

UNIVERSITY OF CAPE COAST

**EDUCATION OF WOMEN AND POVERTY REDUCTION IN
NAVRONGO**

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BY

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DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the results of my own original work and that no part of it has been presented for another in this university or elsewhere.

Candidate's Name: Augustine Atiniriba Atanga

Signature:.....

Date:.....

Supervisor's Declaration

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

Supervisor's Name: Dr. E. K. Ekumah

Signature:.....

Date:.....

ABSTRACT

The study discussed how education of women could lead to poverty reduction among women. Data was collected on variables as age, educational level, dependency, income, access to healthcare; microcredit, water and sanitation, land and labour market. In all, 190 women from 10 different communities were interviewed. The selection was done using the lottery method in unbiased manner.

Evidence of the problems relating to access to healthcare, microcredit, water and sanitation, land and labour market were explored and their relationship established. The study revealed that women with lower level of education and training tend to have lower incomes. This equally affected their ability to access healthcare, microcredit, land and employment. Also women with lower level of education were associated with large family size. This certainly drained economic resources for business, education and political participation.

Efforts should be made conscientiously to encourage young girls to avail themselves for education and older women for training in trade or vocations of their choice. By this, younger girls would not rush to the towns and cities to be engaged as porters where the majority get pregnant and drop out of school.

Efforts should be made by the Kassena/Nankana East District Assembly, Churches and Traditional leaders at discouraging early marriages in Navrongo. Also encouraging the illiterate mothers to practice family planning methods could help reduce the size of families which are reasonably large in Navrongo through public education to stop the incidence of large family size.

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DEDICATION

To the Atanga family in Natugnia-Navrongo, my wife Claudia Atanga and Children; Elias, Enos, Moses and Josephine.

TABLE OF CONTENTS

Content	Page
DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
DEDICATION	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF ACRONYMS	x
CHAPTER ONE: INTRODUCTION	1
Background to the study	1
Statement of the problem	4
Objectives of the study	6
Research questions	7
Significance of the study	7
Organisation of the study	8
Limitations of the study	8
CHAPTER TWO: REVIEW OF RELATED LITERATURE	10
Introduction	10
The human capital theory	10
Empirical evidence of education and poverty reduction	12

Critique of the human capital theory	16
Concept of poverty	17
Relative and absolute poverty	18
The concept of education	28
Types of learning	29
CHAPTER THREE: METHODOLOGY	37
Introduction	37
Research design	37
Study population	38
Sampling and sampling procedure	38
Data collection method	41
Data analysis procedure	43
CHAPTER FOUR: RESULTS AND DISCUSSION	44
Introduction	44
Background of respondents	44
Number of indicators used to access microcredit	59
Women with education and access to healthcare	66
Women with education and access to microcredit	67
Women with education and access to land	68
Women with education and access to employment	69
Summary	70

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND	
RECOMMENDATIONS	73
Introduction	73
Summary	73
Conclusions	78
Recommendations	79
Areas for further research	80
REFERENCES	81
APPENDICES	90
1 Interview schedule for women in Navrongo	90
2 Regression equation	94
3 Regression and chi-square tables	95
4 Map of Kassena/Nankana - Navrongo	101

LIST OF TABLES

Table	Page
1 Sample size reliability and validity	39
2 Breakdown of respondents in the communities interviewed	40
3 Age distribution of women	45
4 Level of education of respondents	46
5 Marital status of respondents	48
6 Employment status of respondents	48
7 Number of dependents of the respondents	50
8 Level of education and annual income	51
9 Level of education and categories of income	52
10 Education and healthcare	56
11 Indicators of healthcare	57
12 Education and microcredit	59
13 Indicators of access to microcredit	60
14 Education and access to land	62
15 Indicators of access to land	63
16 Level of education and access to employment	64
17 Indicators of access to employment	65

LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ECA	Economic Commission for Africa
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GSS	Ghana Statistical Services
HDI	Human Development Index
HIV	Human Immuno-deficiency Virus
HRD	Human Resource Development
IDS	Institute for Development Studies
IFD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
MOFA	Ministry of Food and Agriculture
NGOs	Non-governmental Organisations
NHIS	National Health Insurance Scheme
OECD	Organisation for Economic Co-operation Development
SPSS	Statistical Product and Service Solution
UDS	University for Development Studies
UN	United Nations
UNDP	United Nations Development Program

CHAPTER ONE

INTRODUCTION

Background to the study

The feminization of poverty remains a global phenomenon. Women are still the poorest of the world's poor representing 70 percent of 1.3 billion people who live in absolute poverty (UNDP, 1995). Poverty has denied many women in the world of their economic, political, social and cultural rights. It is the denial of various choices and opportunities basic to human development. These include the ability to live a fulfilling, creative and healthy life, to acquire knowledge, to have freedom, dignity and self respect for others and to have access to resources needed for decent standard of living. The situation in which a group is enjoying and given every opportunity for advancement, and another group is suffering and denied the opportunity for advancement leads to several questions being asked in both the academia and general society.

The UN Social Summit in Geneva in 2000 restated their commitment to social protection as a core issue in poverty alleviation by all world leaders that met. They also adopted the millennium declaration to fight global poverty and related conditions. At this forum the twin issue of material deprivation and the experience of diminished civil and political right made a compelling case for highlighting the dangers of social exclusion and its impact on sustainable human development (World Bank, 2007).

Abundant empirical and statistical evidence exists showing that Ghana has achieved remarkable economic and stabilization over the past eight years. Despite these achievements there is a growing perception that a large number of people and groups are not benefiting from the gains made so far from such growth.

The continuous existence of the poverty cycle in the Ghanaian society must be broken before we may talk of reduction in poverty levels. This is usually characterized by low incomes which results in low savings. Low savings result in shortage of capital for investment and this in turn results in low investment. Low investment leads to low output and consequently to low income resulting again in low savings and the vicious cycle of poverty continues.

Poverty trends in Ghana also differ among the various economic sectors. Poverty is particularly evident in two sectors in Ghana: agriculture and the informal sector, with the agricultural sector being the worst affected. Next to agriculture, 29 per cent of those in the informal and small enterprises live below the poverty line (UNDP, 2007). It was also observed that there is a general decline in the incidence of poverty for all groups. The absolute figures indicate that food crop farmers are the poorest compared to people in other activities. They recorded the highest poverty incidence of 68 percent in 1991/92 but fell to 46 in 2005/06.

According to the Ghana Poverty Reduction Strategy document (Ghana Statistical Service, 2005b), 7 out of every 10 inhabitants in the Upper East region live in poverty. It is a fact that both men and women in the region are faced with the problem of poverty, but the institutional structures and socio-

cultural factors tend to place the scanty resources in the hands of men, thereby compelling women to depend on men for resources and as a result limiting their access to education and training.

Also, gender-based discrimination against women coupled with limitations set by religion and culture tends to truncate the extent to which they access and utilize information and resources as well as availing themselves for opportunities of education and training. This therefore places a toll on women's ability to move out of poverty and contribute to national economic development.

According to Ghana's Human Development report (Ghana Statistical Service, 2007), there is a relationship between Human Development and Poverty. An attempt to measure this relationship for Ghana indicates that a 1 percent increase in Human Development Index (HDI) is associated with 0.27 percent reduction in poverty. There is a negative relationship between HDI and poverty rate. As HDI increases, poverty rates decreases.

Navrongo is the capital of the Kassena/Nankana East District in the Upper East Region of Ghana. Navrongo is one of the oldest educational towns in Northern Ghana. Navrongo has a total population of 15983 (2000 population and housing census figures). This is disaggregated into 7615 males and 8368 females.

A number of educational institutions have been established in Navrongo ranging from primary to the tertiary categories. The Navrongo community which should have benefited from these facilities especially women have been left behind (Awumbila, 2001).

A vast amount of agricultural lands are available for the cultivation of various food crops. The Tono Irrigation Dam is also located around Navrongo with irrigable land area of 300,000 hectares. Poverty is a serious problem facing women in Navrongo both in the urban centre and the rural communities. This age-old problem is viewed to be economic, cultural and social. The issue of poverty might be more serious than that captured by routine data collection. There is seemingly increasing levels of poverty in most parts of Ghana, especially Northern Ghana and for that matter the Upper East Region. The phenomenon seems to defy all social, economic, political prescriptions and several governmental interventions over the years.

This work inter alia investigated the validity of education and training as a tool for poverty reduction among women in Navrongo in the Kassena/Nankana East District in building their capacity to have access to economic, social and political resources.

Statement of the problem

The Ghana Human Development Report (Ghana Statistical Service, 2007), stated that poverty levels were falling with the proportion of Ghanaians described as poor in 2005/2006 being 28.5 percent as against 29.5 percent in 1998/1999. Those described as extremely poor also declined from 26.8 percent to 18.2 percent. The incidence of poverty in female-headed households from 43 percent to 19 percent between 1991 – 1992 and 2005 – 2006 compared with the incidence of poverty in male-headed households from 55 percent to 31 percent. The difference of 24 percent in both male-headed and female-headed showed that when women are given resource and a voice,

poverty among women would decline. In spite of these improvements the report noted that inequality between elites and the poor has increased. It noted:

“Females, the urban poor, the rural poor, the disabled, the less educated and the people within the Northern Savannah ecological zones in general have fared worse on several indices of development such as education, literacy levels, HIV/AIDS prevalence rates, access to health and facilities for hygienic disposal of human wastes. This pointed to the need to close the gaps in social exclusion. It is important to work towards a more inclusive society in the country at all levels of the society” (Ghana Statistical Services, 2007, p.55).

The division between the three Northern Regions and the Southern ones, with respect to critical dimension of human development, needs to be bridged. With respect to these, empirical studies using well disaggregated data should be undertaken to carefully delineate the causes and address them conscientiously. Therefore, there is the need to depoliticise the problem as well as to deemphasize ethnic sentiment. It is for this reason that the researcher wanted to investigate and establish the relationship between education and training of women and poverty reduction in Navrongo.

Poverty is the shortage of common things such as food, clothing, shelter and safe drinking water, all of which determine the quality of life. It may also include the lack of access to opportunities such as education and employment which aid the escape from poverty and /or allow one to enjoy the respect of fellow citizens (World Bank, 2009).

The people of Navrongo in the Kassena/Nankana District of Upper East Region are predominantly farmers and small scale enterprise owners. The level of material deprivation among the people has led to the high exodus of the youth (mostly girls) to the southern sectors of Ghana. Poverty leads to social exclusion of people in any given society. Poverty is thus one of the major hindrances to women's participation in cultural, economic and political activities of their societies. Is this not the situation in which most Ghanaian women have found themselves and for that matter the women of Navrongo in the Kassena/Nankana District of Upper East Region in Ghana?

The researcher carried out a scientific investigation into establishing the relationships existing between education of women and poverty reduction.

Objectives of the study

The study generally examined the extent to which education of women influenced a reduction in poverty in Navrongo.

The specific objectives of the study are:

- Establishing the relationship between education and
 - i. Access to health care.
 - ii. Access to microcredit.
 - iii. Access to land.
 - iv. Access to employment.
- Assessing the impact of education and income level.
- Making recommendations to appropriate bodies.

Research questions

- Does the level of educational attainment lead to access to health care?
- To what extent do educational level attained cause women to have access to microcredit?
- Is there any association between level of education attained and access to land?
- Can educational level attained lead to access to employment?
- What is the impact of women's educational level and income level?

Significance of the study

The development of every society or community depends on the availability of the resource it has. Human resource is seen as the core of any developmental process. The quality and the calibre of the human resource present in a country is largely dependant on the amount of education and training given to them. Education therefore plays a critical role at reducing poverty among people. It was imperative for this study to be conducted in Navrongo to determine the extent to which education influenced poverty reduction. The study served as a useful guide for the Navrongo community, the District Assembly, and other stakeholders to take appropriate steps to educate women to bring about poverty alleviation.

