No religion	1092	7.01	571	7.36	416	7.49
Christianity	10373	66.63	5203	67.06	4037	72.66
Islam	4086	26.25	1228	15.83	11.70	
Traditional/Other	17	0.11	757	9.76	453	8.15
Total	15568	100.00	7759	100.00	5556	100.00
Region						

Appendix A, continued

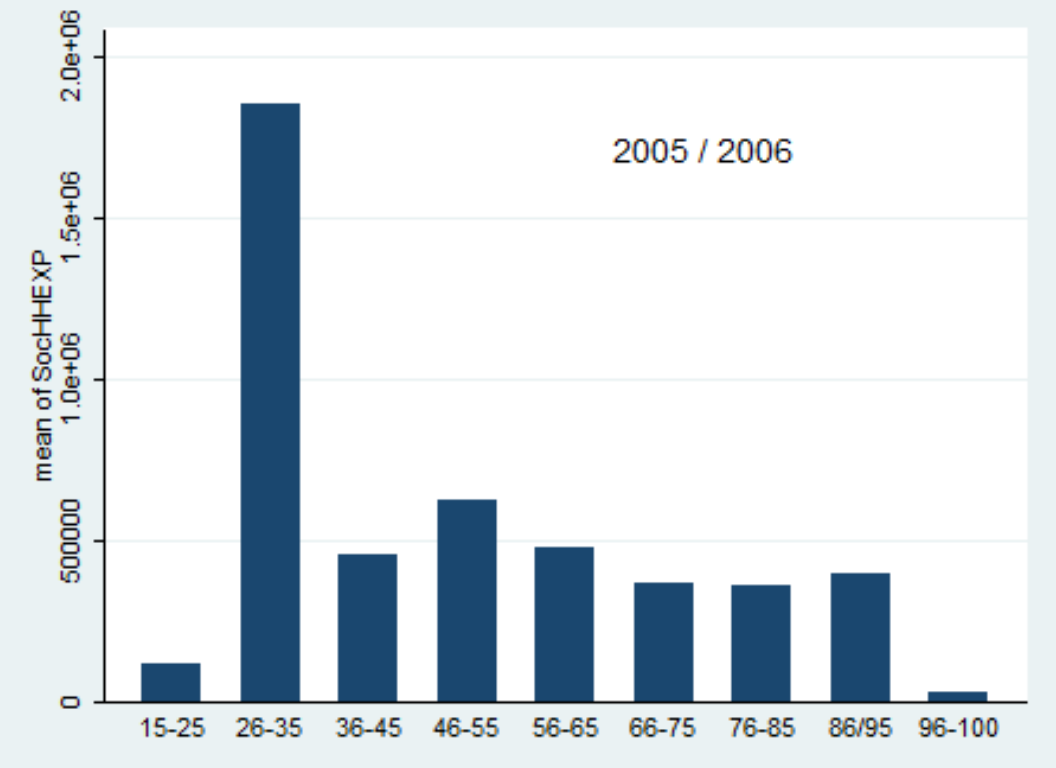
Western	1632	10.48	756	9.74	595	10.71
Central	1402	9.01	620	7.99	657	11.83
Greater Accra	1679	10.78	962	12.40	718	12.92
Eastern	1476	9.48	622	8.02	605	10.89
Volta	1686	10.83	846	10.90	768	13.82
Ashanti	1747	11.22	1411	18.19	984	17.71
Brong Ahafo	1551	9.96	742	9.56	511	9.20
Northern	1648	10.59	733	9.45	348	6.26
Upper West	1416	9.10	582	7.50	113	2.03
Upper East	1331	8.55	485	6.25	257	4.63
Total	15568	100.00	7759	100.00	5556	100.00
Locality						
GAMA	1468	9.43	828	10.67	518	9.32
Other Urban	5204	33.43	2165	27.90	1390	25.02
Rural Coastal	1071	6.88	787	10.14	838	15.08
Rural Forest	3623	23.27	2021	26.05	1881	33.86
Rural Savannah	4202	26.99	1958	25.24	929	16.72
Total	15568	100.00	7759	100.00	5556	100.00
Support to family						
Very Weak	2781	18.50				
Weak	10146	67.50				
Strong	2104	14.00				
Total	15031	100.00				
Support to village						
Very Weak	1654	11.00				
Weak	9364	62.30				
Strong	4013	26.70				
Total	15031	100.00				
Support to Ethnic grp						
Very Weak	1664	11.07				
Weak	9147	60.85				
Strong	4220	28.08				

