

**WOMEN'S EMPOWERMENT AND FERTILITY IN RURAL TANZANIA:
A CASE OF IGUNGA DISTRICT**

BY

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
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ABSTRACT

This study was conducted to investigate the relationship between women's empowerment and fertility in rural Tanzania. Data were collected from randomly selected 120 women in four randomly selected villages from two wards in Igunga District using a structured and non structured questionnaire. Descriptive and regression analyses using Statistical Package for Social Sciences were employed to determine the factors for fertility. Women's empowerment was measured by five proxies: economic decision making, mobility, coercive control, family planning and contraceptive use, and family size decision making. Fertility status was measured by age specific fertility rates and total fertility rates. Results of descriptive analysis suggest that fertility of women was influenced by age of woman, age at first birth, household size, marital status, education, occupation, economic decision making, family size decision making, coercive control, and contraceptive use. Although income did not show influence on fertility, employment status of woman indicated high influence. The multiple regressions revealed that fertility level was attributed to factors of age, household size, education, family size decision making, age at first birth, and marital status which were statistically significant at $p < 0.05$ regression coefficients, implying that the number of children born increases with age of woman and household size and it decreases with increase in her education level, age at first birth, ability on family size decision making, and age at first marriage. It was observed that women's empowerment is multidimensional, that is, different aspects do not necessarily co-vary together. A woman may be decisive in one or several aspects like in mobility and coercive control but not in other aspects like family size decision making. Thus, it has to be taken holistically. It is recommended that women's empowerment and sexual and reproductive health should be institutionalised. Education system, beginning at lower levels syllabi, should emphasise women's empowerment and sexual and reproductive health to men and women to make the youth especially in rural areas avoid higher fertility for the national development.

DECLARATION

I, Mabula Emmanuel Massende Bugumba do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work and that it has neither been submitted nor being concurrently submitted for higher degree award in any other institution.

Mabula Emmanuel Massende Bugumba
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Date

The above declaration is confirmed

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Date

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DEDICATION

This work is dedicated to the Almighty God the Creator of the Universe and Source of Knowledge, under whose guidance I have done this study successfully and pursued studies up to this level. I also dedicate it to my mother, the late Sigwa Nyanzala Maige and my father, the late Massende Nguno Sindi for their parental care in my childhood.

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LIST OF ACRONYMS

AIDS	- Acquired Immune Deficiency Syndrome
ASFR	- Age Specific Fertility Rate
CEDAW	- Convention on the Elimination of All Forms of Discrimination Against Women
CI	- Confidential Interval
FGDs	- Focus Group Discussions
FP	- Family Planning
HH	- Household
HIV	- Human Immunodeficiency Virus
ICPD	- International Conference on Population and Development
MCDGC	- Ministry of Community Development Gender and Children
MDGs	- Millennium Development Goals
MNCEB	- Mean Number of Children Ever Born
MNCB	- Mean Number of Children Born
NBS	- National Bureau of Statistics
NGOs	- Non Governmental Organisations
NMB	- National Micro-finance Bank
NPP	- National Population Policy
NSGRP	- National Strategy for Growth and Reduction of Poverty
PCA	- Principal Component Analysis
PRB	- Population Reference Bureau
SADC	- Southern Africa Development Commission
SD	- Standard Deviation
SSA	- Sub-Saharan Africa
TDHS	- Tanzania Demographic and Health Survey
TFR	- Total Fertility Rate
UNDESA	- United Nations Department of Economic and Social Affairs
UNDECA	- United Nations Department of Economic Commission for Africa
UNFPA	- United Nations Population Fund
URT	- United Republic of Tanzania
VEO	- Village Executive Officer
VTIs	- Vocational Training Institutes

CHAPTER ONE

1.0 INTRODUCTION

1.1 Overview

This chapter is divided into five sections. The first section provides the background information related to women's empowerment and fertility. In this section the trends of population growth rates, population projections, fertility rates, and women's empowerment as defined by the Cairo Conference in 1994 are presented. The second and third sections present the problem statement and justification, respectively. The fourth section provides the main and specific objectives of the study. In this section the research questions are also provided. Lastly, the fifth section provides the conceptual framework in which the dependent and independent variables are defined.

1.2 Background Information

World populations are growing rapidly. On 12 October, 1999 the United Nations announced that global population had reached the sixth billion mark, just 12 years after passing five billion (PRB, 2002). As on August, 2009 world population was estimated to be 6.8 billion (Wikipedia, 2009). Basing on the United Nations recent projections, the world population will be seven billion as early as 2011 or as late as 2015 (United Nations, 2007). Even though population trends remain difficult to predict, it is beyond doubt that understanding global population projections requires an analysis of fertility rates due to their remarkable contribution to population growth (Ayoub, 2003).

Most of the increases in population growth are attributed to developing countries especially in Sub-Saharan Africa (SSA) countries where fertility rates are very high (United Nations, 2005). In highly developed countries, fertility is 1.6% children per woman while in less

developed countries, it is 2.9 children per woman, and 4.6 children per woman in the world's 50 least developed countries (Tulloch, 2008).

The reasons for higher fertility rates in SSA than in other major regions of the world remain to be socio-economic and cultural (Mturi and Hinde, 2001). In the early years African countries including Tanzania had supported rapid population growth with reasons that Africa had a sparse population, so rapid population growth was needed to fill the gap created by slave trade and early colonial catastrophes (Koponen, 1986). Thus, Tanzania is experiencing high population as per 2002 Population and Housing Census. Data show that population of Tanzania increased from 23.1 million in 1988 to 34.4 million in 2002 with an average growth rate of 2.9 per annum and it was projected to reach 37.9 million by 2006 and 63.5 million by 2025 (URT, 2006a). Meanwhile the current fertility rate in Tanzania is still 5.7 children per woman (URT, 2007).

The high fertility rate observed in Tanzania is an outcome of a number of factors, including the interrelated aspects of early and nearly universal marriage for women, and absence of effective fertility regulations among women of reproductive age (URT, 2006a). Other underlying factors are rooted in the socio-cultural value-system, including value of children as a source of domestic and agricultural labour and old-age economic and social security for parents, male child preference, and low social and educational status of women in society which prevent them from taking decisions on their fertility and use of family planning services (URT, 2006a). However, fertility rate as a demographic measure (the number of children per woman) has been until recently considered to be a fairly reliable indicator of population growth (Wikipedia, 2009). The decline to 2.9 children per woman in developing countries observed recently has been a result of delayed marriage mainly due to schooling and the use of contraception (United Nations, 2005). Thus, efforts for fertility

control require empowering women. Women empowerment is perhaps the most critical determinant of changes in demographic and health behaviour. While assessing some dimensions of women empowerment in relation with fertility behaviour, it is important that education, employment, economic status, number of male issues, and autonomy at micro level be used as proxies for women status (Badar *et al.*, 2007).

The United Nations International Conference on Population and Development (ICPD) in Cairo, 1994, and the Fourth World Conference on Women in Beijing, 1995, in which 179 countries agreed on a 20 year plan to stabilise the world's population outlined factors considered critical to the empowerment of women (Linkages, 1994). At these meetings empowerment of women was defined to include providing women with access to employment, education, and reproductive health care, and free from discrimination, coercion, and violence, and these factors were linked with fertility decline (United Nations, 1994). Some of them are concerned that public policy strategies to empower women may further lead to the decline in fertility, while others contend that policies supporting women in working and raising children are not only just but also most likely to sustain fertility (Castles, 2003).

Following the ICPD a considerable change has taken place in the focus of population policy from demographic to non demographic themes, including reproductive health, quality of care, and gender issues (Jones and Leete, 2002; Hardee and Leahy, 2008). By locating women within the context of global development, these conferences have encouraged women to openly discuss issues that affect their status and reproductive health (Odutolu *et al.*, 2003). However, while women's empowerment is considered important for fertility decline, there is limited empirical evidence from Tanzania which explain the linkage between the two concepts. This study, therefore, intends to explain the link

between women's empowerment and fertility as an ultimate solution in tackling the problem of high fertility rate in Tanzania.

1.3 Problem Statement

As earlier stated, the 1994 ICPD specifically identified "empowering women" as an essential ingredient for achieving desirable reproductive health and population outcomes. Thereafter, the 1995 Fourth World Conference in Beijing further reiterated recommendations by the ICPD and added several others in a renewed call for gender equality and the empowerment of women (Malhotra and Schuler, 2005).

From this period many efforts have been made by the government of Tanzania to empower women in domestic and reproductive health spheres. The government formulated the National Population Policy (NPP) in 1992 to work hand in hand with the National Family Planning Programme (NFPP) and Non Governmental Organizations (NGOs) such as Family Planning Association of Tanzania (URT, 2006a). The policy was amended in 1996 probably as a result of the Cairo and Beijing meetings to adhere to the definition of women's empowerment which include issues of woman reproductive health.

Moreover, the government formulated the Ministry of Community Development, Women, and Children which later came to be known by the name of Ministry of Community Development, Gender, and Children (MCDGC). The ministry has paved way for women's awareness in issues related to their empowerment and welfare. For example, on 8 March every year Tanzania celebrates the Women's World Day with different slogans which observe women dignity. In all anniversaries the Beijing resolutions are considered. Many studies world wide and in Tanzania in particular, have been conducted on factors responsible for fertility levels. Most of them, for example by Docquier (2004), Mturi and

Hinde (2001), and Ayoub (2003) looked on fertility with a relation to income levels as well as educational levels. They propound that fertility level is determined by woman income and educational status. However, these and other related studies do not directly link fertility and women's empowerment except one by Larsen and Hollow (2003) in Kilimanjaro Tanzania which reports a decline in fertility in Tanzania as a result of the factors that are related to women's status. It is evident from the previous studies that empowerment as a concept and a practice was not linked with fertility. Hence, this study intends to fill the gap of knowledge using Igunga District as a case study.

1.4 Justification

Tanzania is having high fertility levels. Mainland Tanzania has recorded 6.5 and 3.5 births per woman in rural and urban areas, respectively (URT, 2006a). With average growth rate of 2.9% it was projected to reach 37.9 million by 2006 and 63.5 million by 2025 (URT, 2006b). The 2002 Population and Housing Census showed a proportion of the population aged below 15 and above 65 years to be 44% and 40% respectively, indicating young population dominance as a result of high fertility rate. This age structure means a larger population growth in future as the young people move into their reproductive life irrespective of whether fertility declines or not (URT, 2006a).

Studies of fertility require women's empowerment. This study intends to link fertility with women's empowerment. Being in line with NPP, National Strategy for Growth and Reduction of Poverty (NSGRP), and Millennium Development Goals (MDGs), the findings of the study are expected to contribute to policy-makers, program managers and all users to the understanding of changes in the fertility level in relation to woman position. Moreover, it will provide gender awareness and sensitivity to development planners and researchers in demography.

1.5 Research Objectives

1.5.1 Main objective

The overall objective of this study was to determine the linkage between women's empowerment and fertility.

1.5.2 Specific objectives

Specifically the study wanted to:

- (i) Identify the fertility level of women of reproductive age 15 - 49 in the study area.
- (ii) Examine the socioeconomic and cultural-determinants of fertility in Igunga district.
- (iii) Determine the extent of women's domestic and sexual and reproductive health empowerment in Igunga district.
- (iv) Assess the relationship between women's empowerment and fertility in the study area.

1.5.3 Research questions

- What is the average number of children born per women in the study area?
- How have socioeconomic and cultural factors affected fertility in the study area?
- Are there programmes or activities related to women's domestic and sexual and reproductive health empowerment in the study area?
- What is the relationship between women's empowerment and fertility?

1.6 Conceptual Framework

The empirical analysis of women's empowerment and fertility in this study is guided by the Conceptual Framework indicated in Fig. 1. This framework summarises the main factors and proxies of women's empowerment that determine fertility and the chain of causation that links them.

In this study fertility is defined as the number of children born per woman (Gelles and Levine, 1999), whereas empowerment is defined as the process by which the powerless gain greater control over the circumstances of their lives. It includes both control over resources (physical, human, intellectual, financial) and over ideology (beliefs, values, and attitudes) (Batliwala, 1994).

The women's empowerment predictors in this study include household (HH) characteristics models (woman's age, age at first birth, age at first marriage, marital status, household size), socioeconomic factors (education, income and occupation), and socio-cultural factors (sex preference and value of children). Income is measured in asset index by Principle Component Analysis (PCA) method. Empowerment is argued to be important for development because it determines the extent to which women gain access to education, are able to seek employment or health care outside the family, can acquire contraceptive information, and have the freedom to act on their fertility preferences or on the illnesses of their children, among other dimensions (Caldwell, 1986).