It was also established by the researcher that the results of the study will contribute to the body of knowledge in the area of HRD in general by serving as a source of reference for other researchers.

Even though the study was limited to Navrongo, it was anticipated that the findings could be helpful to other societies, states and organisations

working on poverty reduction among women. The publicity of the findings would help women groups, NGOs, Government and communities working on poverty reduction to adopt appropriate education that could empower women to move out of poverty.

Organisation of the study

The study was organised into five chapters. Chapter One dealt with the background to the study that included statement of the problem, objective of the study, research hypotheses, and the significance of the study, organisation of the study and limitations of the study. Chapter Two covered the review of the relevant literature; theories and concepts carried out by other researchers.

Chapter Three dealt with the methodology that was used to carry out the research. It contains the design, study population, sampling, data collection methods and analysis procedure. Chapter Four focused on the analysis and discussions of data. While Chapter Five covered the summary of findings, conclusions and recommendations.

Limitations of the study

The following were the limitations to study:

- Some respondents refused to give answers to certain questions during the interview. This resulted in the shortfall of 10 women representing 5% of the estimated sample population.
- The researcher was limited by time and resource constraint. Because of the politicization of women groups. It was apparent that once a

meeting was schedule with them, certainly they expected some cash flows. As a result some women did not want to disclose their earnings after the first meeting. This delayed the period planned to complete the fieldwork. And so visiting some of them severally to obtain some vital information with my research assistants, draining my resources greatly.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

This chapter reviewed the human capital theory of which education and training of the human resources was seen as core to the development of that society leading to poverty reduction. It examined also the empirical evidence provided by various researchers in different countries and institutions, and a critique of the theory. This was directly followed by the definition of the concept of poverty, the difference between absolute and relative poverty were explained.

The human capital theory

Development economists and sociologists attribute rapid economic growth and development to the quality of human resources that a country has. To them it is the people and not the physical resources that the country is endowed with that determine the quality of economic growth and social development (Psacharopoulos & Woodhall, 1997).

The Human Capital theory was formulated by economists such as Schultz (1963), Denison (1962), Becker (1964), and Harbison and Myers (1964). It attempts to prove that formal education is the major factor in improving the productive capacity of a population. They tried to link high productivity and the resultant rapid economic growth to the quality of human

resources of a country manifested by the quality and level of their educational attainment (Acheampong, 2006).

Todaro (2000), submits to the argument that; *“it is the human resources of a nation and not its physical capital and material resources that determines the speed of a country’s economic growth”*. Harbison and Myers (1964 p.228) says that: *“Human Resources constitute the ultimate basis for the wealth of nations. Capital and natural resources are passive factors of production; human beings are the active agents who accumulate capital, exploit natural resources, build social, economic and political organisations, and carry forward national development. Clearly, a country which is unable to develop the skills and knowledge of its people and to utilize them effectively in the national economy will be unable to develop anything else”*.

Todaro (2000) and Harbison (1994) lay more emphasis on human capital development as a tool to propel rapid economic growth and development and thereby throwing a challenge to national governments to take up their roles of providing the right kind of education to their citizenry in order to ensure growth and development of their economies.

The human capital theory of economic development was given a further boost by a report submitted by a Commonwealth group of experts on the Impact of Global Economy, Political Change on Development Process, (Nancy, 1997). The report stated, among other things, that human beings are not only the recipients of development but also the creators of development as well. This implies that human beings are the main determinants of their development and social well-being and therefore must be empowered to initiate and propel their socio-economic development. This can be done

through accelerated technological change and increasing the knowledge-base activities such as education and training.

Again the human capital theory is linked to education and training as a means of injecting growth and development into the economy directly through employment, enhanced productivity, enhanced income and a composition of civil society that promotes social growth (Acheampong, 2006).

Weil (2005) tries to link human capital and economic productivity to health. He believes that if people are healthy they can work harder for longer periods of time, concentrate better at their jobs and above all exhibit greater intellectual abilities. This view is being supported by Acheampong (2006). In his presentation, he stated among other things, that education is considered to be desirable for women because it makes them more competitive in terms of seeking job opportunities, improves their nutrition and health conditions and enhances productivity, income and wealth. This behoves national governments to adopt all round pragmatic educational and training strategy that would not only cater for the mental needs but also cater for the social, economic as well as health and sanitation needs.

Empirical evidence of education and poverty reduction

Poverty can be traced back to when humans began to accommodate surplus of food and material wealth (Manley, 1997). This led to the development of a social system whereby some people accumulated more goods and resources than others leading to an uneven distribution of resources. This situation has worsened to the point today whereby some people do not have the most basic necessities such as food and good water.

It is believed that, poverty is one of the major hindrances to women's participation in politics, economic life, market (access to land, financial services, labour market and technology) and voice within the household (household resource and task allocation, fertility decision) (World Bank, 2007).

Poverty is seen as a denial of human rights. It is the denial of various choices and opportunities basic to human development. These include the ability to live a fulfilling, creative and healthy life, to acquire knowledge, to have freedom, dignity and self-respect and respect for others, and to have access to the resources needed for decent standard of living (Agbalajobi, 2008).

The impact of poverty on women's lives varies from country to country, region to region etc. In the USA for example, this disparity is reflected by a glass ceiling which debar most women from advancing to top levels of management positions. In some Asian societies, gender disparity can compromise the basic health of women in poor families because they are the last in the household to receive food and medical care (Nancy, 1997).

Throughout the world, cultural traditions pose obstacles to women's health and welfare. Many traditions have portrayed women as less important than men, less desiring of basic life support or of fundamental rights that are strongly correlated with quality of life, such as right to work, and right to political participation (Amoako, 1997). Sometimes the women resist these traditions which have become so deeply internalised that they seem to record what is disparity and women themselves frequently come to endorse their own second-class status.

In the contemporary world, womenfolk that form a majority of the world population receive only a small proportion of her opportunities and benefits. Women constitute half of the world's population, perform nearly two-third of work hours, receive one-tenth of the world's income and own less than one-hundredth of the world's property (Vickers, 1991).

The 2006 World Development Report acknowledged the importance of ensuring equal opportunities across population groups as an intrinsic aspect of development and as an instrument for achieving poverty reduction and growth (World Bank, 2005).

Poverty may affect individuals or groups, and is not confined to the developing nations. Poverty in developed countries is manifest in a set of social problems including homelessness and the persistence of "ghetto" housing clusters.

Poverty is usually measured as either absolute or relative (the latter being actually an index of income inequality). Absolute poverty refers to set standard which is consistent over time and between countries (Gans, 1971). An example of an absolute measurement would be the percentage of the population eating less food than is required to sustain the human body (approximately 2000-2500 calories per day for an adult male).

The World Bank (2009), defines extreme poverty as living on less than US \$1.25 per day and moderate poverty as less than \$2 a day. It estimated that in 2001, 1.1 billion people had consumption levels below \$1 a day and 2.7 billion lived on less than \$2 a day. The proportion of the developing world's population living in extreme economic poverty fell from 28% in 1990 to 21% in 2001. Available records show that the period 1981-2001, the percentage of

the world's population living on less than \$1 per day has doubled (World Bank, 2007).

Most of the improvement has occurred in East Asia and South Asia. In East Asia the World Bank reported that the poverty head -count rate at the \$2-a-day level is estimated to have fallen to about 27% in 2007, down from 29.5% in 2006 and 69% in 1990. In sub-Saharan Africa extreme poverty went up from 41% in 1981 to 46% in 2001, which combined with the growing population increased the number of people living in poverty from 231 to 318 million. World data shows that the percentage of the population living in households with consumption or income per person below the poverty line has decreased in each region of the world since 1990 (Microsoft Encarta Encyclopaedia, World Bank, 2007).

The World Bank (2007) "Global Economic Prospectus" predicts that in 2030 the number of people living on less than the equivalent \$1 per day will fall by half, to about 550 million. An average resident of what we used to call the Third World will live about as well as of resident of the Czech or Slovak republics today. Much of African will have difficulty keeping pace with the rest of the world and even if conditions there improve in absolute terms, the report warns, Africa in 2030 will be home to a larger proportion of the world's poorest people than it is today. This gives enough reason for Ghana to reconsider its poverty reduction strategies by incorporating education into its short term and long term poverty reduction strategies. More attention should be to given women, the rural poor, the disable and the girl child.

Critique of the human capital theory

Several criticisms have been levelled against the human capital theory by various authorities (Dilorenzo, 1995; Haq, 1996; Sheffrin, 2003; Block, 1990). The theory emphasizes mass education at the basic level and the production of competent skilful individuals and knowledge-based economy. This according to the human capital theory has a direct impact on economic growth and development. This means the greater the investment in education the greater the growth of the gross national product measured in real terms – economic development. The relationship between investment in education and economic development is positively correlated. The following must be noted:

- Many countries suffer from mismatches between the economy and the education system. If the education system expands ahead of the economy the phenomenon of unemployed or underemployed university graduates can arise reflecting a huge cost to society from inefficient investment in education.
- If the education system fails to keep pace with the economy, acute skill shortages can develop in key sectors. If the alignment between what is taught in schools and the skill demanded by the economy is poor, students may drop out of school rather than waste time in a low-return pursuit.
- The creation of a framework for lifelong learning through an accreditation system for a wide range of formal education and non-formal training modalities. This should include enterprise-based training programmes, distance learning programmes and free standing institutes. The goals should be flexible education system that permits

individuals to move between formal and non-formal training institutions over the course of a career.

- The creation of a wide variety of communication channels and collaborative arrangements between education systems and the private industry. This will permit a continuous realignment of education to serve the evolving demand for skills and knowledge.
- The protagonists of the theory argue that factors such as working conditions, job satisfaction and motivation contribute greatly to enhanced productivity. They still hold to the fact that education is the key to productivity gains and development.
- The theory asserts that individual characteristics determine economic growth without considering economic exploitation, international relations, social structure and culture, and attitudes of the people among other things are critical for the economic growth and development of a country.

Concept of poverty

Poverty does not lend itself to easy definition as a concept. Notwithstanding this, in order to seek a solution to the problem of poverty, we need to identify who is poor and a definition becomes necessary. There are various authorities who have defined poverty which would be examined and an operational definition of poverty would be given to suit the study.

Poverty is the shortage of common things such as food, clothing, shelter and safe drinking water, all of which determine the quality of life. It may include the lack of access to opportunities such as education and

employment which aid the escape from poverty and/or allow one to enjoy the respect of fellow citizens (World Bank, 2009).

According to Orshansky (1981), who developed poverty measurement used by the U.S. government, *“to be poor is to be deprived of those goods and services and pleasures which others around us take for granted”*.

From economic point of view poverty is thought of primarily in terms of a person’s financial or economic status. Such definitions involve establishing an income level below which poverty is said to exist. For instance the World Bank (2007) defined extreme poverty as living on less than \$1.25 per day and moderate poverty as less than \$2.00 a day estimating that “in 2001, 1.1 billion people had consumption levels below \$1.00 a day and 2.7 billion lived on less than \$2.00 a day”.

From cultural view point, they advocate that poverty should be defined in terms of culture rather than economic. Hayes (1998) argues that cultural definitions help to explain why people are at a particular economic level which might have been more informative. In this context, poverty may be consequent upon one’s inability to budget one’s income efficiently as a result of underemployment or inefficient use of resources. The use of cultural definitions means that those who are classified as poor are likely to be those who will remain in poverty for several generations.

Relative and absolute poverty

Relative poverty, views poverty as socially defined and dependent on social context, hence relative poverty is a measure of income inequality. Usually, relative poverty is measured as the percentage of population with

income less than some fixed proportion of median income. There are several other different income inequality metrics for example the Gini coefficient or the Theil Index, (Microsoft Encarta Encyclopaedia retrieved 6th August, 2009).