Appendix A, continued

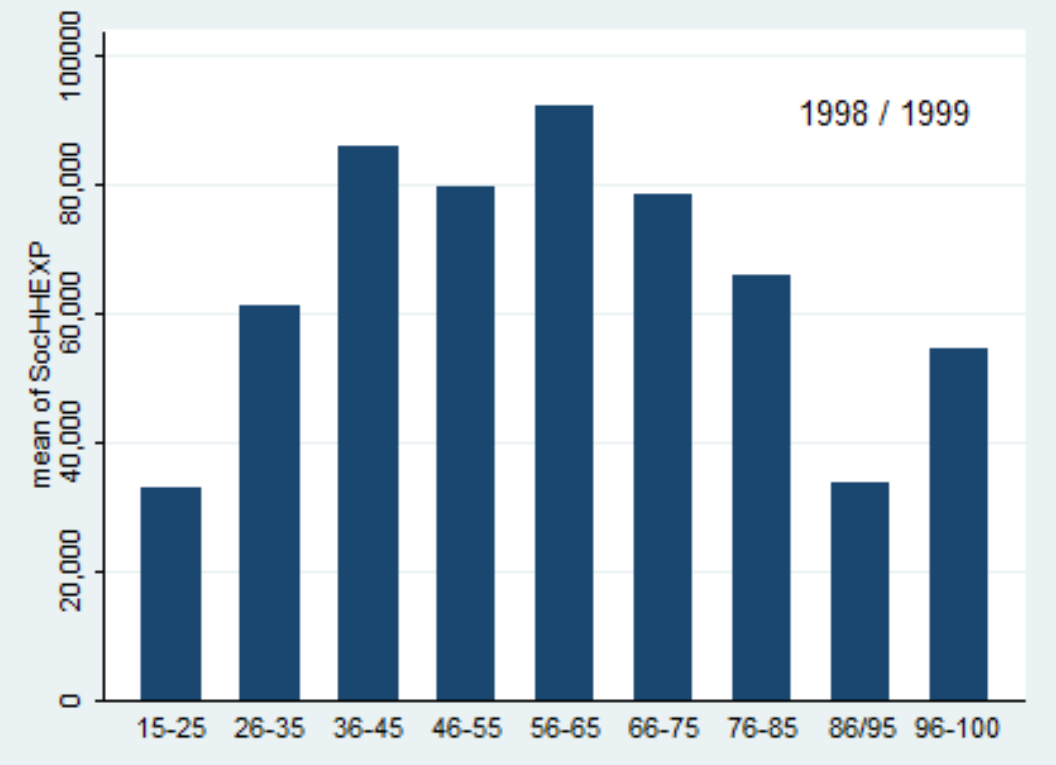
Total	15031	100.00
Support to outside Ethnic grp		
Very Weak	1088	7.24
Weak	8301	55.23
Strong	5641	37.53
Total	15030	100.00
Support to religion		
Very Weak	1271	8.46
Weak	8473	56.38
Strong	5285	35.17
Total	15029	100.00
Support to club		
Very Weak	1477	9.83
Weak	8809	58.61
Strong	4745	31.57
Total	15031	100.00
Support to business comm		
Very Weak	1443	9.60
Weak	8726	58.05
Strong	4862	32.35
Total	15031	100.00