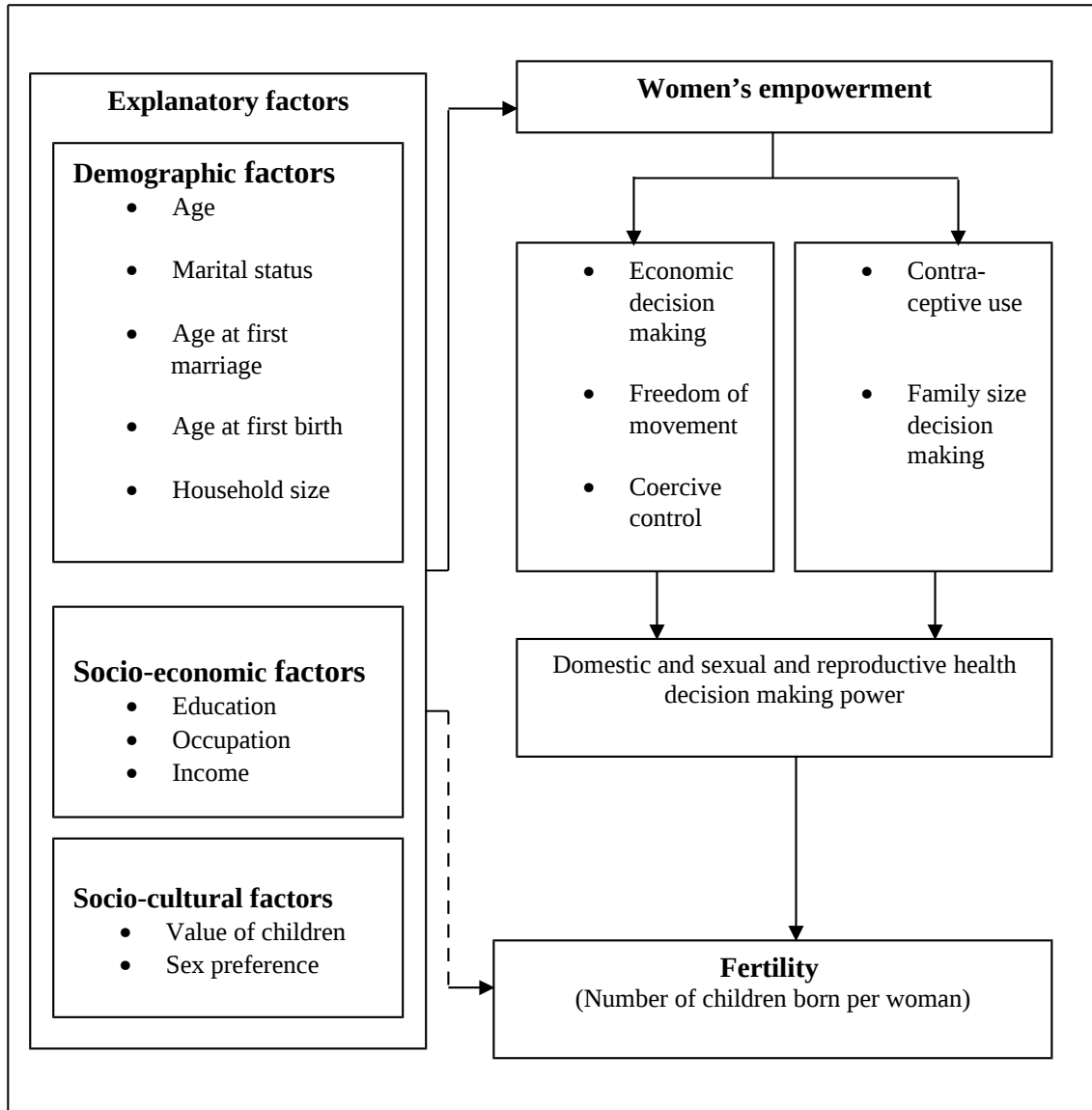


Figure 1: Conceptual Framework

The study uses women's domestic empowerment proxies as introduced by Mason and Smith (2003) plus sexual and reproductive health empowerment proxies. These particular aspects are:

- (i) Women's economic decision-making power - do they participate in the family's major economic decisions and have the freedom to make minor economic decisions on their own?
- (ii) Their family size decision-making power - do they participate in or control decisions about how many children to have?
- (iii) Their physical freedom of movement - can they visit sites such as the local market, health centre or fields outside the village without obtaining permission from other family members?
- (iv) Their husband's control of them via intimidation and force, specifically, are they afraid to disagree with the husbands for fear they will become angry with them, and does they (the husbands) ever hit or beat them?
- (v) Their awareness on family planning (FP) and their contraceptive use level - are they aware with birth control methods and do they use contraceptive, whether overtly or covertly?

Table 1: Variables to be measured by the study

Variables	Operational definitions	Indicators/Labels
Dependent variable		
Fertility	Woman's ability to give birth	Number of children born per woman
Independent variables		
Household economic decision making	Women's level of HH economic decisions	0-6 point score for woman's participation in HH economic decisions
Freedom of movement (mobility)	Woman's level of freedom of movement	0-5 point score for woman's freedom of movement
Interpersonal coercive control	Woman's level of coercive control	0-3 point score for woman's control of coercion from husband/other relatives
Knowledge of FP and contraceptive use	Women's knowledge of FP and level of contraceptive use	0-5 point score for woman's FP awareness and contraceptive use
Family size decision making	Women's level of family size decision	0-5 point score for woman's participation on family size decision
Socioeconomic variables		
Education	Woman's education level	Non formal, primary, secondary, higher
Occupation	Legal activity for earning life	Farming, civil service, petty trade
Income	Women's asset index	Point scores as women asset indices measured by PCA
Socio-cultural variables		
Value of children	Woman's attitude toward value of children	Scores on attitude toward cost/value of children measured by Likert scale
Sex preference	Woman's preference on sons or daughters	Scores on sons/daughters preference measured by Coomb's scale, (1-3 = girls bias, 4 = balance, 5+ = boys bias)
Background variables		
Age	Years since one was born	Net years since one was born
Age at first marriage	Age (in years) at first marriage	Net years at time one first married for the time
Age at first birth	Age (years) at first birth	Net years at time one bears the first child
Marital status	State of been or not been married	Married, divorced, widowed, single
Household size	Household currently residents	Total number of HH currently residents

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Overview

The purpose of this chapter is to review the literature on women's empowerment, fertility and the relationship of women's empowerment and fertility. It is divided in three sections. The first section presents definitions of key concepts in which "women's empowerment" and 'fertility' are defined. In this section, some socially accepted indicators of women's empowerment, fertility measures and determinants of fertility are presented. The second section presents review of theories relating to women's empowerment and fertility. The third section presents the status of research on women's empowerment in Africa and in Tanzania.

2.2 Definitions of Key Concepts

2.2.1 Empowerment

Empowerment is a very widely used term, particularly in the context of women and poverty, but is often misused and poorly defined. Empowerment has been defined as the process by which the powerless gain greater control over the circumstances of their lives. It includes both control over resources (physical, human, intellectual, financial) and over ideology (beliefs, values, and attitudes) (Batliwala, 1994). Empowerment is the process of gaining access and developing one's capacities with a view to participating actively in shaping one's own life and that of one's community in economic, social and political terms (Kabeer, 1996).

2.2.1.1 Women's empowerment

The core of the meaning of women's empowerment lies in the ability of a woman to control her own destiny. Kabeer (1996), whose definition is the most widely accepted, defines empowerment as "the expansion of people's ability to make strategic life choices in a context where this ability was previously denied to them." Almost all definitions of women's empowerment include some reference to an expansion of choice and freedom to make decisions and take the actions necessary to shape life-outcomes (Malhotra and Schuler, 2005).

Women's empowerment is manifested as a redistribution of power, whether between nations, classes, races, gender or individuals aiming at challenging patriarchal ideology to transform the structures and institutions that reinforce and perpetuate gender discrimination and sexual equality and to enable poor women to gain access to, and control of, both material and information resources (Datta and Kornberg, 2005). On the other hand women's empowerment should mean gaining greater control over own lives; having a voice and listened to, and being able to influence the social choices that affect the whole society (Muro, 2003).

2.2.1.2 Indicators of women's empowerment

Advocates for women's empowerment have agreed that women should have their own indicators of measuring gender equality and women's empowerment. Their reason is that many of the expert's indicators for development do not measure the critical issues for women's empowerment (Muro, 2003). Most of the socially accepted indicators are a derivative of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) indicators which were adopted by the United Nations General Assembly in 1979. They clarify the fact that the 1948 Declaration of Human Rights also

includes women rights (Mayoux, 2005). These rights are used as indicators, and they include:

- Rights to life, liberty, security of person and freedom from violence and degrading treatment and freedom of movement,
- Legal equality and protection by the law, including equal rights in marriage, women's equal rights to make decisions in their family regarding property, marriage and children, property and resources,
- Right to own property and freedom from deprivation of property,
- Freedom of thought, opinion, and association,
- Right to work, freedom from exploitation and right to rest, and leisure, and
- Right to a standard of living adequate for health and right to education including special care for mothers.

Moreover, feminists propound that empowering women is a progression through indicators. Longwe (1991) cited by Mayoux (2005) gives five indicators for empowering women. These indicators include:

- *Welfare*: The level of material welfare of women, relative to men in such matters as food supply, income and medical care,
- *Access*: Women's access to the factors of production: land, labour, credit, training, marketing facilities and all publicly available services and benefits on an equal basis with men;
- *Conscientisation*: The understanding of the difference between sex roles and gender roles, and that the latter are cultural and can be changed;
- *Participation*: Women's equal participation in the decision-making process, policy making, planning and administration,

- *Equality of control*: Control over the factors of production and the distribution of benefits so that neither men nor women are in a position of dominance.

On the other hand, Mason and Smith (2003) focus on women's empowerment in the domestic sphere, that is, their freedom from control by other family members and ability to effect desired outcomes within the household. Thus, the particular aspects (or indicators) of domestic empowerment they propose are:

- Women's economic decision-making power, that is, if a woman participates in the family's major economic decisions and has the freedom to make minor economic decisions on their own,
- Their family size decision-making power, that is, if a woman participates or controls decisions about how many children to have,
- Their physical freedom of movement, that is, if a woman can visit sites such as the local market, health centre or fields outside the village without obtaining permission from other family members,
- Their husband's control of them via intimidation and force, specifically, if a woman is afraid to disagree with the husband for fear he will become angry with him, and if he ever hit or beat her.

2.2.2 Fertility

Fertility is the natural capacity of giving life; meanwhile fertility rate is the number of children born per couple, person or population (Wikipedia, 2009). Fertility is measured in different ways. The mostly used ways include: age specific fertility rates (ASFRs), total fertility rate (TFR), general fertility rate (GFR), and crude birth rate (CBR) (NBS, 2005). ASFRs are defined in terms of the number of live births during a specified period to women in the particular age group divided by the number of woman years lived in that age

group during the specified period (NBS, 2005). They are expressed as the number of births per thousand women in the age group and represent a valuable measure for assessing the current age pattern of childbearing (Newell, 1988) and usually calculated as: $ASFR = \frac{\text{Births in year to women aged } x}{\text{women aged } x \text{ at mid year}} \times 1000$.

Total fertility rate (TFR) is the average number of children that would be born alive to a woman (or a group of women) during her lifetime if she were to pass through her childbearing years conforming to the age-specific fertility rates of a given year (NBS, 2005). The total fertility rate is calculated as: $TFR = \text{Sum of ASFRs} \times 5/1000$. It is probably the measure of fertility that is most widely used by demographers.

CBR is defined as births in a year per 1000 population. It is calculated as $\frac{\text{Births/population at mid-year} \times 1000}{1000}$. The reason it is called 'crude' rate is that it includes all ages and both sexes in the denominator. However, in this measure, no attempt is made to relate the births to the women at risk of having those births, thus, because of this it is strictly not a true measure of fertility (Newell, 1988).

2.2.3 Determinants of fertility

The factors that directly affect fertility are called intermediate variables or proximate determinants of fertility (Bongaarts, 2006). In order for the socioeconomic variables to affect fertility, they must operate through proximate determinants which are also known as biological behaviour factors (Tripath and Sarangi, 2004). Each of the proximate determinants has a direct effect on fertility and together, they determine the level of fertility (Baschieri and Hinde, 2007). The role of socioeconomic factors (education, occupation, and income) in bringing about a fertility transition remains controversial (Bongaarts, 2006). Socio-cultural determinants of fertility are a combination of social and

cultural parameters within a society. Socio-cultural determinants indirectly affect fertility. People living together enjoy life in communities or organized groups and form a specific culture (Sasu, 2007). Cultural behaviour has impact on fertility of women (Garssen and Nicolaas 2008). Value of children and sex preference are some of socio-cultural determinants of fertility.

2.2.3.1 Lactation infecundability (breast feeding)

Lactation infecundability (breast feeding) is the duration of breast feeding of the women. Lesthaeghe *et al.* (1981) cited by Ngalinda (1998) points out that the postpartum non-susceptible period is usually defined for each woman according to whichever period is longer, that of postpartum sexual abstinence. In many African cultures the resumption of intercourse is linked with weaning, breast feeding and sex and is considered to be incompatible since sperms are believed to poison the mother's milk (Sasu, 2007). Therefore prolonged durations of postpartum abstinence are observed in SSA. The most notable observation is that the period of postpartum sexual abstinence is becoming shorter in East Africa, which is likely to raise fertility. However, the demographic role of abstinence is much reduced by the relative stability of lactation (Mturi and Hinde, 2001).