Relative poverty measures are used as official poverty rates in several developed countries. As such these poverty statistics measure inequality rather than material deprivation or hardship. The measurements are usually based on a person's yearly income and frequently take no account of total wealth. The main poverty line used in the Organisation for Economic Co-operation and Development (OECD) and the European Union is based on "economic distance", a level of income set at 50% of the median household income.

Absolute poverty on the other hand is incapacity of an individual or household to achieve the satisfaction of certain clearly defined minimum needs. In its extreme form is the failure to meet the minimum food needs of the household in terms of the ability to acquire a basket of basic needs (World Bank, 2009).

Economic aspects of poverty focus on material needs, typically including the necessities of daily living such as food, clothing, shelter, or safe drinking water. Poverty in this sense may be understood as a condition in which a person or community is lacking the basic needs for a minimum standard of well-being and life, particularly as a result of a persistent lack of income.

Analysis of social aspect of poverty links condition of scarcity to aspect of the distribution of resources and power in a society and recognizes

that poverty may be a function of the diminished “capability” of people to live the kinds of lives they value. The social aspects of poverty may include lack of access to information, education, health care, or political power. Poverty may also be understood as an aspect of unequal social status and inequitable social relationships experienced as social exclusion, dependency, and diminished capacity to participate, or to develop meaningful connections with other people in society.

The World Bank (2007) “Voices of the Poor”, based on research with over 20,000 poor people in 28 countries identifies a range of factors which poor people identify as part of poverty. These include: Precarious livelihood; Excluded locations; Physical limitations; Gender relationships; Problems of social relationships; Lack of security; Abuse by those in power; Disempowering institutions; Limited capabilities and Weak community organisations.

Moore (2007), argues that some analysis of poverty reflect pejorative, sometimes racial, stereotypes of impoverished people as powerless victims and passive recipients of aid programmes.

Ultra- poverty, a term apparently coined by Lipton (1986), connotes being amongst poorest of the poor in low income countries. Lipton defined ultra- poverty as receiving less than 80 per cent of minimum calorie intake while spending more than 80% income on food. Alternatively, a 2007 report issued by International Food Policy Research Institute defined ultra-poverty as living on less than 54 cents per day (World Bank, 2007).

According Prewitt (2000) in the Critical Path: Linking Knowledge to Advanced Environmentally and Socially Sustainable Development “*education*

was not absent, but it was assigned a supportive, even a peripheral role. Not so today". In the course of forty years, education has moved from the periphery to the centre of thinking about development. Education themes made under various terms including especially human capital and more recently the metaphor of capacity building.

It is now commonplace to assert that development flows from a growth in the competence of a society to apply modern science and technology. This growth in competency must be lodged both in individuals and institutions. This linked competencies–individual and institutions are nurtured first and foremost in a nation's educational practices".

Historical findings revealed that the great push by western explorations into the Americas and Africa when it was primarily motivated by wealth-seeking actually generated less wealth than when it was motivated by knowledge-seeking. The fur traders explored the upper Missouri River in American West, but real development followed the meticulous scientific expedition of Clark and Lewis (1970). A similar pattern unfolded in West Africa when the earlier wealth-seeking entrepreneurs trading in gold and slaves left much destruction but little development, not until the Niger exploration concentrated on natural, navigational and geographic sciences was there development in the sense that we talk about it today (World Bank, 2002).

By investing in human capital, research showed that economic development could be achieved at a faster rate. It stressed on the centrality of professional competencies, human performance and an educated labour force

for economic growth as is argued from the experience of Japan and the East Asian tigers (Prewitt, 2000).

According to World Bank (2001), macroeconomic and sector approaches, *“Investing in education has a catalytic effect on economic development on the following counts as evidenced by various countries’ reports. It noted that failure to provide basic education seriously compromises a country’s effort to reduce poverty”*. A large body of research points to the catalytic role of basic education for those individuals in the society who are most likely to be poor—girls, ethnic minorities, orphans, people with disabilities and people living in rural areas. Basic education or literacy training of adequate quality is crucial to equipping disadvantaged individuals with means to contribute to and benefit from economic growth.

Education is one of the most powerful instruments societies have for reducing deprivation and vulnerability; it helps lift earning potential, expand labour mobility, promotes the health of parents and children, reduces fertility and child mortality, and affords the disadvantaged a voice in society and the political system. This strongly agrees with studies by Psacharopoulos (1988) on the benefits that are inherent in mass education.

Taiwan and Korea placed strong emphasis on primary education in the 1950’s and 1960’s. These countries entered the 1970’s with a better educated work force. This resulted in the achievement of improved income distribution, low fertility and higher economic growth (Hanushek & Kimko, 2000).

Also education investment is crucial for the sustained economic growth that low income countries are seeking to stimulate, and without which long term poverty reduction is impossible. Education directly contributes to

worker productivity and can promote better natural resource management and rapid technological adaptation and innovation. It is fundamental to the creation of a competitive, knowledge-based economy, not only for the direct production of the critical mass of scientists and skilled workers that every country requires, no matter how small or poor but also because broad based education is associated with faster diffusion of information within the economy, which is crucial for enabling workers and citizens in both the traditional and modern sectors to increase productivity (Porter, 1998; Hanushek & Kimko, 2000).

This agreed with Schultz (1963) on the analysis of input-output of investment in education in the United States of America. The study found out that total investment in human Capital formation in the USA from 1900 to 1956 rose from 9% to 34% of the total investment. The rate of return of this investment expressed as a stock of capital or total accumulation of wealth in 1956 United States dollars amounted to \$180 billion for 1930 and \$535 billion for 1957. Thus the increase in the stock of capital between 1929 and 1957 was \$362 billion.

These impacts were strongest where education was integrated into a broader competitiveness strategy that included macroeconomic stability, trade openness, and incentives for foreign investment, competitive telecommunication pricing and adequate infrastructural investment. No twenty first century economy can expect to develop a productive work force that is able to take advantage of globalisation without a well functioning educational system.

A growing body of research also documents the connection between education, the quality of institutions and social cohesion. The nation in which most of the population is literate and in which all children complete a basic education have higher quality institutions, stronger democratic processes, as a consequence more equitable development policies (Ritzen, Khoddi & John, 2000).

Education externalities take several forms. Researchers have found microeconomic evidence of spill-over effects on productivity from education investments. For example a study in Sub-Saharan Africa found an additional year of schooling for some farmers to be associated with higher crop yield, not only for them but also for their educated neighbours (Appleton, 2000).

Similarly, findings from the Green Revolution in India suggest that the demonstration effect of farmers with more education, adapting new high yielding seeds led less educated farmers to switch as well, resulting in a faster reduction in poverty for educated and uneducated farmers alike (Foster & Rosenzweig, 2000).

Long term growth is a product of both the rate of capital accumulation (physical and human), and returns to investment (O' Connell and Ndulu, 2007). The traditional approach has been to break down technical change into three branches:-

- Invention
- Innovation
- Diffusion

Invention is the creation of new products and services. Innovation is the transfer of invention to commercial applications. Diffusion is the spread of

innovation into economic environment (Freeman, 1991). Notwithstanding the interdependence and feedback among these branches, the first two branches typically entail the production of new knowledge which is costly and risky to produce but cheap to imitate at the diffusion state. The public good nature of knowledge and the difficulties of establishing and protecting property rights are partly behind these features. The study noted that most African countries (except South Africa) are technological followers and are more likely to engage in the third branch of technical change.

Singapore's case presents an interesting contrast to show technological progress in Africa and an example of a successful technological follower whose major source of long term growth was technical change, initially via diffusion and some innovation. Ho and Hoon (2006) developed an approach to accounting for the sources of Singapore's economic growth by explicitly identifying channels through which Singapore as a technological follower benefited from international research and development spill-over. They show that 57.5 % of Singapore's real GDP per worker growth rate from 1970 to 2002 is due to multifactor productivity and more specifically 52% of the growth is explained by an increase in capacity to absorb new technology through improving educational quality and effective links to the world's technological leaders through trade (particularly machinery imports).

They concluded that, these two factors were most influential factors behind Singapore's fast pace of multi factor productivity to catch up with the technological leaders. These findings are consistent with those from other empirical research. For example Coe, Helpman and Hoffmaister (1997) and Hejazi and Safarian (1999) show empirically that "how much any single

follower economy benefits from international research and development spill-over depends on its distance from the frontier and its stock of human capital as well as its integration with technology leaders through trade and foreign direct investment (FDI)” (World Bank, 2007).

Recent studies using cross-country regressions typically found that female education had large impact on growth than male education (Abu-Ghaida & Klosen, 2004). For example, it was revealed that direct and indirect effects of gender inequality in educational attainment accounted for 38 percent for the 2.5 percentage point gap in growth rates between South Asia and East Asia, 17 percent of the 3.3 percentage point gap between Sub-Saharan Africa and East Asia, and 45 percent of the 1.9 percentage gap between the Middle East and North Africa and East Asia. Even though growth may not necessarily lead to poverty reduction but when this growth is directed into pro-poor programmes poverty reduction could be achieved.

It has been observed that the correlation between education and income at both individual and the societal level is a strong one. People all the over world intuitively recognise this correlation, and base their desire to obtain the largest possible amount of schooling for their children on it. Similarly, there is a strong correlation between national income levels and educational attainment.

There existed inequalities in income distribution and educational opportunities against women. To a considerable extent education led to better jobs and higher income, this pattern of educational provision worsens the distribution of opportunity and income. Some economists believed that an

improve distribution of schooling could be a major force for achieving a more even distribution of income and poverty reduction.

According to Amoako (1997) in Nairobi, Kenya, President of the Economic Commission for Africa (ECA), investing in women and expanding their role in decision-making are not merely moral imperatives for African governments; they are also prerequisites for effective poverty reduction, sustainable economic growth, and peace.

Foremost, data shows that returns on investment in women's education and health are significantly greater than those for similar investment in these services for men. This is largely because of the strong interaction among factors such as women's schooling, health, nutritional status and fertility, on the one hand and the synergistic effects of this combination of factors on Africa's future education, health and productivity, on the other.

There is a Chinese saying that '*women hold up half the sky*'. Yet women are most disadvantaged in most sphere of life. Thus:

- One in twenty African women runs the risk of dying from pregnancy related-causes during her lifetime.
- On the continent more girls than boys die before they reach age five. In Togo, it was 20% more, in Cameroon 17%, and in Burundi 13%.
- More than half the women in sub-Saharan Africa over 25 years of age were illiterates.
- Consistently, across the continent fewer women than men can read or write. In Sudan, the ratio of female to male adult literacy was as low as 28%. The comparable ratios were 32% in Burkina Faso and 35% in Sierra Leone.

- In Africa, women worked much longer hours than men did and in general, girls spent more time on household chores than boys did.

Data collected from a group of African countries showed that fertility rates and child mortality rates fell as women's education level rose. For example, recent research findings showed that giving African women four to six years of education could lower the mortality rate of African children under five by nearly 40%. The reason was that women who knew how to read and write were better able to understand how to space the births of their children and nurture their families (Amoako, 1996).

A similar situation existed in the work arena for example; data collected in Kenya indicated that if all women received just one year of primary education/schooling, women's agricultural yield increased by 24%. Taking into account that African women produced approximately 75% of the continent's food one could see how such increased in the productivity of Africa's women's farmers could significantly raise performance of the continent's agricultural sector. The associated improvements in household food security and poverty reduction would also be dramatic. Research has shown that women contribute as much as 40% – 60% of household income, (Amoako, 1996).