Source: GLSS 4, 5 and 6

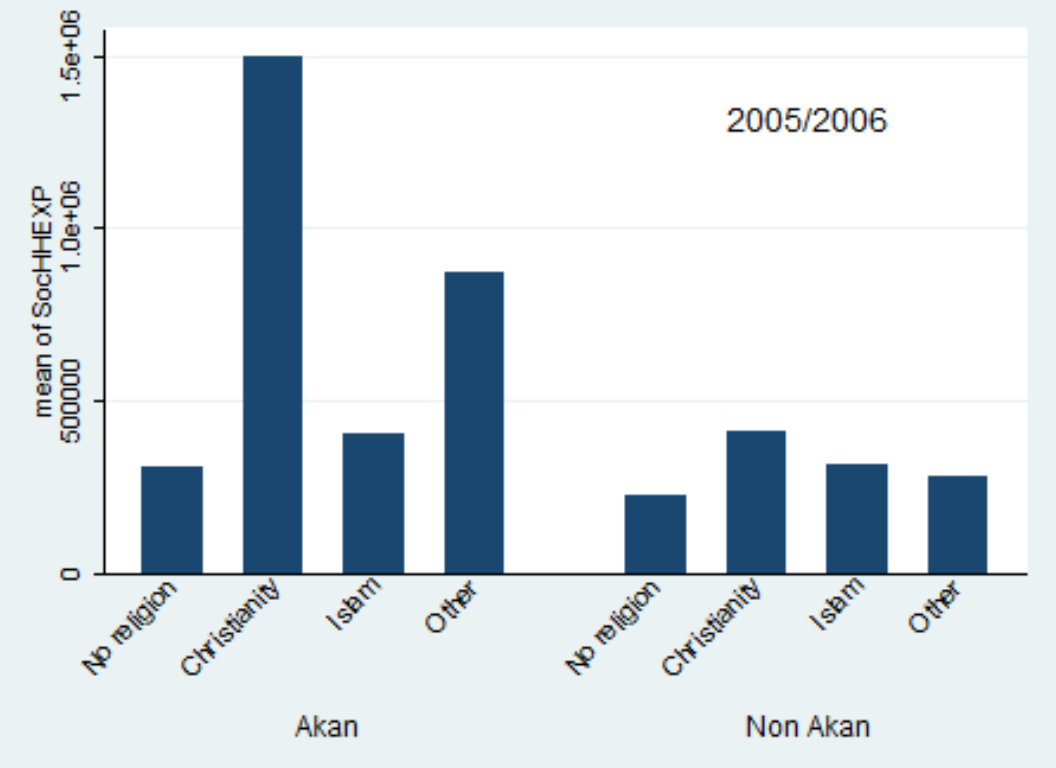
B: Mean social spending and age of head of households (2005/2006)



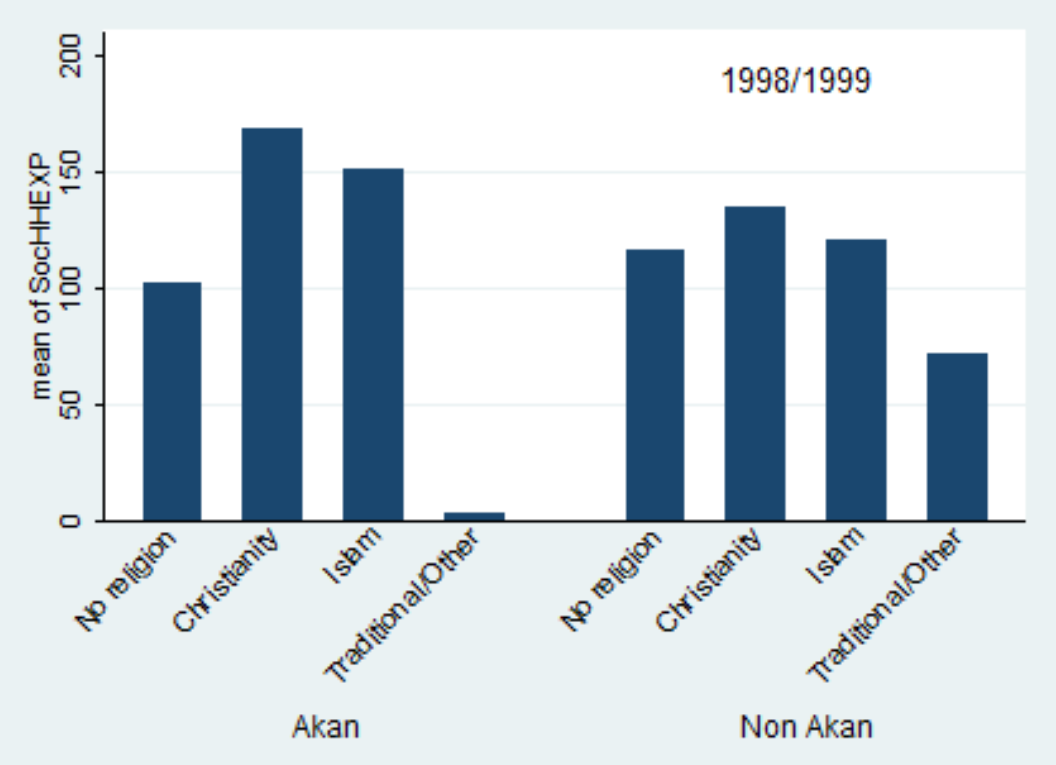
C: Mean social spending and age of head of households (1998/1999)