2.2.3.2 Proportion of women engaging in sexual relations

In the past, marriage was thought to be universal. However, the use of marriage data as proximate determinant of fertility is becoming unreliable especially in SSA (Van de Walle and Meekers, 1993). The use of data of proportion of married woman is misleading because there is a rise in pre marital sexuality and child bearing in SSA. Thus, this downs the use of the 'proportion of married women' variable in the study of proximate determinants of fertility (Van de Walle and Meekers, 1993). Recent studies show that the proportion of women never marrying in Africa is decreasing. Research by Van de Walle

and Meekers (1993) shows that 14 regions of Tanzania decreases progressively along the age distribution and that the definition of marriage is becoming problematic in Africa, as in many African societies it is a 'process'. There is ambiguity in determining exactly when a couple is getting married (Van de Walle and Meekers, 1993). However, the proportion of women engaging in sexual relationship has effect in fertility.

2.2.3.3 Contraception

Contraceptive use is the most important factor in determining fertility (Bongaarts, 2006). Previous research has established that a rise in contraceptive use is the main proximate cause of a decline in fertility (Blanc and Tsui, 2005). It is shown that in pre transitional societies, fertility is high and deliberate use of contraceptives to limit family size is rare, whereas at the end of their transition, fertility is low and the large majority of couples practice some form of contraception. Sullivan *et al.* (2006) observed in different countries that the contribution of specific methods to overall contraceptive protection in different countries varies sharply and is one of the most intriguing aspects of the family-planning story. In most cases community-based programmes have high effect in raising contraceptive use in many settings and are central to achievements in some countries, such as Bangladesh (Prata *et al.*, 2005).

2.2.3.4 Education

Education enhances postponement of age at first marriage, reduction of family size-preference, contraceptive use and women's ability to make reproductive choices. Studies show that higher education levels of women are considerably associated with lower fertility (Martin, 1995). A study in Mainland Tanzania by Mturi and Hinde (2001) observed that women with no education had a TFR of 6.5 while those with primary education had TFR of 4.9. Therefore an increase in female's education eventually leads to decrease in fertility (De la Croix and Doepke, 2004). The point is that education helps girls

and women to know their rights and gain confidence to claim them (UNFPA, 2008). Educated women are more likely to exercise the “quality-quantity trade-off” of their children. Besides female education, it has been observed that the husbands’ education is the most influencing factor of fertility. While lower fertility is commonly associated with women's reproductive autonomy, demographers demonstrate that the influence of men's education on reproductive decision-making have much influence (Laurie and Ezeh, 2005).

2.2.3.5 Income

The fertility-income relationship at the micro level depicts the relationship between income and optimal number of children, while at macro level the average fertility response to an income stock can be positive or negative, depending on the distribution of the population (Docquier, 2004). Studies show that income in asset ownership provides power and decision making among women. Eva and Schmeewind (2006) found in India that ownership or control of household assets and income is power determined, and acquired property can help to strengthen women’s bargaining power, and influence in household decision.

2.2.3.6 Occupation

Employment for women is positively associated with contraceptive use in many countries such as Bangladesh because economic roles give them more autonomy and more control over important decisions affecting them and their families. Mother’s occupation in India revealed a significant association with number of living children (Chaturved *et al.*, 1998). In rural societies, farm and pastoral activities influence high fertility from children to assist parents to work on farm and heading of livestock, while salaried activities result in couples’ little number of children. In some developed countries, the correlation between the female labour supply and the fertility rates has become positive since the 1980s,

throwing back into question the traditional idea of substitution between child bearing and women's labour force participation choices (Recoules, 2008). The costs of having children modify family behaviour in terms of female employment and fertility (Kogel, 2004). Couples determine the number of children, the size of government that effects the allocation of time between labour supply and child rearing. Thus, according to Adsera (2004) an increase of gender discrimination may lead to a joint decrease of fertility, female labour supply and family policies.

2.2.3.7 Value of children

Children provide positive (satisfaction) and negative (costs) to potential parents. These positive and negative values combine to form net worth or value of children to a couple (Kabeer, 1996). This affects reproductive motives and decisions as the higher the value of children at any given time, the more likely a couple is to have a (another) child (Handwerker, 1986). The analysis of fertility behaviour considers the assumption that the decision to have children is analogous to other economic choices in essential ways. Thus, the decision to have children is made directly analogous to the decision to purchase any other consumer durable such as a car, costly to acquire and maintain initially, but with maintenance costs declining over the life of the child relative to the flow of utility derived from the child (Kabeer, 1996).

In the wealthier industrialised world, however, human fertility is lower and wealthier people don't desire for many children. Aarssen (2005) asserts that people are inclined to imitate the behaviour of those with highly successful careers, who commonly have few children, thus causing low fertility to spread through a population by cultural transmission. In wealthier societies, there is also less need for producing children to contribute to family income, for example as labourers on the family farm (Sanderson and Dubrow, 2000).

2.2.3.8 Sex preference

The effect of sex preference in fertility behaviour is that preference for a particular sex sustains higher level of childbearing than would be the case if parents were indifferent to the sex of their children. Couples continue to bear children beyond their overall desired family size in order to achieve some favoured sex (Eguavoen *et al.*, 2007). In South Asia son preference is larger for women with more education and is increasing over time. Badar *et al.* (2007) contends that son preference is one of the prime motivator for desire of additional children, which ultimately affects couples adoption of contraceptives in long run. The study further shows that son preference is found to be common in low empowered women and that the phenomenon is not uncommon among SSA countries. Cultural traditions and random biological process, rather than the general levels of development determine sex preferences. According to Badar *et al.* (2007) the reasons for this pattern is that parents are typically supported in their old age by son(s), whereas girls usually move away from their families hence a son is more desirable as an investment and “the traditional idea that a boy belongs to us and a daughter to someone else” has become wide spread. The other explanation is that sons are needed to maintain the family line.

2.3 Review of Theories Relating to Women’s Empowerment and Fertility

Interest in women’s empowerment among demographers and population policy makers has been heightened by the 1994 ICPD held in Cairo, at which the empowerment of women was legitimated as a social goal and enshrined as a necessary condition for population stabilization. Since then, critiques of demographers’ views of gender and women have grown apace with the wealth of empirical studies investigating women’s empowerment and its demographic consequences (Zurayk, 2001). This section presents some of the theories on women’s empowerment-fertility relations.

2.3.1 Women's income-fertility relationship

For a long time the relationship between income and fertility has been regarded as an issue of high importance in development economics and policy. For developing countries having passed a certain income threshold, rising income is accompanied by exponentially falling fertility rates (Strulic and Sikandar, 2002). Thus, as women's incomes increase, so their opportunities to substitute incomes for time in raising children (Tulloch, 2008).

Working women's high incomes can also exert positive effects on fertility. Economists argue that higher earnings follow from high levels of human capital and higher individual productivity (Martin, 2000). Thus, as employers make efforts to keep their most valuable employees, one would expect better-educated, higher-income women to suffer the least career disruption in connection with childbearing. The increase in women's labour force commitment, delays marriage, and delays childbearing (Martin, 2000). As a result, societies and their women become emancipated and wealthy, and women gain greater control over their fertility, thus, they choose to have fewer children (Tulloch, 2008).

Studies show that income in asset ownership provides power and decision making among women. Eva and Schmeewind (2006) propound that ownership or control of household assets and income is power determined, and acquiring property can help to strengthen women's bargaining power, and influence in household decision. On the other hand, women's lower access to resources and the lack of attention to gender and economic policy adds to the inequality, which, in turn, perpetuates gender gaps, for example, when girls reach adolescence they are typically expected to spend their time in household activities (UNFPA, 2008). However, the fertility-income relationship at the micro level depicts the relationship between income and optimal number of children, while at macro level the average fertility response to an income stock can be positive or negative, depending on the

distribution of the population (Docquier, 2004). Micro-credit to women have effective contribution, to some extent, in generating economic activities and participation in family decision making of the rural women is influenced (Hoque and Itohara, 2008; Hoque, 2009).

2.3.2 Education-fertility relationship in women's empowerment

The association between education and fertility has a long history in the fields of economics and demography. Numerous studies relating to national or regional levels of education and fertility show a significant inverse relationship between the two (Ayoub, 2003). Earlier economists such as Malthus and his successors proposed theories about why more education is inversely related with fertility. The link between women's education and reduced fertility, decreased rates of infant mortality, and higher gains from employment are now legendary. Tulloch (2008) states that the higher the level of female education the lower the desired family size and the greater the success of achieving it. Secondary education of girls more reduces fertility and infant mortality as well. Thus, doubling the proportion of girls educated at the secondary level would cut the fertility rate (Martin, 1995).

The gender gap prevails in the area of basic education (United Nations, 2005). This is due to the fact that education transforms individual attitudes and values from traditional toward modern and thereby enhancing modernization, which is essential and reliable to regulate fertility (Martin, 1995). Educated women are more likely to exercise the "quality-quantity trade-off" of their children. Most of these women are likely to see the benefit of their schooling and may develop higher aspirations for schooling of their own children (Martin, 1995). On the other hand, household responsibilities, early marriage, and economic and cultural factors hamper girls' access to education. The low education level among girls and

women inevitably has a negative influence on their income earning capabilities and on their access to economic opportunities, hence are prone to high fertility as they lack autonomy over their reproductive rights (Rena, 2005).

If a girl stays in school, she will probably interact with boys as equals, and gain the opportunities and skills to do things other than having children (Tulloch, 2008). Girls who have been educated are likely to marry later and to have smaller and healthier families. Educated women can also recognise the importance of health and know how to seek it for themselves and their children. Moreover, education helps girls and women to know their rights and to gain confidence to claim them (UNFPA, 2008).

2.3.3 Contextual understandings of women reproductive health

The concept of reproductive health came about largely as a result of advocacy activities in the international arena, by the feminist movement and women's health advocates (McIntosh and Finkle, 1995), who felt that women bear the great burden of ill-health from childbearing while they also suffer from a lack of control over their bodies, their fertility, and their health. Feminists like Zurayk (2001) propound that for a successful women's empowerment, reproductive health should be understood through social context due to variations observed between the developed and the developing world. They look on Lifecycles and gender relations context, understandings of health in context, and cultural context. The theories are more stated in sections that follow hereunder.

2.3.3.1 Lifecycles and gender relations context

As population policy was concerned with fertility control, it centred its intention on women aged 15 to 45 and therefore capable of reproduction (Zurayk, 2001). Thus, as the reproductive health approach emerged, it kept its focus primarily on women in this group,

while transforming its concern from how to control fertility to how to achieve healthy reproduction (Zurayk, 2001). Thus, in order to be effective, the reproductive health approach must expand its concern to women of all ages, that is, those preparing for reproduction and those in reproductive age groups, as well as those who are beyond reproduction (Gasper, 1996). For women beyond 45, reproduction may have ended, but the health consequences of having born children, particularly for those women with high levels of fertility, can be serious (United Nations, 1994). Therefore, the reproductive health approach must not neglect men because they are primary decision makers at all levels of society. They influence fertility decisions, the extent to which contraceptive methods are used, and whether or not women have access to health care.

2.3.3.2 Understanding of health in context

In western countries, ill health is mainly understood and addressed within a biomedical context, so that health is widely understood to be a medical issue (United Nations, 1994). In developing countries, different systems for understanding health and disease may be very widely accepted. Not only do providers then adopt the biomedical approach to recognition and treatment of ill-health condition, but they may also neglect factors in the social context that play a major role in the production of health and ill-health in developing countries (Davidson and Lush, 1995). There is a need, therefore, to broaden the perspective of health providers in developing countries in terms of their awareness of the variety of approaches to ill-health and of the influence of the social context (particularly poverty) on woman reproductive health (Zurayk, 2001).

2.3.3.3 Cultural context

As indicated above, the reproductive health approach emerged at ICDP in 1994 largely as a result of the efforts of women in the western feminist movement. Theorists in developing

countries argue that women reproductive health should be looked contextually because of the existing different cultures (Gasper, 1996). For example, they say, the reproductive health approach emerged at ICPD in 1994 largely as a result of women in the western feminist movement (McIntosh and Finkle, 1995), thus, women from the developing world who participated were mainly situated within the networks created by organisations in that movement. Issues like abortion, female circumcision, and emerging family forms, are really top priority in the minds of women in developing countries, even the activists among them (Zurayk, 2001).

Excess fertility is another concept that has been labeled internationally as a health problem, but that has arguably resulted from a different concern, namely the high rate of population in developing countries (Zurayk, 2001). While recognising the possible health effects on mothers and on children of a large number of births combined with short birth intervals, there is also a need to recognize that having a large number of children can bring happiness and wellbeing to couples, particularly in poor communities. Thus, it is not to argue for high fertility, but to call for cultural sensitivity. Families may choose to have high fertility for their psychological well being (which is certainly part of health), and achieve it in a healthy manner (Zurayk, 2001). The emphasis, therefore, should not be on the large number of children but on whether it is possible to achieve good levels of reproductive health within given resource.

2.4 Status of Research on Women's Empowerment

Empowering women is one of the central issues in the process of development of all developing countries in the world (Hoque and Itohara, 2008). However, according to the World Bank report, women, especially women in the developing world, still have limited roles in household decision-making, limited access and control over household resources

(physical and financial assets), low level of individual assets, heavy domestic workloads, restricted mobility, and inadequate knowledge and skills that lead to women's vulnerability (McIntosh and Finkle, 1995). Thus mainstreaming of women is greatly essential for sustainable rural development.