The concept of education

Labour quality may be enhanced by educating either children or adults; by improved health and nutrition for children and working adults; by migration of workers to places with better job opportunities; and by fertility reduction. Education is an aspect of human resource development which could

strongly lead to poverty reduction in any country. Human resource development can be defined as a set of systematic and planned activities designed by an organisation to provide its members with the opportunities to learn necessary skills to meet current and future job demands (Todaro, 2000).

Education can be defined broadly as all forms of human learning, or more narrowly as the process that occurs in specialized institutions called schools. It is unquestionably the most important form of human resource development (Todaro, 2000).

Types of learning

Learning is the process by which we acquire and retain attitudes, knowledge, understanding, skills and capabilities that cannot be attributed to inherited behaviour patterns or physical growth. Capacity for learning is related to innate psychological factors. The rate of learning depends on both inherited and environmental factors. The classification of each type is as follows:

- Affective learning; which has to do with feelings and values, and therefore influences our attitudes and personalities.
- Cognitive learning; which is achieved by mental processes such as reasoning, remembering and recall. It helps in problem solving, developing new ideas and evaluation.
- Psychomotor learning; which has to do with the development of skills which requires efficient co-ordination between our brains and muscles, as when we read or write or carry out physical skills such as balancing, skipping or jogging (Tamakloe, Amedehe and Atta, 2006).

This work considered the three main valves through which education can be transmitted. These are formal, informal and non-formal education.

- Formal education: This takes place in institutions called schools. Its participants are usually young people who have not yet began their working lives.
- Non-formal education: This can be thought of as organised programmes of learning that take place outside the schools. Often participants are adults. The programmes are usually shorter and narrowly focused than programmes in formal education. Non-formal education may be concern with occupational skills or with other subjects such as literacy, family life, or citizenship.
- Informal education: It refers to learning that takes place outside any institutional framework or organised programme. People learn many important things in the home, on the job and the general community, (Wermer & DeSimone, 2006).

Although other definitions of the three terms can easily be found, these convey a reasonable idea of what is meant. This dissertation will limit itself to this definition.

Employment

Whether engaged in self-employment or wage employment, working women contribute to household income and expenditure. In poor households, such contributions can be crucial for keeping the household out of poverty; this is a reason to increase women access to education. This increased access

can contribute to current poverty reduction and growth through higher consumption and future poverty reduction through the impact on children's accumulation of human capital and the potential impact on aggregate savings.

Women face many constraints at home and in the market place when they decide to seek paid employment. Numerous studies point to women's reproductive role as female labour force participation in general, and work for pay in particular. In the Kyrgyz Republic, for example but not typically, 24.8% of women reported that "housekeeping, taking care of children, sick persons or the elderly" kept them from working outside the home, but only 1.5% of men reported these reasons (Morrison & Lamana, 2006). This has the tendency of perpetuating generational poverty among women.

Healthcare

Poor access to affordable health care makes individuals less resilient to opportunities and more vulnerable to poverty. This makes individual malnourished which affects their ability to contribute positively to their economic and social wellbeing. Inadequate nutrition in childhood, itself an effect of poverty, undermines the ability of individuals to develop their full human capabilities and thus makes them more vulnerable to poverty. The development of these human capabilities will only be realised through education.

Thus, when women are given the necessary education their potentials could be developed which will enable them to have access to health care. Research has shown that lack of essential minerals such as iodine and iron can impair brain development. It is estimated that two billion people are affected

by iodine deficiency, including 285 million 6 to 12- year old children. In developing countries, it is estimated that 40% of children aged four and younger suffer from anaemia because of insufficient iron in their diets. Disease designated as disease of poverty: AIDS/HIV, malaria, tuberculosis and others overwhelmingly afflict majority of women in developing countries. This perpetuates poverty by diverting individual, community, and national health and economic resources from investment and productivity.

Clinical depression undermines the resilience of individuals and when not properly treated makes them vulnerable to poverty. Similarly, substance abuse including for example alcoholism and drug abuse when not properly treated undermines resilience and can consign people to vicious poverty cycles. Those living in poverty, and lacking access to essential health services, suffering hunger or even starvation, experience mental and physical health problems. Consequently it would be hard for those people to improve their situation and come out of poverty.

Without appropriate education given to women, this could be the situation of women in Africa. Studies have shown that one-third of deaths- some 18 million people a year or 50,000 people per day- were due to poverty related causes. In total 270 million people, most of them women and children have died as a result of poverty since 1990. Those living in poverty suffer lower life expectancy. Every year nearly 11 million children living in poverty die before their fifth birthday. Those living in poverty often suffer from hunger. It is estimated that 1.02 billion people go to bed hungry every night.

Diseases of poverty reflects the dynamic relationship between poverty and poor health; while such infectious diseases result directly from poverty,

they also perpetuate and deepen the impoverishment by sapping personal, financial and national resources. Research for example established that malaria decreases GDP by up to 1.3% in some developing countries, and by killing tens of millions in sub-Saharan Africa. Without the human resource base being developed in general, and particularly that of women, the sting of poverty will be difficult to be broken in any given society (World Bank, 2008) “Poverty in Focus”.

Microcredit

One of the popular new technical tools for economic development and poverty reduction are micro loans made famous in 1976 by the Grameen Bank in Bangladesh. The idea was to loan small amount of money to farmers or villagers, so these people can obtain the things they need to increase their economic rewards. Financial resources were very critical for improving women’s socio-economic status. Yet studies showed that women have difficulties in accessing such resources because traditionally women did not own property. Generally, access to credit in Ghana is not easy. Access for women, however, was even more difficult compared to men.

For the majority of women financing of their small scale business was mainly through personal or family saving, which was often inadequate. Women also often had to depend on loans and credit from money lenders, traders or kin. Women’s low level of education, lack of property to use as collateral, and the small nature of their business ventures and proper book-keeping methods all affect their ability to convince Banks about the viability of their business and to obtain loans from formal banking sources. Education

of women enabled them to overcome these barriers to accessing financial resources (Economic Commission for Africa, 1990).

Land

According to International Fund for Agricultural Development (IFAD, 1991) land reforms policies that reduce inequality in land ownership and create small farms, can be a cost effective way of reducing rural poverty. When peasants and farmers own their own land, farming is often more productive.

Agriculture is more labour intensive (which creates more farm jobs) and farmers and peasants are able to keep more of the profits themselves. Studies have shown that over 60% of Ghanaian women are engaged in food crop farming as an occupation. The same situation can be said to be occurring in Navrongo where majority of the women are farmers but lacks access to land since all lands in the various communities are vested in male adults. During the colonial period, there was increasing commercialisation of land, especially agricultural land, which was subject to various tenancy arrangements. In cocoa growing areas as cocoa became a new source of income, it also became a source of growing stratification based on creditor/debtor relations and new labour arrangements (Vellenga, 1986).

Kotey and Tsikata, (1998), also found that land relations are critical to women's right in Ghana, not only for economic reasons, but due to the central role of agriculture in meeting livelihood needs of a majority of the population and also for special and political status. Land relations often reflect gender, class and kinship relations and are implicated in their reproduction

Ghana maintains a plural system of land tenure. Access to land may be through inheritance, marriage, share-cropping, renting, outright purchase or as gift. The major ways by which women acquire rights in land are through the lineage, through marriage and through contractual arrangements. Women access to land is affected by tenure arrangements and inheritance systems as well as land use patterns.

To obtain land for agricultural purposes, women like men, have traditionally depended on their families to allocate them plots. The terms of tenure, however differ for men as against women in many parts of Ghana. Traditionally both men and women have rights in lineage land, but what this implies in practice is different. Among Southern patrilineal groups, such as the Ga, Ewe and Dangbe, land holding groups are the clans and lineages who enjoy usufruct rights. Ownership of usufruct is mostly partly due to discriminatory inheritance practices (Nukunya, 1972).

In Northern Ghana, land holdings were vested in “Tendana” or the Earth Priest who gave them out to groups and the group leader then came to control access to the land. The land system in Northern Ghana is characterised by communal ownership, with individual lineages headed by men owning portions. Thus theoretically, each member of a kinship group, male or female, has right to land by virtue of membership of the group. However in practice, the situation is different. The authority to decide on land allocation to individuals is delegated to male lineage heads or household heads, with women access depending on the goodwill of male members of the lineage. A woman’s rights to land are therefore through men, husband, brothers,

fathers or sons. Traditional norms reinforced the ideology of male superiority in farm task (Mensah-Kutin, 2009).

Thus it was important to note that education built the capacity of women which enabled them to break out of these obnoxious practices in any society. Accessibility to land, regionally of the inheritance system, showed regional variation. Women access to agricultural land seemed better in Southern than in Northern Ghana. Over 50% of land owners were women in Ashanti, whereas only 2% and 4% of farms were owned by women in the Northern and Upper West Regions respectively (MOFA, 1991). In the Upper Region, it was 29.31% due to out-migration of males.

It was estimated that women cultivated almost 40% of all land holdings under production in Ghana (Tsikata, 2001). Women lack of access to farmlands greatly affected agricultural productivity in the country and Navrongo in particular.

CHAPTER THREE

METHODOLOGY

Introduction

This covered the research design, the sample size, the study population, sampling and sampling procedure, data collection method and data analysis procedure.

Research design

The study was predictive, explanatory and descriptive and had the purpose of assessing the relationship between the level women education and poverty reduction in Navrongo. The data was collected based on précised measurement using structured and validated data collection instruments. These included for instance closed-ended items, rating scale, and check list. The predictive and the explanatory aspect of the work were demonstrated in the regression and the correlation analysis. Relationships were established which easily indicated the direction and the extent to which education influenced the variables to bring about poverty reduction.

The design chosen was thus a descriptive study. This was because; it was a systematic way of presenting data that gave a clear picture of the problem. There were other variants of descriptive studies such as case-study and cross-sectional study. For the purpose of this research, I employed the cross-sectional approach.

This approach was chosen because it gave a vivid account of the phenomenon as it was to be time-bound (Sarantakos, 1986). Due to the large number of the respondents in the study area, the entire population was not dealt with. A simple random sampling using the lottery method was employed to select between 18 and 20 women from each community in the study area.

Study population

Population, according to Babbie (2007 p. 190), is the “*theoretically specified aggregation of the elements in the study*”. For the purpose of this study, the target population were all women in Navrongo. This included women from the ten communities that constituted Navrongo area. The lists of communities were, Balobia, Namolo, Nogsenia, Nawognia, Nangalikenea, Wuru, Korania, Nayagnia, Saboro and Basina

The population of Navrongo is sparsely distributed in the rural areas and densely distributed in the urban centre. From the Ghana Statistical Service (GSS, 2005) population and housing census figures, Navrongo had a population of 15,983 which was disaggregated into 7,615 males and 8,368 females. It published female literate population to be 11.3% representing a literate female population of 946 and the non-literate population of 7422. The participants were located within the Navrongo Township and the communities that constituted the Navrongo area.

Sampling and sampling procedure

Out of the total number of 946 women in Navrongo, a representative sample was drawn for the study. It was important to sample from the target

population because the population size was large and it may therefore be impracticable to obtain measures from the entire population. For the purpose of the study, stratified sampling procedure was employed. Stratified sampling, according to Sarantakos (1998), “*is a special form of simple or systematic random sampling which the population is divided into a number of strata and sample is drawn from each stratum*”. Since the target population is stratified (i.e. made up of ten communities), the stratified sampling procedure was used to ensure representative sample of all the women in the ten communities selected for the study.

Social Scientists have established acceptable class size and response rates that would validate any research and make it reliable. This is illustrated in Table 1.