D: Mean social spending, and ethnic and religious groups of head of households (2005/2006)



E: Mean social spending, and ethnic and religious groups of head of households (1998/1999)



F: Three stage least square estimation (2012/2013)

	Welfare		
	Coef.	[Conf. Interval]	
Social spending	0.0591***	0.0471	0.0710
Age	-0.00229	-0.00639	0.00182
Square of age	0.0000235	-0.0000152	0.0000622
Household size	-0.231***	-0.241	-0.221
Square of household size	0.00913***	0.00848	0.00978
Sex of head			
Male	-0.0559***	-0.0859	-0.0259
Marital status of head			
Married/co-habiting	0.0147	-0.0289	0.0583
Divorced/separated/Widowed	-0.0639**	-0.112	-0.0155
Education of head			
Primary	0.131***	0.101	0.160
Secondary	0.285***	0.255	0.315
Tertiary/Higher	0.581***	0.535	0.627
Non-formal/other	0.197***	0.142	0.253
Industry of head			
Mining	0.269***	0.186	0.351
Manufacturing	0.112***	0.0703	0.154
Electricity and utilities	0.118	-0.0637	0.299
Construction	0.103***	0.0481	0.158
Commerce	0.200***	0.166	0.234
Transportation, storage & communications	0.111***	0.0593	0.164
Financial, insurance & real estate	0.365***	0.239	0.491
Services: public administration	0.211***	0.137	0.286
Others	0.145***	0.103	0.187
Employment status of head			
Self-employed with employees	0.0994***	0.0568	0.142

Appendix F, continued

Self-employed without employees	-0.0208	-0.0534	0.0117
Family worker	-0.0296	-0.0941	0.0349
Apprentice/Volunteer/Other	-0.135**	-0.235	-0.0354
Remittance income			
Yes	0.0101	-0.0132	0.0333
Ownership of house			
Yes	0.0285*	0.00659	0.0503
Ownership of car			
Yes	0.261***	0.225	0.296
Locality			
Other Urban	-0.386***	-0.431	-0.342
Rural Coastal	-0.447***	-0.499	-0.394
Rural Forest	-0.559***	-0.606	-0.511
Rural Savannah	-0.854***	-0.901	-0.807
Constant	8.910***	8.774	9.046
Social spending			
Welfare	-0.626***	-0.911	-0.342
Age	0.161***	0.127	0.195
Square of age	-0.00140***	-0.00173	-0.00107
Sex of head			
Male	0.518***	0.249	0.786
Marital status of head			
Married/co-habiting	1.894***	1.543	2.244
Divorced/separated/Widowed	1.427***	1.011	1.843
Education of head			
Primary	0.499***	0.223	0.775
Secondary	0.715***	0.423	1.008
Tertiary/Higher	1.750***	1.292	2.207
Non-formal/other	1.026***	0.524	1.528
Industry of head			
Mining	0.457	-0.274	1.188
Manufacturing	0.440*	0.0701	0.811