2.4.1 Research status in Africa

2.4.1.1 Decision making

Over the past two decades, significant commitments to women's participation in decision-making in Africa have been made at the international level. The Beijing Platform for Action in 1995 called on governments to take measures to ensure women's equal access to and full participation in power structures and decision-making (UNDESA and UNDECA, 2007). The outcome document of the twenty-third special session of the General Assembly of the African Union in 2000 reiterated the need to increase the representation of women (SADC, 2004). In 2006, the fifth Session of the Commission on the Status of Women (SCSW) adopted and agreed conclusions on the equal participation of women and men in decision-making processes (UNDESA and UNDECA, 2007).

However, data from the Inter-Parliamentary Union indicates that, on average, women comprise 17% of parliamentarians in SSA as of November 2007, which is about the same as the global average. The figure for Africa is almost six points up, however, in comparison to 2000 when the average was 11.3% (UNDESA and UNDECA, 2007).

On reproductive health decisions women in many African countries are still less autonomous. While lower fertility is commonly associated with women's reproductive autonomy, still men are autonomous over the reproduction of their wives. In Ghana, for instance, husband's education influence more wife's fertility intentions than does her own

education, and the magnitude of the effect of his education increased significantly from 1988 to 1998 (DeRose and Ezeh, 2005). Lower fertility in Ghana seems to be associated more with men's declining fertility desires than with women's increasing reproductive autonomy.

2.4.1.2 Education

The role of education in development is widely recognized in many countries. However, the value placed on formal education differs from one community to the next (Nyamongo, 2000). The value of formal education is based on wage-labour opportunities. For example, in Kenya, high value placed on women's household labour and low accessibility to non-household employment places differential pressure on the education of Borana children (Caldwell, 1986). This leads to a higher dropout rate from school and earlier marriage for female than for the male children.

2.4.1.3 Employment

The percentage of women in employment is very low and this has effect in fertility. Data show that female unemployment in Africa is still high. In Ethiopia, for instance, employed women in 1999 were only 12%. Underemployment is much higher and has become a serious problem in African countries, especially in urban areas (Rosenzweig and Wolpin, 1980). However, African countries are increasingly planning to empower women economically through different ways including women credits. Women themselves have come to see loans as their solution for their development. It was noted by Odutolu, *et al.* (2003) in Nigeria that without the loans it would have been difficult for them to start the businesses they are now managing. These loans have come to provide employment to women.

2.4.2 Research status in Tanzania

Women's empowerment in Tanzania, though earlier started, draws more attention on the CEDEW rights, the ICPD conference, and the Beijing Platform of 1995. Platform for Action of 1995 is a commitment which governments, NGOs, and international organisations have made to advance women, in order to achieve gender equality, human rights, and peace.

The Platform addressed 12 critical areas of concern, namely: women and poverty, education and training of women, women and health, violence against women, women and armed conflict, women and economy, women in power and decision making, institutional mechanisms for the advancement of women, human rights of women, women and the media, women and the environment, and the girl child (URT, 2005). However, Tanzania accorded priority on four broad based critical areas, namely: enhancement of women legal capacity, economic empowerment of women and poverty eradication, women's political empowerment and decision making, and access to education, training, and employment (URT, 2005).

2.4.2 Achievement of the Beijing Platform in Tanzania

2.4.2.1 Enhancement of women's legal capacity

The government has increased legal literacy among women through media and drama; has translated and disseminated the legal information and Land Act Number 5 of 1999 into a user-friendly language (URT, 2005). The government has also established Legal Aid Counseling Centres and put in action several measures to combat violence against women, for instance NGOs' net works to prevent female genital mutilation (FGM) practices.

2.4.2.2 Economic empowerment of women and poverty reduction

The government established National Microfinance Policy in 2000 which provides guideline to achieve gender equity by accessing financial services in order to empower women economically. Various credit facilities such as Small Enterprises Development Agency (SEDA) and Women Development Fund (WDF) are supporting women to access credits for their economic development. Moreover, women are supported to participate in international and local trade fairs and exhibition such as the Mwalimu Nyerere International Trade Fair in Dar es Salaam. The government also has established information resource centres to access market and exchange related information (URT, 2005).

2.4.2.3 Women's political empowerment and decision making

The constitution of the United Republic of Tanzania provides for affirmative action for women's participation in parliament and Local Government Authority (LGA) (URT, 2005). Special seats for women in the parliament increased from 15% in 1995 to 20% in 2000, and from 25% in 1995 to 33.3% in the Local Councils. On the other hand women among Members of Parliament were 21% in 2000 but have reached 30.4% in 2005. This marks the highest rate in East Africa (URT, 2006c).

2.4.2.4 Women's access to education, training, and employment

There is a positive change towards girls' education. In 1996 female enrollment in public ordinary level secondary schools was 44.9% and it was 49.4% in private ordinary level secondary schools. Moreover, data show a willingness of parents to pay for education of girls in secondary schools, a phenomenon which could not be observed in the past. Education trust funds have been established for poor girls to access secondary education. At University of Dar es Salaam, there are programmes to enhance female education

(URT, 2005). For example, the female undergraduate's scholarships programme. This programme enhances the capacity of the university to promote gender mainstreaming with improved female education. As a result of these programmes female student enrolled at University of Dar es Salaam in 2001 constituted 27% and increased to 28% in 2003 (URT, 2006b).

On the other hand the programmes provided at the Vocational Training Institutes (VTI) have provided women with improved skills, which have enhanced the performance, as well as improved status or added value to the jobs they undertake in the small and medium enterprises. In 2001 the females constituted 12.8% of the total enrollment in VTIs, compared to 12% in 1998 (URT, 2006c).

The public service management and employment policy together with the public service regulations have provided an environment for promoting equal opportunities and eliminating discrimination and biases against women. As a result the percentage of employed women in civil service has increased. Employed women in central government were 26.8% in 2005 (URT, 2007). The percentage increased to 29.1% in 2006. In 2005, employed women in Local government were 23.4%. The percentage increased to 25.4% in 2006. In 2007 the regional secretariats comprised 25% women, the judiciary comprised 35% women, and women permanent secretaries were 27.8%. At Local Government Authority level, female decision makers make a significant proportion. The District Executive Directors were 26.4%, and the District Administrative Secretaries were 11.7% (URT, 2007).

2.4.3 Challenges in attaining gender equity in Tanzania

2.4.3.1 Challenges in enhancement of women's legal capacity

Despite government effort to enhance legal capacity, the challenge ahead is availability of effective and sustainable law enforcement mechanisms to ensure full protection of human rights of women. Moreover, the coverage of legal awareness and services has not reached the majority of the people, especially those in rural areas. Thus, there is a need to invest more in awareness creation, training, and provision of paralegal services particularly in the rural area. On violence of women the major challenge is the change of mindset for a positive change among the people. There is a need to enhance the understanding of human rights of women and children (Muro, 2003).

2.4.3.2 Challenges in economic empowerment of women and poverty reduction

The post-Beijing era has seen women taking up the challenges brought about by customs and traditions, which hitherto, prohibited women's participation in economic endeavours. More women engage in informal sector, but the challenge is how to facilitate women to graduate from the informal to formal sector, particularly in the more productive sectors of the economy (URT, 2006c).

Another challenge is the need to enhance capacities to produce enough quality products required by the market. Women have managed to participate in trade fairs and secure orders, but failed to meet large orders due to low production capacities resulting from limited capital that is made available to them. Moreover, how to facilitate access to information and technology to the majority of women especially those in the rural areas is another challenge (URT, 2005). Challenges which remain to be addressed on poverty reduction include, the articulation of poverty issues at the grassroots level, that is, from a gender perspective capacity building interventions at grassroots level to address various

policy issues on poverty reduction and involvement of men and women in influencing policy and programme formulation processes to promote ownership and sustainability (URT, 2006c).

Women involvement in decision making through village committees in rural areas is still low. Research conducted by Kessy *et al.* (2005) in eight villages of Babati district in a community based forest management project indicated that the aggregated gender representative distribution of four village committees in Babati district (the village government, the environmental committee, and the water committee) was about 33% women and 67% men.

2.4.3.3 Challenges in women's political empowerment and decision making

The challenge is to increase the number of women representatives from constituencies. Currently, out of the 63 special seats for women Members of Parliament only 12% are constituencies. The major obstacles have been the low capacity of women to have financial resources required to enable them to compete with men in the elections, and the patriarchal system, which favours men still undermine women's participation in politics (Muro, 2003; URT, 2005). The leadership structure of the opposition political parties is still male dominated since their constitutions do not provide for women quotas. The ruling party, Chama Cha Mapinduzi (CCM) is the only party that has provided affirmative action in respect of their National Executive Committee, which is one of party's policy-making bodies (URT, 2006b).

2.4.3.4 Challenges in women's access to education, training, and employment

Despite achievement in education, the traditional gender stereotyped roles and psychological factors continue to limit girls' access to formal education, especially in higher learning institution. Moreover, women's access to higher levels has always been

constrained by other reasons, such as lack of financial resources and early marriage (URT, 2006b).

The challenge in VTIs is to encourage girls and women to take up non-tradition or male dominated trades. At the same time, more vocational trades need to be established to cater for the female dominated trades. In addition, women who join VTIs offering non-traditional skills such as plumbing, mechanics, and masonry, are still very few (UTR, 2005).

In employment, competitiveness in the labour market limits the participation of women, particularly young women (URT, 2006c). The challenge that remains is the promotion of equal opportunities for men and women, as well as the recognition of the value of the triple roles of women and therefore the mainstreaming of gender concerns in employment practices. The problem also remains in changing the people's mindset, for instance the private sector employers do not often abide by all the standards that promote equality at places of work (URT, 2006b).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Overview

This chapter is divided into five sections. The first section presents the description of the study area including location and justification of its selection. The second section presents the research design, and how the respondents were obtained. The third section describes how data were collected in the field and the tools used for data collection. The fourth section presents sampling strategies where sampling strategies for Focus Group Discussions (FGDs) and sampling strategies for questionnaire survey are given. The fifth section describes how the data were processed, analysed, and the methods that were employed for analysis in particular areas.

3.2 Description of the Study Area

3.2.1 Geographical location

The study was conducted in Igunga district, Tabora region. Igunga district forms the six districts in Tabora region. Other districts include Tabora urban, Uyui, Urambo, Nzega and Sikonge. The district, with a total area of 4 499 square kilometers, lies between latitudes $3^{\circ} 51'$ and $4^{\circ} 48'$ south of equator and longitudes $33^{\circ} 22'$ and $34^{\circ} 8'$ east of Greenwich. It shares the borders with Kishapu district of Shinyanga region to the north, Iramba district of Singida region to the east, Nzega district to the west, and Uyui district to the south (Fig. 2).

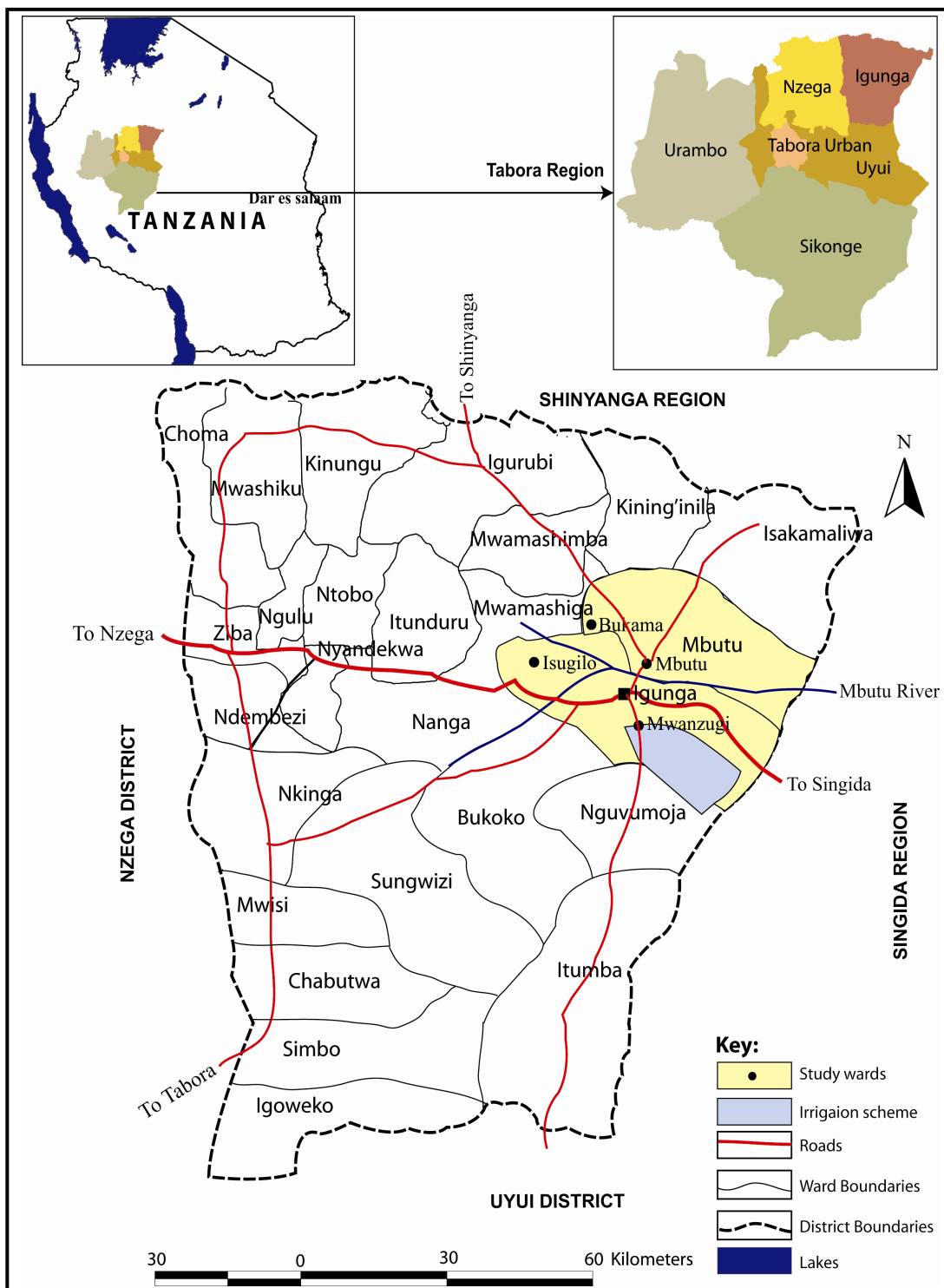


Figure 2: Map of Igunga District

3.2.2 Population

Igunga district has 4 administrative divisions, 26 wards, 96 villages, and 637 hamlets with a total population of 324 094 people where 158 817 are males and 165 277 are females (URT, 2002).