Table 1: Sample size reliability and validity

Class size	Recommended response rate (%)
5 – 20	80
20 -30	75
30 -50	66 - 75
50 or more	60 - 75
100 or more	50 - 75

Source: Franklin and Theal (1991)

According to Franklin and Theall (1991), a minimum percentage of study elements depending upon the size of the population must be present for the information to be considered representative and reliable. This criterion was employed to ensure that the number of women selected was

representative of the total population so as to increase the reliability and validity of the information. The number of respondents sampled is in table two below. The selection of respondents was done in an unbiased manner to allow each respondent an equal chance of selected using the lottery method. In all, 190 respondents were selected for the study. The breakdown is shown in Table 2.

Table 2: Breakdown of respondents in the communities interviewed

SN	Name of community	Number of women
1	Nogsenia	20
2	Namolo	18
3	Balobia	19
4	Saboro	20
5	Basina	20
6	Nagalikenia	18
7	Nayagnia	18
8	Nawognia	19
9	Wuru	20
10	Korania	18
Total		190

Source: Fieldwork, 2010

The stratified sampling was used in order to ensure that the selection of the element (women) was unbiased and to also obtain a representative sample. That is, a sample that has the important characteristics of the population from which it was drawn. In each of the ten communities 20

women were interviewed as the researcher tried to prevent so much variation within a particular community. However, due to non response from some of the communities 18 and 19 women were interviewed in some communities as shown in Table 2.

The justification for choosing this research design was that the data to be gathered for the study was quantitative and would produce descriptions of the research topic - for that matter, in the study, both qualitative and quantitative study design were used.

Data collection method

To ensure reliability and accuracy of information gathered for the study, the researcher employed both primary and secondary data. The major instrument used for the collection of the primary data was a set of interview schedule designed by the researcher. In addition, observation was used to collect data. This was based on the field work undertaken by the researcher. The interview schedule was divided into three parts; this was made up of closed ended, open-ended items and checklist. This was administered personally by the researcher with assistance from four trained research assistants to the respondents. This prevented and minimize the lost of interview schedules and retrieval of information in time.

The data was collected based on simple random sampling in all the communities under the study area. Due to the dispersed settlement of the people involved, the researcher also used women leaders in the various communities as Enumerators who helped to identify the various women by their compounds or households. Using the lottery method, pieces of papers

were written as yes and no, those who picked the yes were interviewed. This was intended to reduce falsification of information by participants since the enumerators lived among the people, and to ensure accuracy and reliability of the results.

In all, 200 women were targeted but the researcher interviewed 190 respondents which constituted the actual sampled population for the study. Information was collected on items like: Age; Level of education; Marital status; Employment status; Income level; Number of dependants; The overall perception about women education and poverty reduction: Women access to healthcare, micro credit, land, employment, and income level.

Based on the category of respondents the study dealt with, the structured, standardized and individual interview schedule. The structured interviews were based on a strict procedure and structured interview guide, which was not different from a questionnaire. However, the interview schedule was read out to the respondents by the interviewer for responses as prescribed by the researcher.

In standardised interviews the answers were determined by a set of response categories given for a purpose. For the purpose of this study the responses were based on the role of education and poverty reduction among women in Navrongo.

The interview was based on the individual interview schedule due to the nature of the study. In this case every individual woman was interviewed at a time. Interview schedules were both open and close ended in nature. There was also flexibility in the structure of the questions to allow for additions or subtractions of questions during the interview.

In justifying the use of interviewing, just like surveys in general, it was practical and effective method of data collection and one that could be adjusted to serve the needs of both the quantitative and the qualitative researcher as well as critical researchers and feminist.

Data analysis procedure

The data collected was analysed using statistical tools such as the SPSS (version 17.0) and MS excel to run the tables, charts, regression and correlation for the analysis. A correlation was run to establish the relationship between education and poverty reduction among women in Navrongo. This was done by generating the values using the SPSS. Data collected was edited for consistency and validation of the information inputted. A coding manual was prepared upon which the data was entered.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

In this chapter, the results obtained are presented and discussed. The process involved two steps based on the background characteristics and objectives of the study. In the first place, the background characteristics of the respondents were discussed. This was followed by analyses of each variable on the likert scale which was on the indicators of poverty reduction. An overall assessment of education and poverty reduction was discussed.

Background of respondents

The study was a homogenous research based on women only and therefore sex was not captured. In all, 190 respondents were interviewed from the 10 communities. With regard to age, Table 3 shows the age distribution of respondents interviewed in Navrongo.

The variable, level of education of respondents was relevant, since it revealed the educational attainment of women in the study area. This variable was key to the study because it helped established relationships between education and income level, number of dependants, employment status and poverty reduction.

Table 3: Age distribution of women

Age (years)				
Lower		Upper	Frequency	Percent
20	<	30	16	8.4
30	<	40	57	30.0
40	<	50	67	35.3
50	<	60	46	24.2
60	<	70	4	2.1
Total			190	100.0

Source: Fieldwork (2010)

From Table 3, the results revealed that the majority (97.9 percent) of the women were between the ages 30 and 59 years. This was within the active and industrious working age group. The high proportion of women in this age range implied that they could contribute positively towards developing their communities. Given these ages, many women in the study area representing 89.5% could be engaged in economic and social activities for up to 30 years. This could have the potential of changing the condition of women if education and other resources are made available to them. Those who were in their very early and later years of working life were represented by 10.5%.

Level of education of respondents

Table 4 shows the level of education of women interviewed. The range of education was from Non-formal, Primary, JSS/Middle, Secondary, Training Colleges (Post Secondary) to Tertiary which is illustrated below.

Out of 190 women interviewed, 23 women had Non- formal education representing 12.1%, 46 women had Primary education representing 24.2%, 25 women had Middle /JSS education representing 13.2%, 19 women had Secondary education representing 10.0%, 40 women had Post-secondary education representing 21.1% and 37 had Tertiary education representing 19.5%.

Table 4: Level of education of respondents

Level of education	Frequency	Percent
Non-formal	23	12.1
Primary	46	24.2
Middle/JSS	25	13.2
Secondary	19	10.0
Post-Secondary	40	21.1
Tertiary	37	19.4
Total	190	100.0

Source: Fieldwork (2010)

The range from Non-formal to Secondary education constituted the majority of respondents in this category which represented 59.5%. Those within the Post-secondary and Tertiary levels of education were 40.5%. The women within the non-formal to the middle/JSS said at a point in time their parents could not afford to keep them in school. The only option that was left for them was to get married. They admitted that it was practically impossible to be married and your husband allowing you to continue schooling. One woman said, “How can we go to school when our dowry was used to take care

of our brothers in school?” What this meant was that in the Kassena/Nankana custom the girl-child was oriented to become a house wife one day.

These analyses were relevant because of the contributions women make in the domestic, community and national economic life when given education. Abu-Ghaida and Klosen (2004), found that female education had large impact on growth than male education. He found direct and indirect benefits of female education. Also Amoako (1997), indicated that research had established that in Kenya one year of primary education, women agriculture increased by 24%. Since Navrongo has vast lands and many are engaged in food crops and vegetables farming, education would equally improve their productivity. The trickling down effect would be improvement in the living conditions and their dependents leading to poverty reduction among women.

Marital status of respondents

Table 5 shows the marital status of respondents in the study area. The marital status of respondents was categorised into single, separated, divorced, widowed and married. The frequencies and percentages are presented and discussed.

Respondents who lived as single, separated, divorced and widowed were 71 representing 37.4%. The majority of the respondents (62.6%) were married. This variable was relevant because it enabled the researcher established relationship between marriageable age and educational attainment and how these impacted on poverty reduction. The marital status of women

may directly or indirectly influence their education, employment and dependency among women.

Table 5: Marital status of respondents

Marital status	Frequency	Percent
Single	15	7.9
Separated	15	7.9
Divorced	8	4.2
Widowed	33	17.4
Married	119	62.6
Total	190	100.0

Source: Fieldwork (2010)

Employment status of respondents

Table 6 shows the employment status of respondents in the study area. This has been categorised into employee, self-employed and other (food crop). Ninety (96) were employees which represented 50.5%, 74 self-employed representing 38.9% and 20 were producers of food crops and vegetable on subsistence basis in the (other) category representing 10.6%.

This variable enabled the researcher to establish relationships between employment status and income levels, level of education and employment status. This was significant because poverty as measured in relative terms used income as the benchmark for wellbeing.

Table 6: Employment status of respondents

Employment Status	Frequency	Percent
Employee	96	50.5
Self- employed	74	38.9
Other (Food crop)	20	10.6
Total	190	100.0

Source: Fieldwork (2010)

Schultz (1963), established that education leads to better jobs and higher incomes and that existence of inequalities in income and educational opportunity against women keeps them poor. In the same way some economists established that, an improved distribution of schooling could be a major force for achieving a more even distribution of income and poverty reduction (Harbison, 1973).

Number of dependents of the respondents

Table 7 shows the number of dependents of respondents in the study area. The dependency rate have been categorised using the class intervals. Frequencies and percentages were generated to enable the researcher to establish relationships between education and dependency ratio and the impact on their education. The variable on dependency rate revealed that mostly children, spouse and external relations depended on women in Navrongo. The practice of the extended family system was very strong among women in the study area. This could affect women positively or negatively in the pursuit of education to higher levels.

On the positive side women who were economically sound supported relations to further their education. On the negative side high dependency ratio eroded business capital and other resources, thus prevented many women from furthering their education and also offering themselves for further training.

Table 7: Number of dependents of the respondents

No. of dependents			Frequency	Percent	Dependency rate
Lower		Upper			(%)
1	<	4	14	7.4	30.0
4	<	7	92	48.4	60.0
7	<	10	62	32.6	133.5
10	<	13	19	10.0	120.0
13	<	16	3	1.6	150.0
Total			190	100.0	

Source: Fieldwork (2010)

In Table 7, it could be observed that 92.6% representing 176 out of 190 women had had high dependency ratio. The dependency ranged from 4 to 15 members per head.

Education and annual income

The measures of central tendency of the income of respondents produced the following results: mean income of GH¢3243.41, median income of 2485.00, and modal income of GH¢520. The extent to which the mode and median income cluster around the mean determine the average income of the

respondents. Since these three measures were wide apart, the median income of the respondents was used as the average income. Thus, the average income of the respondents in the study area was GH¢ 2485.00 per annum. The average income in the study area was far greater than the World Bank's (2007) poverty line of 2.5 dollar a day mark.

Table 8: Level of education and annual income

		Correlations	
		Level of education	Annual income
Level of Education	Pearson Correlation	1	0.858**
	Sig. (2-tailed)		0.000
	N	190	190
Annual Income	Pearson Correlation	0.858**	1
	Sig. (2-tailed)	0.000	
	N	190	190

**Correlation is significant at the 0.01 level (2-tailed).

Source: Fieldwork (2010)

The analysis also produced the minimum and maximum annual income of the study population. The minimum annual income was GH¢340 and the maximum was GH¢10, 224.00. When we juxtapose the modal income with the minimum income, it was evident that majority of the respondents had low incomes. Those who earned GH¢520 and GH¢340 as modal income and minimum income respectively fell below the poverty line of 2.5 dollars a day.

The correlation co-efficient $r = 0.858$

Significance level =0.01

P value calculated = 0.000.

This showed a strong positive association between level of education and annual income. As the level of education increased, annual income also increased. The result is shown in Table 8.

Educational level attained and category of income

The income of the respondents was categorised into quintiles: very low income, low income, moderate income, high income and very high income. The output produced from the Statistical Product and Service Solution (SPSS) version 17.0 as shown in Table 9.

Table 9: Level of education and categories of income

Level of education	Very low	Low	Moderate	High	Very high	Total
Non-formal	16	5	2	0	0	23
Primary	19	18	9	0	0	46
Middle/JSS	4	9	10	1	1	25
Secondary	0	5	11	3	0	19
Post-Secondary	0	0	4	27	9	40
Tertiary	0	0	2	7	28	37
Total	39	37	38	38	38	190

Source: Fieldwork (2010)

Out of the 190 women interviewed, 23 were in the Non-formal category. Of the 23 respondents, 69.6 percent earned very low income, 21.7

percent earned low incomes, 8.7 percent earned moderate and no women either earned high or very high income.