Appendix F, continued

Electricity and utilities	1.286	-0.349	2.921
Construction	-0.123	-0.605	0.358
Commerce	0.182	-0.125	0.489
Transportation, storage & communications	-0.193	-0.631	0.245
Financial, insurance & real estate	1.184*	0.0519	2.317
Services: public administration	0.188	-0.471	0.848
Others	0.0818	-0.266	0.430
Remittance income			
Yes	0.683***	0.485	0.881
Religion of head			
Christianity	0.311	-0.0336	0.656
Islam	0.624**	0.242	1.005
Traditional/Other	-2.668*	-5.255	-0.0817
Ethnic group of head			
Non Akan	-0.129	-0.373	0.116
Region			
Western	-1.186***	-1.554	-0.817
Central	-1.641***	-2.027	-1.255
Greater Accra	-2.856***	-3.248	-2.464
Eastern	-2.175***	-2.597	-1.753
Volta	-0.764***	-1.135	-0.394
Brong Ahafo	-0.243	-0.621	0.136
Northern	-0.486*	-0.934	-0.0394
Upper east	-2.383***	-2.831	-1.935
Upper West	-2.719***	-3.205	-2.232
Constant	1.400	-1.160	3.961
Observations	15568		

95% confidence intervals in second column

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

G: Simultaneous Quantile Regression – 2005/2006

	Welfare Quantiles				
Variable	10th	25th	50th	75th	90th
Social spending	0.0295***	0.0311***	0.0290***	0.0259***	0.0195***
Age	-0.00519	-0.00826	-0.00603	0.000740	0.0102*
Square of age	0.0000553	0.0000729	0.0000617	0.00000166	-0.0000774
Household size	-0.229***	-0.210***	-0.247***	-0.268***	-0.281***
Square of household size	0.00925***	0.00780***	0.0104***	0.0118***	0.0126***
Sex of head					
Male	-0.119***	-0.0863**	-0.0897***	-0.0719**	-0.0779*
Marital status of head					
Married/co-habiting	0.0258	0.0581	0.0260	0.0474	0.0354
Divorced/separated/Widowed	-0.111*	-0.0765	-0.0815*	-0.0863*	-0.0986*
Education of head					
Primary	0.119***	0.158***	0.104***	0.0860**	0.0580
Secondary	0.255***	0.233***	0.199***	0.173***	0.148***
Tertiary/Higher	0.545***	0.589***	0.540***	0.546***	0.483***

Appendix G, continued

Non-formal/other	0.0985***	0.0909*	0.0670*	0.0836*	0.0713
Industry of head					
Mining	0.285*	0.193*	0.267***	0.231***	0.312**
Manufacturing	0.101**	0.0726	0.0518	0.0286	0.0389
Electricity and utilities	0.233*	0.2890*	0.1246	0.101	0.338
Construction	0.110**	0.221**	0.0262	-0.0447	-0.0511
Commerce	0.157***	0.185***	0.108***	0.112***	0.0825*
Transportation, storage and communications	0.0369	0.063	0.0600	0.0579	0.0204
Financial, insurance and real estate	0.157	0.095	0.1562*	0.100	0.109
Services: public administration	0.0864	0.107	0.122*	0.113	0.0856
Others	0.101*	0.149**	0.0733*	0.0596	0.0317
Employment status of head					
Self-employed with employees	-0.0212	-0.000831	-0.00135	0.0288	0.0162
Self-employed without employees	-0.156***	-0.125***	-0.198***	-0.154***	-0.175***
Family worker	-0.0346	-0.0761	-0.173***	-0.0992	-0.112
Apprentice/Volunteer/Other	-0.148	-0.188	-0.116	-0.114	-0.0766
Remittance income					
Yes	-0.0315	-0.0222	-0.00376	0.00248	-0.0198
Ownership of house					