3.2.3 Justification

Igunga district was purposely selected for study because of two main reasons. Firstly, it has high fertility rate of 7.7 children per woman. This rate is high compared to the country's fertility rate of 5.7 per woman (URT, 2003; NBS, 2009). Secondly, total fertility rate (TFR) in the area is rising while the national TFR is falling. The trend of Tabora region shows that in the national population census undertaken in 1967 TFR was 5.5 but for the following census it rose as follows: 1978 (6.2), 1988 (6.4) and 2002 (7.7) (NBS, 2009).

3.3 Research Design

This study used a cross-sectional research design. Unlike retrospective and longitudinal research designs, cross-sectional research design allows data to be collected at one point in time (Bernard, 2006) cited by Mbwambo (2007). The design employs a survey method. This can be used to establish relationship between variables for the purposes of testing hypothesis and is feasible as it uses minimum time and resources. The limited time justifies the use of the selected design.

3.4 Methods of Data Collection

The study intended to interview 120 women respondents as it focused more on obtaining their domestic and reproductive related information. Qualitative and quantitative data were collected from women of age 15–49 years. For simplicity and avoidance of missing crucial information female interviewers were used by the researcher to easily obtain liable

information related to domestic and sexual and reproductive issues from respondents. For primary data, interviewers passed through the sampled households interviewing the respondents in their homes. Secondary data were obtained by consulting different published and unpublished documents from different sources. Main sources included Igunga district profile, regional libraries, the internet cafes and Tanzania Demographic and Health Surveys (TDHSs).

3.4.1 Qualitative data collection

3.4.1.1 Focus group discussion (FGDs)

In order to capture enough information related to women's empowerment and fertility in the study area the FGDs were adopted. There were two FGDs in each village. Each group comprised about 8 – 12 participants (Hardon *et al.*, 1994); one group was for men and the other was for women to allow full participation. The main and assistant researchers used guiding questions to lead the discussions which simplified the coding process for data analysis.

3.4.1.2 Interview guide/check list

Set of questions were asked to workers of community development and health sectors to capture important information related to household and sexual and reproductive health empowerment, respectively. Checklists were administered to allow coding and analysis of data collected.

3.4.2 Quantitative data

Questionnaire survey was employed to collect quantitative data from women. Specific techniques were used for each specific objective.

3.4.2.1 Data collection for objective one

Objective one focused on identifying the fertility level in the study area. The important question asked to this objective was: what is the average number of children born per women in the study area? Structured interview using close ended questions were applied. The interviewers met the respondents in their households and asked them to state their number of live births throughout their reproductive ages and the time of their last births, to state the sex of the children ever born by them regardless of whether they were living with them or were away, whether they had died or were still alive.

3.4.2.2 Data collection for objective two

Objective two focused on examining the socio-economic and cultural factors as determinants of fertility. The important question asked to this objective was: how have socio-economic and cultural factors affected fertility in the study area? The questionnaire based on socio-economic factors (income, education, and occupation) and socio-cultural factors (sex preference and value of children). Questions focused on investigating how these factors had affected fertility in the study area.

3.4.2.3 Data collection for objective three

Objective three focused on determining the extent of women's domestic and sexual and reproductive empowerment and processes and programmes being implemented by different institutions in the study area: the government (health and community development sectors), civil societies and the community. The important question was: are there programmes or activities related to women's domestic and sexual and reproductive health empowerment in the study area? A combination of structured interview and FGDs was employed to capture much information. More over workers in the health sector and community development sector were interviewed to obtain information concerning efforts they make to empower women.

3.4.2.4 Data collection for objective four

Objective four intended to assess the relationship between women's empowerment and fertility in the study area. The important question was: what is the relationship between women's empowerment and fertility in Igunga district? The questions focused mainly on specific five measures of women's empowerment stated in the conceptual framework (Fig. 1) of this study as proxies of women's empowerment. These measures are household economic decision making, mobility, coercive control, contraceptive use, and family size decision making.

1. Household economic decision making

This measure is a six-point scale concerned with women's say in household economic decisions. It intended to investigate the level of women's say on household economic decisions. First, making purchases of household major items such as ox-plough, ox-cart and cattle, and small items such as own dresses, clothes, shoes, and household utensils like plates and knives, without seeking permission from their husbands or household members. Second, if women could work outside the homes. Third, the participation of women on deciding on what type of crop and intensity to cultivate in a given year, and fourth, if women were free to lend family properties like *panga*, and knives to neighbours or close relatives without permission from husbands or family members. Scores ranged between zero, for women with no say and six, for women with most say.

2. Mobility

This measure is a five-point scale concerned with women's freedom of movement (mobility). It has five questions intending to obtain information related to women's mobility on visiting different places without seeking permission from their husbands or family members, that is, if women could go to the village centre, the local market, the local

health clinic, the fields near the village, or the homes of friends or relatives without first obtaining permission from the husband or a senior member of the family. Scores ranged from zero to five points. Women who scored zero points could not go to any of these places without obtaining permission, while those with five scores could go to all of them without permission.

3. Coercive control

This is a three-point scale measure of women's exposure to coercive control by the husband through two items. The first item asked whether women were afraid to disagree with their husbands for fear they would become angry with them. It was assigned one point for women who were not afraid from differing with their husbands and zero point for those who were afraid. The second item asked them if their husbands ever hit or beat them. It was assigned two points for none ever hit women and zero point for ever hit women. Total zero score implied absence of coercive control while total score of five points implied high coercive control.

4. Contraceptive use

This is a six-point scale measure of women's knowledge on family planning and sexual and reproductive health related issues including level of contraceptive use. It has four questions intending to find, first, if women had heard of any traditional or modern birth control methods, second, if they had used or were current users of contraceptives for birth control, three, if they used them overtly or covertly, and fourth, if they had received any sexual and reproductive health education from health workers or from any organisation/institution. Scores ranged from zero point for women who were completely unaware and none contraceptive users and six points for women who had better knowledge and were overt users of contraceptives.

5. Family size decision making

This is a six-point scale measure intending to investigate on women's say in family size decision making. It has questions on whether women had any say in their sexual and reproductive health related matters. The questions focused on who had the greatest say in deciding the number of children to bear, if the women discussed and agreed with their husbands to do sex, when to conceive and ideal number of children to bear. The scores ranged from zero point, for women with no say and six points, for women with the most say.

3.5 Sampling Strategy

3.5.1 Sampling strategy for FGDs

In order to capture women's empowerment and fertility related information men and women were selected for FGDs. The study conducted two FGDs in each village, one for men and the other for women. Each FGD had 8-12 participants selected from the village registers by the researcher by assistance of VEOs and village chair persons. In order to reduce bias in selecting the participants a random sampling method was employed.

3.5.2 Sampling strategy for questionnaire survey

The total sample comprised of 120 married and unmarried women (respondents) of age between 15 – 49 years. This is the reproductive age in Tanzania (URT, 2006a). Information from this age group was considered to be liable. Purposive and simple random sampling techniques were used to determine cases to be involved in the study and respondents were obtained through four stages elaborated in Fig. 3.

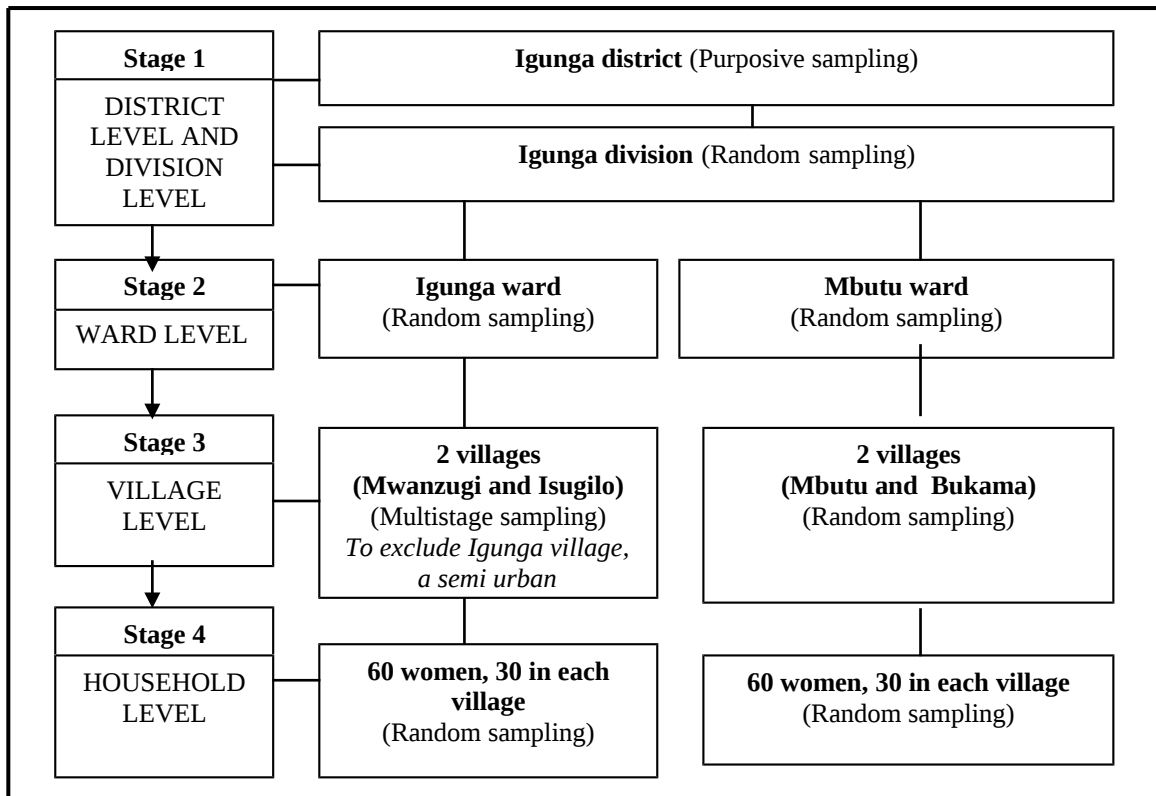


Figure 3: Selection of the sample for in-depth interview

The first stage was to select the study area at district level and division level. The purposive technique was employed at district level while at division level the random sampling method was employed. The reasons for the purposive sampling at district level have been justified and clearly stated in section 3.2.3. The second stage was to obtain two wards. In this stage random sampling was employed to obtain two among all wards in the district.

The third stage was to select four villages in which two methods were employed; purposive and random sampling methods. Purposive sampling method was employed in selecting the two villages in Igunga ward to exclude Igunga village, a semi urban ward (URT, 2005). Mwanzugi and Isugilo villages were selected. Inclusion of Igunga village in the study would not give liable data of the study which focuses mainly on rural societies. Random

sampling was employed to obtain two villages in Mbutu ward where Mbutu and Bukama villages were obtained.

The fourth stage was to select the 120 respondents from 120 pre-selected households, that is, 30 women in each village. Random sampling method was employed. However, the exercise was repeated for cases where the selected households had no woman to be interviewed. The pre-selection of the households was done in collaboration with VEOs and village chair persons. After random selection of the respondents the village leaders informed the respondents of the coming exercise to make them ready for in-depth interview.

3.6 Methods of Data Analysis

Prior to analysis, qualitative data were processed, categorized, summarized and presented in a tabular form. Common and agreed points or views by all discussants from the FGDs were listed in point form, summarized, and coded to resemble to quantitative data to facilitate analysis as it is stated by Hardon *et al.* (1994). Quantitative data were verified, coded and transferred to the computer code sheet for process, frequency and percentage. This involved computer data entry, using Statistical Packages for Social Science (SPSS) 12.0 programme, followed by data editing and cleaning.