In the Primary category 46 respondents were interviewed. Out of this, 41.3 percent earned very low income, 39.1 percent were low income earners, 19.6 percent were moderate income earners, no woman in this category earned either high or very high income.

In the Middle/J. S. S. Level, 25 respondents were interviewed. From this number, 16 percent were very low income earners, 36 percent earned low income, 40 percent earned moderate income, and 4 percent earned high income and very high income respectively.

In the Secondary level, 19 respondents were interviewed. The earnings in this category ranged from low to high. Out of this number 26 percent earned low income, 58 percent and 16 percent of the respondents earned moderate and high incomes respectively.

In the Post- secondary level, those who were interviewed included teachers, nurses and those in the office with HND or other certificates. In all forty (40) respondents were interviewed. The categories of income earned ranged from moderate to very high. Out of this number 10 percent earned moderate income, 67.5 percent earned high income and 22.5 percent earned very high income.

In the Tertiary level, 37 respondents were interviewed. Out of this number, 5.4 percent earned moderate incomes, 18.9 percent earned high income and 75.7 percent were very high income earners.

In all, 39 respondents earned very low income within the non-formal, primary and middle/JSS levels of education. Thirty-seven also earned low

income that also fell within the non-formal and secondary level of education. Thirty-eight earned moderate income which was distributed across the various level of education. Thirty-eight earned high and very high incomes respectively. Those who earned higher incomes were predominantly in the Post-secondary and Tertiary levels of education.

The correlation co-efficient (Pearson's $R = 0.867$ and P-value (two-tailed) was 0.000. This implied that there was significant association between the level of education and income levels. This meant the income levels of respondents could be explained by 86.7% of their educational level attained. This also meant that there was a strong positive correlation between levels of education and categories of income of women in Navrongo. The positive correlation implied that as educational level of women rose, their income levels also rose. On the other hand, the lower the level of education, the lower the income earned by women.

These findings confirmed Acheampong (2006), education is considered to be desirable for women because it, makes them more competitive in terms of seeking job opportunities, improve their nutrition and health conditions, enhances productivity, income and wealth.

World Bank (2007) defined extreme poverty as living on less than \$1.25 a day and moderate poverty as less than \$2.00 a day. Incomes were therefore significant in determining poverty levels among women. Psacharopoulos (1988), Taiwan and Korea placed strong emphasis on primary education in the 1950s and 1960s. These countries entered the 1970s with a better educated workforce. This resulted in the achievement of improved income distribution, low fertility rate and higher economic growth.

Schultz (1963), reported in the American Economic Association, that the correlation between education and income at both individual and the societal level is a strong one. People all over the world, intuitively recognise this correlation, and base their desire to obtain the largest possible amount of schooling for their children on it.

The result produced from the SPSS equally agreed with the earlier analysis about the relationship between education and income. The chi-square test indicated that the general objective of the study can be concluded. Thus there is a significant relationship between education and training and poverty reduction among women. From the relative poverty definition, poverty was measured in terms of income differential. In absolute terms, poverty was viewed on the basis of material deprivation or “economic distance”. This was still relevant since income was used to obtain the materials needed by women.

Education and Access to Healthcare

Table 10 shows the relationship between education and access to healthcare. The extent to which respondents agreed or disagreed with the statement that education leads to access to healthcare is shown in frequencies and percentages.

The study objective among others was to assess the relationship between the level education attained and access to healthcare. Level of education attained was put on six levels, ranging from non-formal to tertiary. Respondents were to rate their response statements ranging from strongly disagree to strongly agree.

Table 10: Education and healthcare

Statement	Frequency	Percent
Strongly agree	1	0.50
Disagree	3	1.50
Neutral	17	9.00
Agree	93	49.00
Strongly agree	76	40.00
Total	190	100.00

Source: Fieldwork (2010)

From the 190 respondents produced the results shown above. Out of this number, 23 respondents were from Non-formal, 46 Primary, 25 Middle/JSS, 19 Secondary, 40 Post -secondary and 37 were from the tertiary level of education.

On the scale, the scores ranged from 1 to 5. From the analysis above only 1 respondent strongly disagreed which represented 0.5 percent. Three respondents which represented 1.6 percent disagreed that education did influence their access to healthcare. On the scale of neutrality (non-response), 17 respondents from all educational levels representing 8.9 percent were neutral. On the scale of agree and strongly agree, 93 and 76 respondents that represented 48.9 percent and 40.0 percent respectively, were of the opinion that education influenced their access to healthcare.

Indicators of healthcare

The indicators that were used to measure access to healthcare were subscribing to NHIS, attending hospital regularly, attending pre-natal and

post-natal care, not using self-medication and not attending herbalist and spiritual healing centres. Respondents were to choose any number of indicators that applied to them when given education. The number of indicators chosen determined their level of perception on how education influenced their access to healthcare.

From the indicators of access to healthcare, 100 respondents which represented 52.6 percent agreed that educational level attained made them subscribe to NHIS, attended hospital regularly when they fell sick, attended pre and post natal care and did not use self-medication. Eighty-six respondents representing 45.3 percent said educational level attained enabled them to subscribe to NHIS, attended hospital regularly and also attended pre-and post natal care. Four respondents representing 2.1 percent also said the level of education helped them to subscribe to NHIS and attended pre and post natal care. This is illustrated in Table 11.

Table 11: Indicators of healthcare

No. of indicators	Frequency	Percent
Any two indicators	4	2.1
Any three indicators	86	45.3
Any four indicators	100	52.6
Total	190	100.0

Source: Fieldwork (2010)

The symmetric measures produced from the SPSS are shown below and needed the following statistics for analysis.

Phi	0.427
Cramer's v	0.214
Pearson's r	0.091

This shows a positive weak correlation (.091) between education and access to healthcare. This meant that there was a direct relationship between education and training and access to healthcare. Thus as women accessed more education, their access to healthcare increased. Amoako (1996), giving African women four to six years of education could lower the mortality rate of African children under five years, by nearly 40 percent. According to Ghana's HDR by the World Bank (2007), when women are given education, their potentials will be developed which will enable them to have access to healthcare.

Diseases designated as disease of poverty such as AIDS/HIV, malaria, tuberculosis and others, overwhelmingly afflicted majority of women in developing countries (UNDP, 2007). These diseases of poverty reflected the dynamic relationship between poverty and poor health; while many infectious diseases resulted directly from poverty, they also perpetuate and deepen the impoverishment by supping personal, financial and national resources.

Education and access to microcredit

Table 12 shows the various levels of education attained and access to microcredit in the study area. Respondents provided responses to the researcher based on the interview schedule.

The study objective examined the level of education attained and access to microcredit. Only 3 respondents disagreed that the level of education

attained let to access to microcredit, 18 were neutral, 17 agreed go the statement and 19 strongly agreed with the statement.

Table 12: Education and microcredit

Level of education	Access to micro credit			
	Disagree	Non-response	Agree	Strongly agree
Non-formal	0	7	11	5
Primary	1	1	17	27
Middle/JSS	0	3	13	9
Secondary	1	1	8	9
Post-Secondary	1	3	18	18
Tertiary	0	3	12	22
Total	3	18	79	90

Source: Fieldwork (2010)

The Pearson's correlation coefficient of 11.8% showed a weak correlation between educational attainment and access to microcredit. The direction of the coefficient is important for analytical purposes. The positive value showed that as women increased their access to education, the more they were likely to access microcredit with the banks and other financial constitutions.

Number of indicators used to access microcredit

Table 13 shows the number of indicators that influenced respondent's access to microcredit. The number of indicators that were used to access

education and microcredit were: obtaining information on microcredit availability, joining women groups to benefit from microcredit institutions, sharpening their negotiation skills to engage financial NGOs and institutions for microcredit, developing a saving culture and being gainfully employed. Respondents were to select the number of indicators that could influence their access to microcredit when given education. This variable was very necessary because financial resources enabled women to reduce their poverty levels significantly. The results are illustrated in Table 13.

Table 13: Indicators of access to microcredit

No. of indicators	Frequency	Percent
Single indicator	2	1.1
Any two indicators	4	2.1
Any three indicators	86	45.3
Any four indicators	97	51.0
Any five indicators	1	0.5
Total	190	100.0

Source: Fieldwork (2010)

From Table 13, only 2 respondents representing 1.1% said being gainfully employed enabled them access microcredit. Four respondents selected two indicators which represented 2.1%, 86 respondents representing 45.3% choose three indicators that influenced their access to microcredit when given education. As high as 97 respondents representing 51.0% took four indicators that empowered them to access microcredit when given education

and only 1 respondent said all five indicators influenced her access to microcredit when given education.

According to the UN source book volume II, World Bank (2002), on microfinance and microcredit, financial resources were very critical for improving women's socio-economic status. Yet studies showed that women had difficulties in accessing such resources because traditionally women did not own property. Thus educational level attained empowered women to have access to microcredit.

Due to low level of education attained by women, they do not practice proper book-keeping of their transactions to enable them access microcredit. Lack of collateral, cultural and social structures also combined to affect their access to microcredit.

Similarly, microcredit to farmers or villagers enabled these people to obtain the things they needed to increase their economic reward. Financial resources were very critical for improving women's socio-economic status (Grameen Bank, 1976).

Education and access to land

Access to land in Northern Ghana and for that matter Navrongo is cultural and customarily determined through one's lineage and being male child. Females are not accorded the right to ownership of land. With changing times land can now be accessed depending on ability to pay and other tenancy arrangement depending on one's relationship with the landlord. The results of the 190 respondents interviewed are shown in Table 14.

Table 14: Education and access to land

Level of Education	Access to land				
	Strongly disagree	Disagree	Non-response	Agree	Strongly agree
Non-formal	0	3	9	8	3
Primary	0	0	13	18	15
Middle/JSS	0	1	4	8	12
Secondary	0	1	4	12	2
Post-Secondary	0	0	10	24	6
Tertiary	1	0	10	15	11
Total	1	5	50	85	49

Source: Fieldwork (2010)

In the non-formal category twenty-three (23) respondents were interviewed. Primary level forty-six (46), Middle/JSS twenty-five (25), secondary level Nineteen (19), Post-secondary level forty (40) and Tertiary level, thirty-seven (37) respondents were interviewed.

In general only one (1) respondent strongly disagreed with the statement that education led to access to land. Five (5) respondents representing 2.6% disagreed, fifty (50) representing 26.3% were in the non-response category, eighty-five (85) representing 44.7% agreed and forty-nine (49) representing 25.7% strongly agreed with the statement.

Number of indicators of access to land

Table 15 shows the number of indicators that the level of education attained could empower respondents to access land in the study area. These

indicators were the right to inheritance, the right to purchase, the right to rent land, ownership by shared-cropping, and land for estate development.

Table 15: Indicators of access to land

No of indicators	Frequency	Percent
Any two indicators	8	4.21
Any three indicators	89	46.84
Any four indicators	89	46.84
Any five indicators	4	2.11
Total	190	100.00

Source: Fieldwork (2010)

Table 15 clearly showed that generally when women obtain education, three to five indicators were relevant to their access to land. From the results, 97.89 percent said two to four of the indicators impacted their lives positively to access land. This will lead to poverty reduction when respondents accessed more land through educational level attained.

Level of education and access to employment

Table 16 shows the extent to which respondents agreed or disagreed with the statement that level of education attained enabled them access employment. Out of the 23 women interviewed in the Non-formal category, 1 respondent was neutral. Fourteen representing 60.6 percent agreed and 8 representing 34.78 percent strongly agreed with the statement. In the Primary category, 46 respondents were interviewed. Seven representing 15.2 percent

were neutral, 15 representing 32.6 percent agreed and 24 representing 52.2 percent strongly agreed with the statement.