Appendix G, continued

Yes	0.00704	0.0158	0.0280	0.0513*	0.0469*
Ownership of car					
Yes	0.739***	0.804***	0.744***	0.882***	0.943***
Locality					
Other Urban	0.120***	0.0981*	0.150***	0.122***	0.0895*
Rural Coastal	-0.109*	-0.0797	-0.145***	-0.183***	-0.185***
Rural Forest	-0.129***	-0.117*	-0.169***	-0.219***	-0.236***
Rural Savannah	-0.581***	-0.716***	-0.506***	-0.459***	-0.362***
Constant	14.66***	14.30***	15.05***	15.27***	15.49***

95% confidence intervals in second, third and fourth columns

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

H: Simultaneous Quantile Regression (1998/1999)

	Welfare Quantiles				
Variable	10th	25th	50th	75th	90th
Social spending	0.0367***	0.0340***	0.0303***	0.0270***	0.0201***
Age	-0.0133	-0.00778	-0.0107*	-0.00877*	-0.0150*
Square of age	0.000139*	0.0000878	0.000116**	0.0000889*	0.000145*
Household size	-0.239***	-0.269***	-0.301***	-0.344***	-0.354***
Square of household size	0.0116***	0.0135***	0.0157***	0.0192***	0.0200***
Sex of head					
Male	-0.0999**	-0.102***	-0.112***	-0.133***	-0.104*
Marital status of head					
Married/co-habiting	-0.0221	-0.0170	0.0542	0.0851	0.104
Divorced/separated/Widowed	-0.145	-0.156*	-0.0933	-0.0129	0.0102
Education of head					
Primary	0.0278	0.111**	0.0994***	0.0899**	0.0450
Secondary	0.145**	0.213***	0.184***	0.185***	0.167***
Tertiary/Higher	0.284***	0.332***	0.319***	0.367***	0.284***

Appendix H, continued

Non-formal/other	-0.0421	0.156	0.0627	-0.0275	0.167
Industry of head					
Mining	0.473**	0.546***	0.473***	0.374***	0.225
Manufacturing	0.192***	0.140***	0.187***	0.215***	0.193***
Electricity and utilities	0.468***	0.318**	0.121	0.0175	-0.00173
Construction	0.107	-0.00126	0.00877	0.0547	-0.0201
Commerce	0.190***	0.156***	0.228***	0.196***	0.155**
Transportation, storage and communications	0.250**	0.207**	0.292***	0.224***	0.0791
Financial, insurance and real estate	0.490***	0.355**	0.350***	0.319***	0.379**
Services: public administration	0.313***	0.223***	0.242***	0.204***	0.156
Others	0.195***	0.144***	0.135***	0.104*	0.112
Employment status of head					
Self-employed with employees	-0.0540	-0.0202	-0.0454	-0.0564	-0.0656
Self-employed without employees	-0.145**	-0.122**	-0.135***	-0.142***	-0.184**
Family worker	-0.458	-0.237*	-0.151	-0.156	-0.125
Apprentice/Volunteer/Other	-0.102	-0.0970	-0.165*	-0.183*	-0.0922
Remittance income					
Yes	-0.0190	-0.0679***	-0.0412	-0.0620**	-0.0620*
Ownership of house					

Appendix H, continued

Yes	0.0101	0.00933	0.0396	0.0262	0.0856**
Ownership of car					
Yes	0.716***	0.619***	0.617***	0.603***	0.788***
Locality					
Other Urban	-0.290***	0.120***	-0.186***	-0.102**	-0.0195
Rural Coastal	-0.471***	-0.418***	-0.365***	-0.277***	-0.212***
Rural Forest	-0.337***	-0.297***	-0.268***	-0.204***	-0.177***
Rural Savannah	-0.702***	-0.696***	-0.625***	-0.545***	-0.434***
Constant	14.49***	14.93***	15.25***	15.53***	16.18***

95% confidence intervals in second, third and fourth columns

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

I: Hypothesis testing (2012/2013)