3.6.1 Qualitative data analysis

The qualitative data were analysed by summarising the attitudes or opinions of discussants recorded in the FGDs by the interviewers. The analysis employed an ethnographic approach. That is, relying on the direct information given by the respondents according to the themes used during the discussion. On FGDs, the group and not the number of participants, is the main unit of analysis (Mwageni, 1996). To a large extent, the findings

provided refer to the conclusions reached by each group on a particular theme of discussion.

3.6.2 Quantitative data analysis

Quantitative data were analysed by employing three levels; namely, univariate analysis, bivariate analysis and multivariate analysis. A brief description of each of these levels is given in the following sections.

3.6.2.1 Univariate analysis

Information relating to each variable was analysed by using univariate analysis. The aim is to show the socioeconomic and demographic characteristics of the respondents. Simple measures of frequency distribution, central tendency, and dispersion were applied. These measures, testing using the chi-squares, were employed to show how the sample is distributed in the various categories so as to provide a summary of distribution of the variables.

3.6.2.2 Bivariate analysis

At this level data relationships were developed and examined, by making an association between background as well as explanatory variables and fertility level, the dependent variable. To achieve this, some variables were measured after combining them into specific scales. Bivariate analysis used cross tabulations between variables; mostly between the independent variables and the dependent variable. Moreover, cross tabulation was used between the combined effects of some independent variable (scales) and the dependent variable.

3.6.2.3 Multivariate analysis

Multivariate analysis was used to analyse the data mainly for four purposes. Firstly, to explore which variables have the strongest relationship with fertility level in the study area. Secondly, to indicate which independent variables have the greatest impact on fertility level in the study area. Thirdly, to determine which variables can predict women's fertility, and fourthly, to assess the accuracy of the influence of the explanatory variables in predicting women's fertility level.

3.6.3 Data analysis for objective one

Objective one intended to document the fertility level of the study area. Direct computation was used in analysing fertility. The measures of current fertility levels used by the study are age specific fertility rates (ASFRs), total fertility rate (TFR), and mean number of children born (MNCB).

ASFRs are defined in terms of the number of live births during a specified period to women in the particular age group divided by the number of woman years lived in that age group during the specified period (NBS, 2005). The usual definition is given as ASFR = Births in year to women aged x /women aged x at mid year. Age specific fertility rates (ASFRs) are expressed per 1000 women, and are calculated one for each five-year age group; 15 – 19, 20 – 24 ... 45 – 49. TFR is obtained by summing the age-specific fertility rates and multiplying by five. However, while ASFRs are expressed per 1000 women, TFR is expressed per one woman, and then it is necessary to divide by 1000. The given formula is: $TFR = \sum ASFRs * 5 / 1000$ (1)

Where; TFR, a total fertility rate expressed as per thousand women, $\sum ASFRs * 5 / 1000$ a sum of all age specific fertility rates multiplied by years of women in that group, that is,

five years. MNCB is the average number of children born by all women in a given population. In this case a direct calculation was adopted. MNCB is a result of the mean number of children ever born (MNCEB) which is the measure of life time fertility as it reflects the accumulation of births over the past thirty years to the woman interviewed in the survey (Newell, 1988).

3.6.4 Data analysis for objective two

Objective two aimed at examining socioeconomic and cultural determinants of fertility in the study area. Socioeconomic factors include education, occupation, and income of woman expressed in asset index. For women income the PCA method was employed to construct a smaller set of uncorrelated components of women assets.

The PCA identifies items that tap the same concept as well as creating a smaller number of factors that co-vary. The components which show a reasonable proportion of overall variance are usually extracted for subsequent use of other statistical analysis (Mwagani, 1996). PCA involves several steps. The first step is to identify the variables for PCA. In this study assets for woman income include land, iron corrugated sheet house, mud thatched house, ox-cart, plough, cattle, goat, sheep, chicken, bicycle, sewing machine, and radio. The second step is to develop a correlation matrix in order to determine whether the variables are significantly correlated with each other. The third step is to select the variables by obtaining a factor loading index for each of the variables. The index obtained shows which items are highly correlated to the factors. Usually variables that load highly are selected while those load weakly are dropped. The fourth step involves the construction of new variables. The results of PCA are usually used to construct weighted factor based scale. The factor loadings obtained are multiplied by the individual score for each corresponding variable (Mwagani, 1996). The estimates are given in the formula:

$$A_j = f_1 x(a_{j1} - a_1) / S_1 + \dots + f_N x(a_{jN} - a_N) / S_N \dots \dots \dots (2)$$

Where:	A_j	Welfare index value
	f_i	Scoring factor or weights factors for the i^{th} item
	x	The variable (asset or service)
	a_{ji}	The value of the i^{th} asset (or service) the household owns or value of the i^{th} housing materials
	a_1	Mean of assets (or service) or mean of housing materials
	S_i	Standard deviation of assets (or service)

For socio-cultural factors responsible for fertility levels, which, in this study, are sex preference and value of children, the study used Coomb's scale to measure women's preference on either sons or daughters and Likert scale, respectively. Women's preference on sons or daughters was measured by Coomb's scale which is a scale of 1 to 5+ points showing preference in sons to daughters and vice versa, or a balance of sex, that is, 1-3 = girls bias, 4 = balance, 5+ = boys bias (Mwageni, 1996). Value of children was measured by the number of points scored by respondent on Likert scale composed of statements implying the attitudes towards the cost and value of children.

3.6.5 Data analysis for objective three

Objective three was analysed by using women's empowerment proxies which are clearly defined in section 3.4.3. The study assumed that these women's empowerment proxies (or measures of empowerment) as used by the study would measure the extent of women's empowerment in the study area. The proxies have different scales through which women scores were used to ascertain or determine whether women were empowered or not in the particular area.

3.6.6 Data analysis for objective four

In analysing the data collected on this objective the multiple regression model was used to account for the variance in the dependent variable (fertility). Set of independent variables

explains a proportion of the variance in a dependent variable at a significant level (significance test of R^2). The model is dependent upon women's empowerment. The multiple regression equation of the fertility behaviour is given in equation 3.

$$\text{fert} = \beta_0 + \beta_1 \lnage + \beta_2 \text{agem} + \beta_3 \text{ageb} + \beta_4 \text{mstat} + \beta_5 \text{edu} + \beta_6 \text{occp} + \beta_7 \text{inco} + \beta_8 \text{ecodec} + \beta_9 \text{fasdec} + \beta_{10} \text{coerc} + \beta_{11} \text{green} + \beta_{12} \text{mob} + e \dots \dots \dots (3)$$

Where:	fert	Number of children born per woman
	lnage	A woman's age in log form
	agem	Age at first marriage
	ageb	Age at first birth
	mstat	Marital status
	edu	Education level
	occp	Main occupation
	inco	Income (asset index)
	ecodec	Participation in household economic decisions
	fasdec	Participation in family size decisions
	coerc	Coercive control(control of coercion from husband)
	green	Contraceptive use
	mob	Mobility (freedom of movement)
	β	Regression coefficient explaining importance of variables
	e...	Error term

The dependent variable is the number of children born per woman. The independent variables include woman's age, age at first marriage, age at first birth, education level, income, occupation, woman's ability to visit places without seeking permission from husband or other family members (mobility), her participation in household economic decisions, her participation in family size decision such as decision on doing sex with her partner, the time for conception and number of children to bear, her knowledge of family planning and her status in contraception, her coercion control, that is, living free from afraid of differing with her husband and without being hit by him.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSIONS

4.1 Overview

This chapter presents results of both qualitative and quantitative data collected through methods described in chapter three. The chapter is divided into five sections. The first section presents the demographic and socioeconomic profiles of the respondents. This is very important in demographic understanding of the population to be studied. In this section the socioeconomic factors for fertility are presented. The second section presents the fertility status of the study area. In this section the measures of fertility level employed by this study are presented. Moreover, the comparison between the survey and national status are presented. The third section presents the results of socio-cultural determinants of fertility in the study area, that is, value of children and sex preference. The fourth section presents the extent of women's empowerment in the study area. In this section measures of empowerment adopted by the study have been used to describe the extent of women's empowerment in the study area. The fifth section presents the relationship between women's empowerment and fertility whereby the regression model has been used to test the contribution of each variable to fertility.

4.2 Demographic and Socioeconomic Characteristics of the Respondents

This section presents the background and explanatory variables. They include; age, marital status, education level, household size, age at first marriage, age at first birth, main occupation, and income in asset index. Table 2 presents the summary of the findings.

Table 2: Demographic and socioeconomic characteristics of the respondents

Characteristics	Name of village				Total (N =120)
	Mwanzugi (n =30)	Isugilo (n =30)	Mbutu (n =30)	Bukama (n =30)	
Age					
< 24 years	10.0	23.3	13.3	13.3	15.0
24 - 33 years	40.0	26.7	46.7	36.7	37.5
34 - 45 years	40.0	43.3	36.7	40.0	40.0
> 45 years	10.0	6.7	3.3	2.5	7.5
Marital status					
Married	66.7	80.0	70.0	73.3	72.5
Divorced	13.3	6.7	20.0	10.0	12.5
Widowed	6.7	6.7	6.7	6.7	6.7
Single	13.3	6.7	3.3	10.0	8.3
Education level					
None formal	26.7	63.3	30.0	40.0	40.0
Primary	50.0	26.7	60.0	53.3	47.5
Secondary	23.3	10.0	10.0	6.7	12.5
Household size					
< 4 members	13.3	0.0	10.0	13.3	9.2
4 – 6 members	60.0	43.3	63.3	23.3	47.5
7 – 10 members	23.4	23.4	23.4	60.0	38.3
> 10 members	3.3	3.3	3.3	3.3	5.0
Age at first marriage					
< 15 years	6.7	40.0	30.0	10.0	21.7
15 – 20 years	56.7	60.0	53.3	83.3	63.3
21 – 26 years	33.3	0.0	10.0	6.7	12.5
> 26 years	3.3	0.0	6.7	0.0	2.5
Age at first birth					
< 16 years	3.3	13.3	30.0	6.7	13.3
16-20 years	50.0	76.7	60.0	80.0	66.7
21-25 years	43.4	10.0	6.7	13.3	18.3
> 25 years	3.3	0.0	3.3	0.0	1.7
Main occupation					
Farming	63.3	86.7	86.7	83.3	80.0
Civil service	23.3	10.0	6.7	6.7	11.7
Business	13.3	3.3	6.7	10.0	8.3
Income (asset index)					
Poorer women	43.3	43.3	33.3	20.0	35.0
Poor women	43.3	20.0	30.0	30.0	30.8
Rich women	13.3	36.7	36.7	50.0	34.2

4.2.1 Ages of respondents

Age, especially age of woman is among the most important demographic variables in determining fertility. The study focused on the reproductive age group of women aged 15-49 years. The mean age of all respondents is 34.7 years whereas the minimum and maximum ages are 18 and 49 years, respectively. However, the age distribution of respondents is presented in four categories as indicated in Table 2 to facilitate comparison between this study and other studies. Results in Fig. 4 show that majority (40%) of respondents was at age group 34 – 45 years and very few (7.5%) were above 45 years. The

findings imply that fertility in the study area was more contributed by age group 34 – 45 years. However, respondents of age above 45 years were few because the age limit of the sampled population was 49 years, that is, the reproductive age in Tanzania.

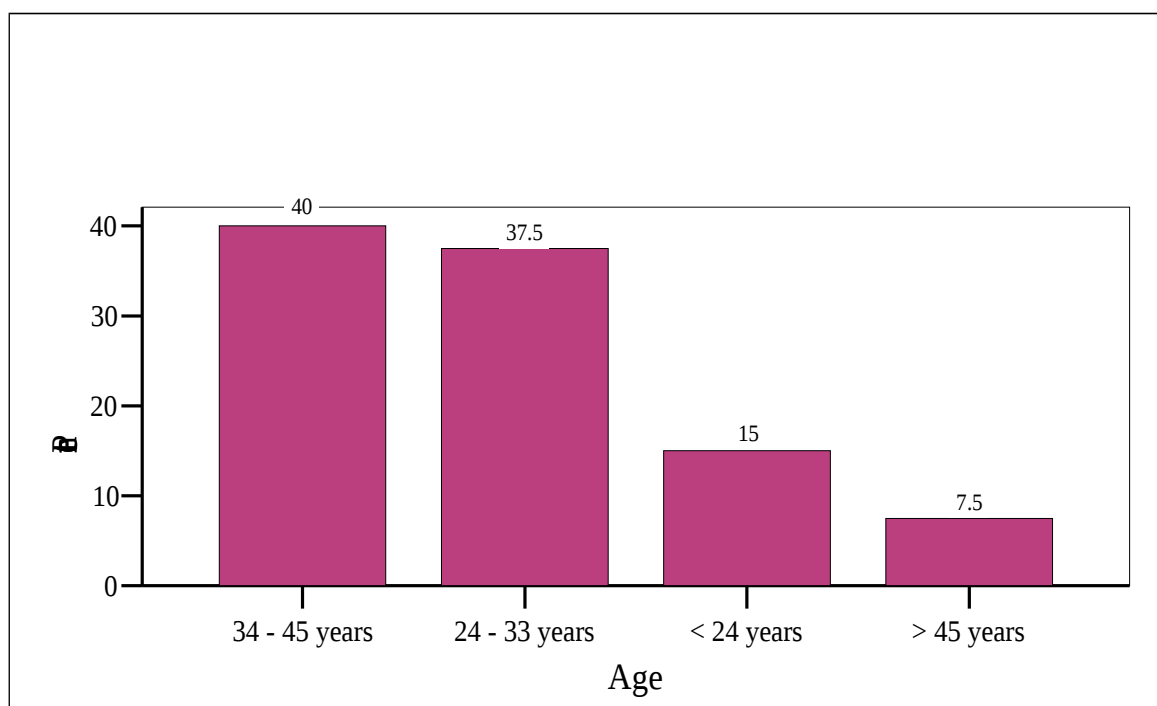


Figure 4: Age distribution of respondents

Results in Table 3 show that more than three quarters of respondents were in age groups 24-33 and 34-45. However, it was different in Isugilo and Mwanzugi villages. While there were more women aged below 24 years in Isugilo there were more women aged above 45 in Mwanzugi. This implies that the highest contribution to fertility in the study area comes from Isugilo village and lowest from Mwanzugi village.