Table 16: Level of education and access to employment

Level of education	Access to employment			
	Disagree	Non-response	Agree	Strongly agree
Non-formal	0	1	14	8
Primary	0	7	15	24
Middle/JSS	1	2	10	12
Secondary	0	1	10	8
Post-Secondary	0	0	19	21
Tertiary	1	3	15	18
Total	2	14	83	91

Source: Fieldwork (2010)

In the Middle/JSS and Secondary categories, out of 44 respondents interviewed only 1, representing 2.27 percent disagreed. Three representing 6.8 percent were neutral, 20 representing 45.5 percent agreed and 20 representing 45.5 percent strongly agreed with the statement. This showed that 91 percent of women in study area recognised that the level of education attained enabled them to access employment.

In the Post-secondary and Tertiary level, 77 respondents were interviewed all together. Out of this number, 1 disagreed with the statement which represented only 1.3 percent. Three were neutral representing 3.9 percent, 34 representing 44.2 percent agreed and 39 representing 50.6 percent

strongly agreed with the statement. This result was of utmost importance to women as over 90% of women agreed that education led to access to employment. Viewed from the over all response to this variable 174 of the respondents agreed that educational level attained enabled them access employment in the labour market. This represented 91.5 percent of the respondents interviewed.

Indicators of access to employment

Table 17 shows the number of indicators that was used to assess how educational level attained influenced access to employment in the labour market. The indicators used were education empowered women to be equipped with employable skills, compete favourably in the job market, and breaking cultural barriers that limits women from accessing employment.

Table 17: Indicators of access to employment

No. of indicators	Frequency	Percent
Single indicator	1	0.5
Any two indicators	29	15.3
Any three indicators	160	84.2
Total	190	100.0

Source: Fieldwork (2010)

The results revealed that 99.5 percent of the respondents interviewed were of the view that being equipped with employable skills, being competitive in the job market and breaking cultural barriers that limited women, enabled them to access employment in the labour market through

level of education attained. Only 1 respondent representing 0.5 percent was of the opinion that education did not lead women to access employment.

Women with education and access to healthcare

For the purpose of carrying out correlation and regression analysis the following cross tabulation were made (see appendix for table). This measured the association and relationship between the variables. The parameters (Pearson’s correlation co-efficient) thus obtained were subjected to chi-square and t-test for significance. The R square of the regressions carried out also indicated the proportion of the dependent which is explained by the independent variables.

HYPOTHESIS 1: H₁ There is a significant difference between women who have obtained education and access to healthcare.

<u>Chi-square</u>	<u>level of education</u>	<u>Access to healthcare</u>
	18.1421	197.47
D f	5	4
Asymp sig	0.002	0.000

Since the significance value calculated is less than the alpha value, we fail to accept the null hypothesis and accept the alternate hypothesis. Thus there is a significant difference between women who have education and access to healthcare.

Using one sample T-test at 0.95 confidence interval, the significance (2 tailed) value yielded 0.000. This means that the error associated in rejecting

the null hypothesis is 0.00%. We therefore conclude that, there is significant association between women who have education and access to healthcare.

The null hypothesis was tested as there is no significant, difference between women who have education and access to healthcare. The correlation co-efficient (r) calculated was = 0.091.

$$P\text{-value} = 0.022$$

$$\text{Significant level} = 0.05$$

Since the 'r' lies between zero and one ($0 < r < 1$), there is a positive linear relations between education of women and access to healthcare. For test of significance of 'r' the sig value 0.022 is less than 0.05 significance level. This suggest that the correlation co-efficient 'r' is significant; hence we reject the null hypothesis that there is no significant difference between women who have education and access to healthcare.

Women with education and access to microcredit

HYPOTHESIS 2, H₁: There is a significant relationship between women who have education and access to microcredit.

The correlation co-efficient (r) calculated was = 0.118.

$$P\text{-value} = 0.043$$

$$\text{Significance} = 0.05$$

The correlation co-efficient (r) lies between zero and one (i.e. $0 < r < 1$). This means there is a positive linear relationship between education and training of women and access to microcredit. The chi-square test produced a sig (two-tailed) value of 0.000 at 0.95 confidence interval. Since the sig value of 0.000 is less than 0.05 alpha values, we reject the null hypothesis. We

conclude that there is significant relationship between education and access to micro credit.

Since the sig value of 0.043 is less than the table valued of 0.05 set by SPSS at default, we reject the null hypothesis. We conclude that there is significant relationship between educational level attained by women and access to microcredit.

Women with education and access to land

HYPOTHESIS 3: H₁: There is a significant relationship between women who have education and access to land. The following results were produced:

Correlation co-efficient = 0.047

P-value = 0.013

Significance level = 0.05

The correlation co-efficient (r) lies between zero and one (i.e. $0 < r < 1$). This means there is a positive linear relationship between educational level attained by women and access to land. As the level of education of women increases the more they are likely to access more land for agricultural and other purposes. Since the sig value calculated is less than the table value we reject the null hypothesis and conclude that there is significant association between women who have education and access to land.

These findings confirms other studies conducted earlier which established that access to land for agricultural purposes reduces poverty among people of any given society. According to International Fund for Agricultural Development (IFAD) land reforms policies that reduce inequality

in land ownership and create small farms, can be a cost effective way of reducing rural poverty. Studies have shown that over 60% of Ghanaian women are engaged in food crop farming as an occupation (Vallenga, 1986). The same situation can be said to be occurring in Navrongo where majority of the women are farmers but lacks access to land since all lands in the various communities are vested in male adults.

Kotey and Tsikata, (1998), also found that land relations are critical to women's right in Ghana, not only for economic reasons, but due to the central role of agriculture in meeting livelihood needs of a majority of the population and also for special and political status. Land relations often reflect gender, class and kinship relations and are implicated in their reproduction.

Accessibility to land, regionally of the inheritance system, shows regional variation. Women access to agricultural land seems better in Southern than in Northern Ghana. Over 50% of land owners are women in Ashanti, whereas only 2% and 4% of farms are owned by women in the Northern and Upper West Regions respectively (MOFA, 1991). In the Upper Region it is 29.31% due to out-migration of males.

Tsikata (2001) also established that the estimated land holdings under production in Ghana, women cultivate 40%. These findings reemphasises the importance of land in the live of Ghanaian women in the area of poverty reduction efforts.

Women with education and access to employment

HYPOTHESIS 4: H₁: there is a significant association between women who are educated and access to employment.

The result produced is shown below:

$$r = 0.053$$

$$P\text{-value} = 0.356$$

$$\text{Significance level} = 0.05$$

Since the 'r' less between zero (0) and one (1) ($0 < r < 1$), there is a positive linear relationship between education of women and access to employment.

For test of significance 'r', the sig value of 0.356 is greater than the table value of 0.05 significance level. This suggests that the correlation 'r' is not significant. Hence the decision is to accept the null hypothesis that there is no significant association between education of women and access to employment.

These findings agree with earlier studies by Morrison and Lamana (2006). They reported that in the Kyrgyz Republic 24.8% of woman said house keeping, taking care of children, sick persons or the elderly, kept them away from working outside home, but only 1.5% of men reported these reasons. This is a result of the numerous constraints that women face in many societies today. Among them include the role as house wives, care takers, religious and cultural barriers and the like. These practices have the tendency of perpetuating generational poverty among women.

Summary

From the results discussed the background characteristics looked at age, level of education, marital status, employment status and number of dependents. The age limit of women interviewed ranged from 30 to 60 years.

Those who were within their early and later working life constituted 10.5% and 89.5% were in their prime working life.

The level of education of respondents also ranged from non-formal, Primary, Middle/JSS, Secondary, Post-secondary and Tertiary. Out of 190 women interviewed, 23 women had Non- formal education representing 12.1%, 46 women had Primary education representing 24.2%, 25 women had Middle/JSS education representing 13.2%, 19 women had Secondary education representing 10.0%, 40 women had Post-secondary education representing 21.1% and 37 had Tertiary education representing 19.5%.

The marital status of women were categorised as single, separated, divorced, widowed and married. Respondents who lived as single, separated, divorced and widowed were 71 representing 37.4%. The rest of the 119 respondents representing 62.6% were married.

The employment status of the respondents ranged from employee, self-employed and other. Ninety (96) were employees which represented 50.5%, 74 self-employed representing 38.9% and 20 were producers of food crops and vegetable on subsistence basis in the (other) category representing 10.6%.

The dependency rate the study area was very high. From the evidence produced it was observed that 92.6% representing 176 out of 190 women had had high dependency ratio. The dependency ranged from 4 to 15 members per female-head.

The results of the findings established a strong relationship between education of women and poverty reduction in the study area. Education and income showed a high positive correlation 0.858 or 85.8%. The measures of

central tendency of the income of respondents produced the following results: mean income of GH¢3243.41, median income of 2485.00, and modal income of GH¢520.

On women education and access to healthcare, microcredit, land and employment, the study revealed that the more education women had, the higher the access to these services and economic resources used to measure poverty reduction. Thus between 80% to 90% of the respondents perceived that given education they can be empowered economically and socially to access healthcare, microcredit, land and employment.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents a summary of the findings based on the objectives of the study. It also considered the methods used in the presentation of the results and the actual sample size used in the collection of the data. A conclusion was drawn based on the results discussed and findings revealed and made appropriate recommendations for future research direction and policy formulation on poverty reduction among women in particular and Ghana in general.

Summary

The main objective of the study examined the extent to which the level of education attained women brought about a reduction in poverty in Navrongo. The specific objectives were:

- Establishing the relationship between education and healthcare.
- Assessing the impact of education and access to microcredit.
- Describing the extent to education influenced access to land.
- Explaining the relationship between education and access to employment.
- Assessing the impact of education and income level
- Making recommendations

To ensure reliability and accuracy of information gathered for the study, the researcher employed both primary and secondary data. The major instrument used for the collection of the primary data was a set of interview schedule designed by the researcher. In addition observation was used to collect data. This was based on the fieldwork undertaken by the researcher. The interview schedule was divided into three parts, this was made up of closed -ended, open-ended items and checklist. This was administered personally by the researcher with assistance from trained research assistance to the respondents. This prevented and minimized the lost of questionnaires and retrieval of information in time.

The actual sample used in the collection of the data was 190. These respondents were interviewed with the help of research assistants and women enumerators' from the various communities that the research took place. The sample was selected in an unbiased manner given chance for every respondent to be part of the study. The results were presented in the order in which the objectives were formulated. The research questions were designed to establish relationships between the level of education attained and poverty alleviation. The study used cross-sectional, descriptive, non-interventional study design which was focused on women in Navrongo. The interview schedule was used to collect data from the field. The secondary data used was from Ghana population census figures (GSS, 2005) and World Bank (2007) data on poverty lines across the world. The analysis was based on the result of the primary data collected.

Tables, percentages, Cross tabulation, Pearson correlation, regression, simple frequency distribution were used to analyze the data.

Poverty reduction

Five variables were used as proxy for women poverty alleviation (access to healthcare, access to micro credit, access to land, access to employment and income level). The results established strong relationships between women educational level attained and access to employment, access to healthcare, microcredit, land and income. As women educational levels rise the more they are able to equip themselves with employable skills. When women get employed, they become economically emancipated and are better able to engage themselves meaningfully in the socio-economic development of their societies.

Healthcare

The response on access to healthcare by women was very high. On this variable, 88 percent of the respondents agreed that educational level attained led women to access healthcare. Generally, women in the various categories of education agreed that education empowered them to access healthcare. About 97.9% agreed that all the indicators influenced their lives through education, thus reducing poverty among women. The correlation between the variable was rather weak (i.e. $r = 0.091$) but was significant at 0.002 with 0.05 tolerance level.