(a)	[q10]lnSocHHEXP - [q25]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(a)	-.000083	.0010541	-0.08	0.937	-.0021492	.0019832
(b)	[q10]lnSocHHEXP - [q50]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(b)	.0017662	.0013696	1.29	0.197	-.0009184	.0044509
(c)	[q10]lnSocHHEXP - [q75]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(c)	.0068907	.0016266	4.24	0.000	.0037024	.010079
(d)	[q10]lnSocHHEXP - [q90]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(d)	.0103881	.00199	5.22	0.000	.0064874	-.0142888
(e)	[q25]lnSocHHEXP - [q50]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(e)	.0018492	.0011339	1.63	0.103	-.0003734	.0040719
(f)	[q25]lnSocHHEXP - [q75]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(f)	.0069737	.0014971	4.66	0.000	.0040392	.0099082
(g)	[q25]lnSocHHEXP - [q90]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(g)	.0104711	.001774	5.90	0.000	.0069938	.0139484

Appendix I, continued

(h)	[q50]lnSocHHEXP - [q75]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(h)	.0051245	.0011293	4.54	0.000	.0029109	.0073381

(i)	[q50]lnSocHHEXP - [q90]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(i)	.0086219	.0014835	5.81	0.000	.005714	.0115297

95% confidence intervals in the last columns

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

J: Hypothesis testing (2005/2006)

(a)	[q10]lnSocHHEXP - [q25]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(a)	.0016622	.0024916	0.67	0.505	-.003222	.0065464
(b)	[q10]lnSocHHEXP - [q50]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(b)	.0021479	.0027864	0.77	0.441	-.0033142	.0076101
(c)	[q10]lnSocHHEXP - [q75]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(c)	.0052669	.0030443	1.73	0.084	-.0007008	.0112346
(d)	[q10]lnSocHHEXP - [q90]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(d)	.0116117	.003369	3.45	0.001	.0050076	.0182158
(e)	[q25]lnSocHHEXP - [q50]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(e)	.0004858	.0016993	0.29	0.775	-.0028452	.0038167
(f)	[q25]lnSocHHEXP - [q75]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(f)	.0036047	.0023963	1.50	0.133	-.0010928	.0083022
(g)	[q25]lnSocHHEXP - [q90]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(g)	.0099495	.0026044	3.82	0.000	.0048442	.0150547
(h)	[q50]lnSocHHEXP - [q75]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(h)	.0031189	.0018679	1.67	0.095	-.0005426	.0067805

Appendix J, continued

(i)	[q50]lnSocHHEXP - [q90]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(i)	.0094637	.0022969	4.12	0.000	.0049611	.0139663

95% confidence intervals in the last columns

$^{*}\ p < 0.05, ^{**}\ p < 0.01, ^{***}\ p < 0.001$

K: Hypothesis testing (1998/1999)

(1)	[q10]lnSocHHEXP - [q25]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(1)	.0026866	.0040471	0.66	0.507	-.0052475	.0106207

(1)	[q10]lnSocHHEXP - [q50]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(1)	.0064077	.0041951	1.53	0.127	-.0018167	.014632

(1)	[q10]lnSocHHEXP - [q75]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(1)	.0096821	.0038918	2.49	0.013	.0020524	.0173119

(1)	[q10]lnSocHHEXP - [q90]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(1)	.0165779	.0054149	3.06	0.002	.0059621	.0271936

(1)	[q25]lnSocHHEXP - [q50]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(1)	.0037211	.0036073	1.03	0.302	-.003351	.0107931

(1)	[q25]lnSocHHEXP - [q75]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(1)	.0069955	.0039865	1.75	0.079	-.0008198	.0148109

(1)	[q25]lnSocHHEXP - [q90]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(1)	.0138913	.0053753	2.58	0.010	.0033532	.0244293

Appendix K, continued

(1)	[q50]lnSocHHEXP - [q75]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(1)	.0032745	.0028449	1.15	0.250	-.0023029	.0088519

(1)	[q50]lnSocHHEXP - [q90]lnSocHHEXP = 0					
lnwelfare	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
(1)	.0101702	.0046691	2.18	0.029	.0010166	.0193238

95% confidence intervals in the last columns

$^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$