Table 3: Age of respondents by village

Age category	Name of village				Total (%)
	Mwanzugi (%)	Isugilo (%)	Mbutu (%)	Bukama (%)	
< 24 years	10.0	23.3	13.3	13.3	15.0
24 – 33 years	40.0	26.7	46.7	36.7	37.5

34 – 45 years	40.0	43.3	36.7	40.0	40.0
> 45 years	10.0	6.7	3.3	2.5	7.5
Total	100.0	100.0	100.0	100.0	100.0

4.2.2 Marital status

Marital status as defined in this study is the state of been or not been married to someone. Respondents in the study area were the married, divorced, widowed, and single women. Results in Fig. 5 show that majority of respondents (72.5%) were married women. The rest were divorced, widowed, and single. This very large percentage of women in marriage implies that there is very big proportion of women in sexual relations in the study area. One of the prominent determinants of fertility is the proportion of women in sexual relations (Mturi and Hinde, 2001). Thus, with this proportion one may predict a high fertility level in the study population.

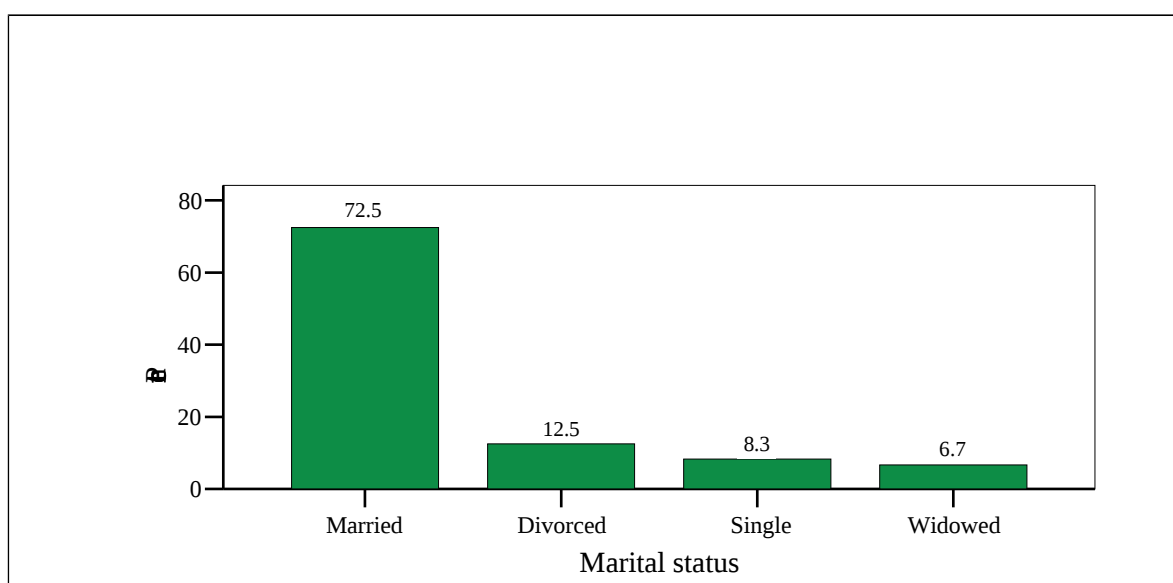


Figure 5: Marital status of respondents

Table 4 presents the percentage distribution of marital status by village and indicates that more married women were in Isugilo village than in other villages, more single women were in Mwanzugi village, and more divorced women were in Mbutu village.

Table 4: Marital status of respondents by village

Marital status	Name of village				Total (%)
	Mwanzugi (%)	Isugilo (%)	Mbutu (%)	Bukama (%)	
Married	66.7	80.0	70.0	73.3	72.5
Divorced	13.3	6.7	20.0	10.0	12.5
Widowed	6.7	6.7	6.7	6.7	6.7
Single	13.3	6.7	3.3	10.0	8.3
Total	100.0	100.0	100.0	100.0	100.0

The variation of this marital status in the study area is partly explained in section 4.2.1 on the aspect of age at first birth. As there were more women at age 34 – 45 years in Isugilo it is possible that they were married. Mwanzugi village had more single women because it is a business center. There is rice irrigation scheme in Mwanzugi village and many people immigrate from other areas for rice cultivation in the irrigation scheme. The crop is highly produced due to high demand from different people in and out side the country.

4.2.3 Education

Education in developing countries is the most important tool to development and one of the stronger determinants of fertility. Results in Fig. 6 show that majority of women (47.5%) in the study area had primary education.

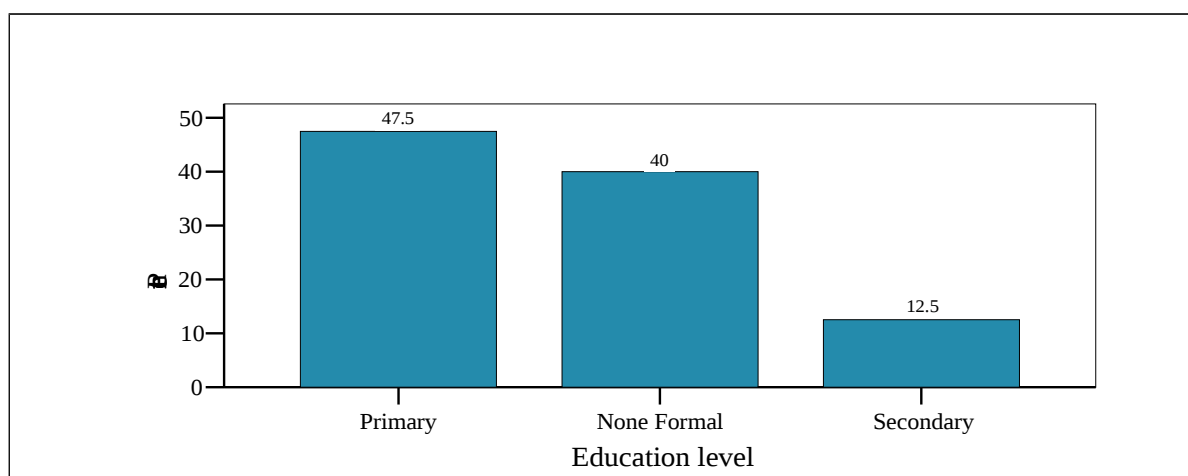


Figure 6: Education level of respondents

They were followed by none formal educated women (40%). This implies that literacy level in the study area is higher when compared to regional level. According to URT (2007), Tabora region profile shows that people with none formal educations are about 48%, dropouts (12.1%), primary education (36%), and secondary education (2.7%). However, the large variation of these results is caused by the inclusion of civil servants mainly primary teachers in the study population who were actually educated. The geographical distribution shows that Mwanzugi and Mbutu villages were relatively better off while Isugilo was worse off. While Mwanzugi village had 23.3% women with secondary education Isugilo was the most illiterate village as 63.3% of interviewed women in the village had non formal education as indicated in Table 5. The reason for this variation is that Mbutu and Mwanzugi villages are very closer to Igunga town and that Mbutu village is older than all villages including Igunga town. It became a business center before independence in 1961. The rice irrigation scheme in Mwanzugi village has increased the value of education to people due to social interactions, as different people come from different areas for rice production.

Table 5: Education level by village

Education level	Name of village				Total (%)
	Mwanzugi (%)	Isugilo (%)	Mbutu (%)	Bukama (%)	
None formal	26.7	63.3	30.0	40.0	40.0
Primary	50.0	26.7	60.0	53.3	47.5
Secondary	23.3	10.0	10.0	6.7	12.5
Total	100.0	100.0	100.0	100.0	100.0

4.2.4 Household size

Intending to relate fertility and the number of household currently residents the study investigated the average household size in the study population. Results in Fig. 7 show that nearly half (48%) and 38.3% of the respondents' households had 4-6 and 7-9 members, respectively, including wife and husband or woman and household head. Moreover the study found that the average household size was 6.5 (with SD = 2.46) the minimum and maximum being 2 and 16 household members, respectively. This household size is higher compared to national average household size in rural areas which is 4.9 (URT, 2007). Several factors are considered to have attributed to large household sizes in the study area. First, low levels of schooling observed in the study area have a remarkable contribution to household sizes. As the youth complete primary education and fail to continue with secondary education they stay at home and later marry while still at home.

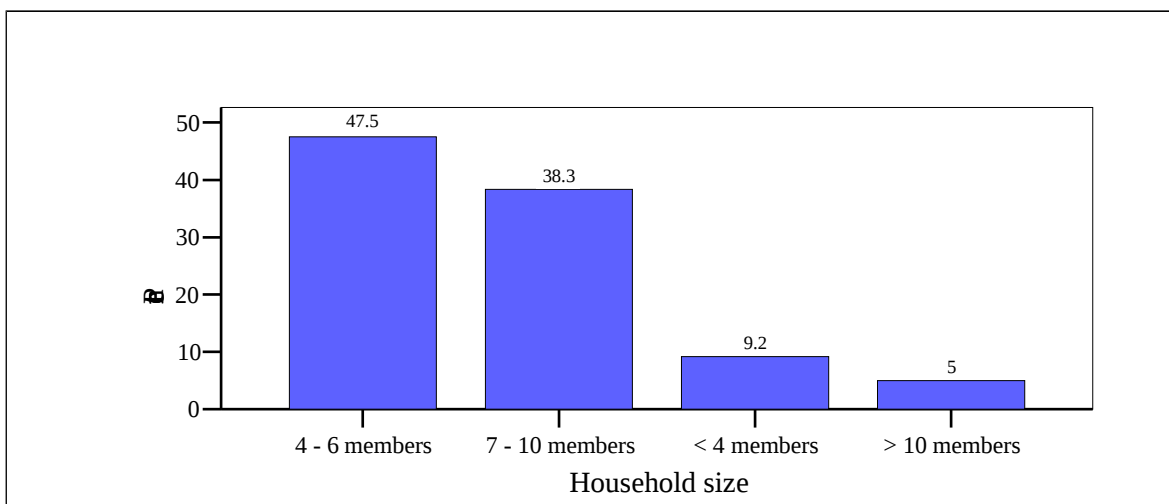


Figure 7: Household size of respondents

Second, high fertility observed in the study area as it is indicated in section 4.3 contributed to the large household sizes. High fertility, to large extent, is a result of low education level. Knowledge of family planning and contraceptive use help to lower fertility as there is high correlation between education and contraceptive use (Ayoub, 2003). Prevalence in contraceptive use among educated women is high.

The third factor is the extended family life mostly found in rural areas. This contributes much to the household sizes. Results in Table 6 more show that Bukama village had many residents per household as 60% of the households had 7-10 residents. Besides fertility, the extended family life contributed to this variation. The village is far from Igunga headquarters compared to the other three villages, thus, the cultural practices which favour extended family are still common. However, a large household size can not be directly considered to have attributed to high fertility. This is because in most cases household size does not influence fertility, rather, fertility influences larger household sizes.

Table 6: Household size by village

Household size	Name of village				Total (%)
	Mwanzugi (%)	Isugilo (%)	Mbutu (%)	Bukama (%)	
< 4 members	13.3	0.0	10.0	13.3	9.2
4 - 6 members	60.0	43.3	63.3	23.3	47.5
7 - 10 members	23.3	23.3	23.3	60.0	38.3
> 10 members	3.3	3.3	3.3	3.3	5.0
Total	100.0	100.0	100.0	100.0	100.0

4.2.5 Age of women at first marriage

As it was explained in section 4.2.2 above, marital status of women is important in studying fertility behaviour as it determines the proportion of women in sexual relations. However, it is important to note that this proportion is increased or reduced by age of

woman at first marriage. The period in which a woman stays in marriage may determine her fertility. Early marriage makes women prone to high fertility because of low education level, thus, they are ignorant and can not resist coercion from their husbands who, in most cases, have higher desire for many children. A woman who enters marriage earlier may reproduce many children than who enters later. In the study area majority women enter the marriage very early. Results in Fig. 8 show that more than three quarters married at age below 21 years and, among them, 21% married at age below 15 years.