Microcredit

Generally, the response to this objective was very high. The response showed that women were aware of the factors that determined poverty reduction among women. About 88.9% of the women agree that education

empowered them to access microcredit which enabled women to reduce poverty. It was only 0.015% of women interviewed that did not see how educational level attained enabled them access microcredit. The Cross tabulation produced a Pearson correlation co-efficient (r) of 0.18.

The result produced showed a significant value of 0.04% which was significant at 0.95 confidence interval. This showed that education of women equipped them with the necessary negotiation skills, resources to access microcredit for their businesses and education of their children. On the indicators of access to microcredit, a large percentage of women were of the opinion that education empowered them financially which led to a reduction in poverty levels.

Land

The findings revealed that access to land in the study area was a preserve of the male child. Women were therefore disadvantaged in their access to land for agricultural purposes; in all only 2.6 percent of the respondents interviewed disagreed that education led to access to land. Twenty six per cent of the respondents were neutral, while 70.4% were of the view that education enabled them access land.

On the indicators 95.8% subscribed to three or five of them and that education of women enabled them access land for various purposes. The 4.2% said only two of the indicators were relevant to women access to land, this kept them economically active; earn income and thus reduced poverty.

The correlation co-efficient (r) = 0.047 showed a very weak positive value. The conclusion was that as women's educational level increased, they were likely to access more land.

Employment

On the score of this variable 90.6 percent of women in the study area said that educational level attained led them to access employment in the labour market. This meant that only 9.4 percent of the women interviewed did not agree with the relationship between education and access to employment. The study therefore established that, the more women were educated, the more they were likely to access employment in the labour market. The correlation co-efficient confirmed this claim. The value of Pearson $r = 0.053$ showed a weak positive correlation co-efficient.

On the indicators of the variable access to employment in the labour market a large percentage of the women interviewed agreed with those indicators. One hundred and sixty respondents representing 84.2% said that the three indicators enabled them access employment leading to poverty reduction. Thus education was a tool that prepared women for the job market. Once woman were employed, as either employees or self-employed, poverty among women could be greatly reduced.

Education and income levels

The study revealed that the level of education of women determined their income status. When income was categorized into very low, low, moderate, high and very high, with given cut points, the very low to moderate

income earners had very low educational levels. The majority of them were in Non-formal to secondary levels of education.

The correlation co-efficient produced was positive (i.e. $r = 0.865$). The test for significance produced a sig value of 0.000 at 95% confidence interval. Thus there was significant association between income levels and educational levels of women. Therefore the more women were given education, the higher their income earning possibilities. These reduced poverty among women in the study area who had high level of education.

To measure relationship between level of education and income, a regression was run which produced a Pearson $r = .858$. The strong positive correlation showed that as education of women increased their income levels will also increase.

Conclusions

Based on the findings from the study, the main conclusion that came out was:

More than half of the women interviewed had lower educational level; those in the non- formal, primary, secondary did not make any effort to further their education once they got married. Majority of these women were those in the outskirts of Navrongo Township.

Lower levels of education were also associated with lower incomes. The association between education and income levels was very strong. There was significant association between these variable.

The entire variable used to compute variable of poverty reduction impacted positively as shown in the response. Access to health care,

microcredit, land, income levels and employment were seen as ways of poverty reduction among and in any modern society. The more education women had, the more income they would obtain leading to quality life style.

The number of dependents on women in the study area affected their ability to offer themselves for higher education. This adversely affected majority of women, thus their inability to be marketable in a competitive global market.

Regression analysis showed that age, employment status, income level, number of dependents jointly affected women ability to obtain education. Lack of education meant women continued to be at the lower edge of the society. This affected women by disempowering them from taking economic, social and political opportunity that may come their way.

The general conclusion was that higher levels of education empowered women to access healthcare, microcredit, land and employment in the labour market. This had the tendency of improving the socio-economic wellbeing of women and thus poverty reduction.

Recommendations

Based on the findings of the study and conclusions, the following recommendations were made:

- Chiefs, elders and community members in Navrongo must sit and discuss certain cultural practices that affect women and girls education. Some of these practices include betrothal marriages, early marriages, girls seen as properties of another family to be sold in marriage to the husband, branding intelligent girls as witches and the like.

- Ghana Education Service, Churches, and NGOs can collectively work together to reverse these trends of lack of commitment to women education. Efforts should be made to encourage young girls and women not to rush to look for employment at the expense of their education. This can be done by re-orienting the minds of women and girls towards higher education.
- Ghana Health Services, Plan Ghana, and other gender-based NGOs can intensify their education on women practicing family planning to reduce the number of dependents.
- District Assemblies can establish scholarships for brilliant girls/women at the Senior High and Tertiary levels respectively. The MP common fund can also be used to award scholarships to girls and women who desire to pursue further studies with the relevant qualification.

Areas for further research

In the light of these findings, a research could be conducted on:

- Relationship between women Socio-economic empowerment and GDP growth.
- The extent to which political and governmental structures limit women access to education and training.

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APPENDICES

APPENDIX 1

INTERVIEW SCHEDULE FOR WOMEN IN NAVRONGO

Introduction

This is purely an academic exercise and every information provided will be treated confidentially.

Community name:

House number:

Please tick the appropriate box/boxes as they may apply to you.

Part I: Personal data

1. Age

2. What is your highest level of education

Non- formal Primary Middle/JSS

Secondary Post-secondary (specify).....

Tertiary (specify).....

3. Marital status

Single Separated Divorced

Widowed Married Other (specify).....

4. Employment status

Employee Self-employed Other (specify).....

5. Annual income

6. Who depend on you?

Spouse Children Mother

Father Other (specify).....

7. How many are they?

Part II: Education of women and poverty reduction

On the following scale circle the number to indicate how much you agree or disagree with each statement. Also note the meaning of the following responses.

Strongly disagree (1): you strongly disagree with the statement as it applies to the subject or to you.

Disagree (2): you disagree more than you agree with the statement as it applies to the subject or to you.

Neutral (3): you are not able to give knowledgeable response.

Agree (4): you agree more than you disagree with the statement as it applies to the subject or you.

Strongly agree (5): you strongly agree with the statement as it applies to the subject or you.

Please Note: the values in the bracket represents the ranks of the responses variable (on a scale of 1 to 5) relating to the proposed statement.

Statement	Strongly				Strongly
	Disagree	Disagree	Neutral	Agree	Agree

8. Education of women

Will lead to access to healthcare	1	2	3	4	5
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9. Education of women

Will lead to access to microcredit	1	2	3	4	5
------------------------------------	---	---	---	---	---

- Forming or joining women groups to benefit from microcredit
- Sharpening their negotiation skills to engage financial NGOs or institutions for microcredit
- Developing a saving culture that will empower them to obtain microcredit
- Being gainfully employed

Section C: Indicators of access to land

15. Through education women can access land by (tick as many that apply)

- Having the right to inheritance
- Having the right to purchase
- Having the right to rent
- Obtaining land for shared-cropping (cash or food crop farming)
- Obtaining land for estate development

Section D: Indicators of access to employment

16. Education can empower women to (tick as many that apply)

- Be equipped with employable skills
- Compete favourably in the job market
- Break religious and cultural barriers that limit their access

17. Suggest ways of improving the conditions of women on their access to education that will lead to poverty alleviation among women.

.....

.....

APPENDIX 2

REGRESSION EQUATION

Model summary

R = 0.910

R² = 0.825

Standard error = 0.730

R Change = .828

F Change = 221.874

Sig F Change = 0.000

Y = f(X)

Y = 4.664 - 0.132 X₀ - 0.257X₁ + 0.660X₂ - 0.082X₃

Where Y = Level of poverty

X₀ = Age

X₁ = Employment status

X₂ = Annual income

X₃ = Number of dependents

APPENDIX 3
REGRESSION AND CHI-SQUARE TABLES

A: Case Processing summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Level of education * Access to healthcare	190	100.0%	0	.0%	190	100.0%
Level of education * Access to microcredit	190	100.0%	0	.0%	190	100.0%
Level of education * Access to land	190	100.0%	0	.0%	190	100.0%
Level of education * Access to labour market	190	100.0%	0	.0%	190	100.0%

B: Education and access to healthcare

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.661 ^a	20	.022
Likelihood Ratio	24.529	20	.220
Linear-by-Linear Association	1.565	1	.211
N of Valid Cases	190		

a. 18 cells (60.0%) have expected count less than 5. The minimum expected count is .10.

Symmetric Measures

		Asymp. Std.		Approx.	
		Value	Error ^a	Approx. T ^b	Sig.
Nominal	by Phi	.427			.022
Nominal	Cramer's V	.214			.022
Interval by Interval	Pearson's R	.091	.082	1.253	.212 ^c
Ordinal by Ordinal	Spearman Correlation	.086	.076	1.187	.237 ^c
N of Valid Cases		190			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

C: Education and access to microcredit

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.579 ^a	15	.043
Likelihood Ratio	24.248	15	.061
Linear-by-Linear Association	2.649	1	.104
N of Valid Cases		190	

a. 12 cells (50.0%) have expected count less than 5. The minimum expected count is .30.

Symmetric Measures

		Asymp. Std.		Approx.	
		Value	Error ^a	Approx. T ^b	Sig.
Nominal	by Phi	.367			.043
Nominal	Cramer's V	.212			.043
Interval by Interval	Pearson's R	.118	.072	1.635	.104 ^c
Ordinal by Ordinal	Spearman Correlation	.128	.073	1.764	.079 ^c
N of Valid Cases		190			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

D: Education and access to land

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36.484 ^a	20	.013
Likelihood Ratio	33.939	20	.027
Linear-by-Linear Association	.416	1	.519
N of Valid Cases		190	

D: Education and access to land

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36.484 ^a	20	.013
Likelihood Ratio	33.939	20	.027
Linear-by-Linear Association	.416	1	.519
N of Valid Cases	190		

a. 13 cells (43.3%) have expected count less than 5. The minimum expected count is .10.

Symmetric Measures

		Asymp.		Approx.	
		Value	Std. Error ^a	Approx. T ^b	Sig.
Nominal	by Phi	.438			.013
Nominal	Cramer's V	.219			.013
Interval	by				
Interval	Pearson's R	.047	.077	.644	.520 ^c
Ordinal	by Spearman				
Ordinal	Correlation	.058	.076	.797	.426 ^c
N of Valid Cases		190			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Symmetric Measures

		Asymp.		Approx.	
		Value	Std. Error ^a	Approx. T ^b	Sig.
Nominal	by Phi	.438			.013
Nominal	Cramer's V	.219			.013
Interval	by				
Interval	Pearson's R	.047	.077	.644	.520 ^c
Ordinal	by Spearman				
Ordinal	Correlation	.058	.076	.797	.426 ^c
N of Valid Cases		190			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

E: Education and access to healthcare

Chi-Square Tests

	Value	df	Asymp. Sig. (2- sided)
Pearson Chi-Square	16.407 ^a	15	.356
Likelihood Ratio	18.706	15	.227
Linear-by-Linear Association	.525	1	.469
N of Valid Cases	190		

a. 12 cells (50.0%) have expected count less than 5. The minimum expected count is .20.

Symmetric Measures

		Asymp. Std.		Approx.	
		Value	Error ^a	Approx. T ^b	Sig.
Nominal by	Phi	.294			.356
Nominal	Cramer's V	.170			.356
Interval by	Pearson's R				
Interval		.053	.072	.723	.470 ^c
Ordinal by	Spearman				
Ordinal	Correlation	.055	.072	.750	.454 ^c
N of Valid Cases		190			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

APPENDIX 4

MAP OF KASSENANANKANA - NAVRONGO