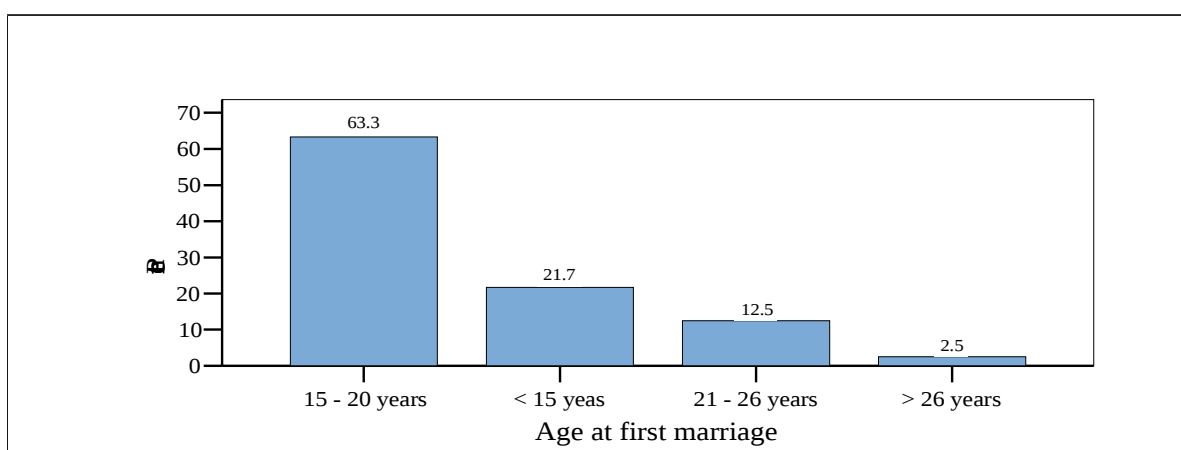


Figure 8: Age of women at first marriage

This is the age before or just after completion of primary education level in Tanzania.

Early marriage can be associated with low education. Thus, women who lack education are at risk of early marriage and can also experience their first children at their low ages. This situation provides high chances of higher fertility rates simply because of lack of knowledge in family planning methods and inability to coercive control. Table 7 presents the percentage distribution of age of women at first marriage by village. Like on marital status explained in section 4.2.2 it was observed that Isugilo and Bukama villages had higher percentage of early marriage compared to other villages. All ever married women (married, widowed, and divorced) interviewed in Isugilo village and 93.3% of them in Bukama village, married before age 21 years. However, Mwazugi village married off the daughters very late. These variations are caused by differences in the levels of education explained in section 4.2.3.

Table 7: Age at first marriage by village

Age at first marriage	Name of village				Total (%)
	Mwanzugi (%)	Isugilo (%)	Mbutu (%)	Bukama (%)	
< 15 years	6.7	40.0	30.0	10.0	21.7
15 – 20 years	56.7	60.0	53.3	83.3	63.3
21 – 26 years	33.3	0.0	10.0	6.7	12.5
> 26 years	3.3	0.0	6.7	0.0	2.5
Total	100.0	100.0	100.0	100.0	100.0

4.2.6 Age at first birth

One of the proximate determinants of fertility is the proportion of women in sexual relation. The age at which a female gives birth to her first child is important for determining her fertility. The lower the age at first birth the higher is the risk of having many births. Results in Fig. 9 show that more than two third of respondents had given birth at age between 16 and 20 years. Moreover, 13.3% had given birth at age below 16 years implying that many women in rural areas do not complete primary education or do not attend secondary education. Moreover, age at first birth has high contribution to fertility in the study area.

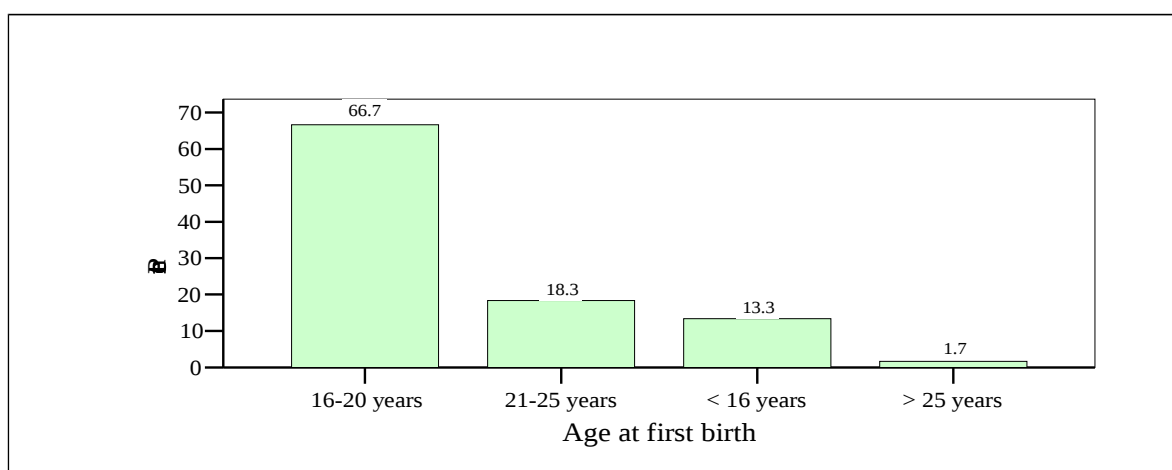
**Figure 9: Ages of respondents at first birth**

Table 8 presents the age categories of women at their first births by village. Results show that Mwanzugi village alone had relatively low percentage of women who gave birth at age below 21 years. The reason is simply the high percentage of educated women in the village. Mbutu and Isugilo villages each had about 90% of women who had given birth at age below 21 years. This implies that women in the study area enter sexual relations very early. Findings from TDHS in 2004-05 show differentials in age at first birth. Median age at first birth for women age 25-49 was 19.4 with little variation in age at first birth by background characteristics. In the northern zone, median age at first birth for women age 25-49 is 20.1 years, or 1 year higher than in the Southern and lake zones (NBS, 2005). As women give birth at that age they are likely to have lost their opportunities for secondary education, thus, they are at risk of reproducing many children due to low access to family planning methods and longer period they stay in sexual relations.

Table 8: Age at first birth by village

Age at first birth	Name of village				Total (%)
	Mwanzugi (%)	Isugilo (%)	Mbutu (%)	Bukama (%)	
< 16 years	3.3	13.3	30.0	6.7	13.3
16-20 years	50.0	76.7	60.0	80.0	66.7
21-25 years	43.4	10.0	6.7	13.3	18.3
> 25 years	3.3	0.0	3.3	0.0	1.7
Total	100.0	100.0	100.0	100.0	100.0

4.2.7 Main occupation

Looking at the main occupation the study found that farming was the main occupation of the women in the study area comprising 80%. The rest were combining business (petty trade) and civil service as indicated in Fig. 10.

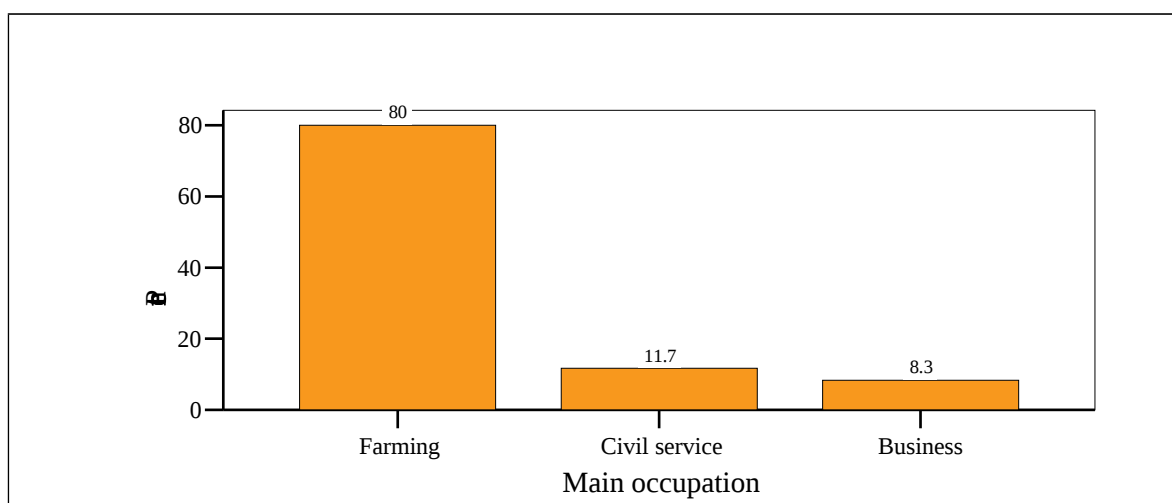


Figure 10: Main occupation of respondents

This is the tendency in Tanzania where rural inhabitants find most of their livelihoods from farms (Mbwambo, 2007). Agriculture production was mainly both food and cash crops. Main food crops include maize, sorghum, sweet potatoes, and rice, whereas cash crops include cotton, sun flower and ground nuts. Livestock keeping is also the main activity in the area. Some farmers keep large groups of animals which, some times, force them to undergo a transhumance during the dry season. Petty trade includes carpentry, sale of local brew and grain. This implies that many women engage in farming which is typical of a rural area in which the dominant occupation is farming and women as chief producers of food.

The geographical distribution of respondents shows that all four villages were dominated by farmers. Table 9 presents the main occupation of the respondents in the area and indicates that civil servants were relatively more in Mwanzugi village than in other villages. This percentage is likely to effect a fertility variation due to low fertility always experienced in the civil servants who, in most cases, have high education levels.

Table 9: Main occupation by village

Occupation	Name of village		Total

Farming	60.0	83.4	76.7	76.7	74.2
Business/petty trade	13.3	3.3	10.0	13.3	10.0
Civil service	26.7	13.3	13.3	10.0	15.8
Total	100.0	100.0	100.0	100.0	100.0

Despite that Mwanzugi village has rice irrigation scheme women in this village were not fully taking part since the production costs are very high because of increasing demand of rice. Better market has pulled in many traders (mostly well off) and civil servants to engage in rice production by use of capital, hence poor women can not afford these costs.

4.2.8 Income

Income in this study is defined in assets owned by women. Intending to reveal the wealth of the women in the study area for the purpose of developing a relationship between income and reproductive behaviour the study investigated the asset ownership among respondents. The ownership of household items may be taken as an approximate measure of a household's wealth or in other words an indicator for poverty monitoring (URT, 2006a). The question concerning ownership of assets by households restricted itself to twelve main items; namely, land in acreage, corrugated iron sheet houses, grass thatched houses, oxcarts, ploughs, cattle, goats, sheep, chickens, bicycles, sewing machines, and radios.

The study expected that respondents would be reluctant in mentioning their real annual income due to difficulty in remembering their income as a result of lack of record keeping experienced in most people. Thus, PCA method, through equation 2 clearly stated in section 3.6.4 of chapter three was employed to determine the wealth of respondents. Results in Table 10 show the percentage ownership of women assets and their dispersion.

Table 10: Index of assets owned by women

Asset	Percentage ownership	Mean	SD
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Land (acres)	15.0	0.75	2.370
Iron corrugated houses	7.5	0.08	0.322
Grass thatched houses	5.9	0.11	0.426
Ploughs	0.0	-	-
Ox-carts	0.0	-	-
Cattle	5.0	0.61	2.374
Goats	35.0	1.60	4.370
Sheep	5.8	1.26	2.980
Chicken	12.8	6.88	6.900
Bicycles	35.0	0.13	0.341
Sewing machines	13.3	0.18	0.423
Radios	16.7	0.39	0.584

Majority of women owned very few assets in each type of asset which was indicated in the questionnaire. It was found that the mostly owned assets were bicycles and goats as 35% of interviewed women owned a bicycle (SD = 0.341) and 35% owned goats (SD = 4.370), followed by radio (17%) (SD = 0.584) and land (15%) (SD = 2.370). None woman owned plough and ox-cut in the study area implying that these assets were dominated by male.

Cattle were rarely owned by women. Ownership of bicycle may be associated with drought or shortage of water experienced in Igunga district. The area is situated in central part of Tanzania in which most of the time in rainfall seasons is dry, thus, women engage in the work of fetching water, sometimes obtained at a far distance reachable by means of transport. Ownership of radio shows some improvement of women in a desire to get information. Thus, in the future they may be knowledgeable on matters related to domestic and sexual and reproductive health.

The mean and standard deviation of each asset were introduced to the PCA equation in order to construct asset indices. The constructed indices were as follows:

$$A_j = f_1x(a_{j1} - a_1)/s_1 + \dots + f_Nx(a_{jN} - a_N)/s_N :$$

$$A_{j1} = + 0.12 * \text{land} * (1 - 0.75) / 2.37 + 0.001 * \text{iron house} * (2 - 0.08) / 0.32 + 0.02 * \text{grass house} * (3 - 0.11) / 0.43 + 0.19 * \text{cattle} * (4 - 0.61) / 2.37 + 0.66 * \text{goats} * (5 - 1.60) / 4.37 +$$

$0.23 * \text{sheep} * (6-1.26) / 2.98 + (-0.53) * \text{chicken} * (7-6.88) / 6.9 + 0.001 * \text{bicycle} * (8-0.39) / 0.58 + 0.000 * \text{sew machine} * (9-0.13) / 0.34 + 0.001 * \text{radio} * (10-0.18) / 0.4 = -0.25 \text{ to } 32.27.$

Indices ranged from -0.25 to 32.27. Then, these indices were categorised into three income levels. Results in Fig. 11 show that few women (34.17%) had high income, 30.83% had low income and the rest had moderate level of income.

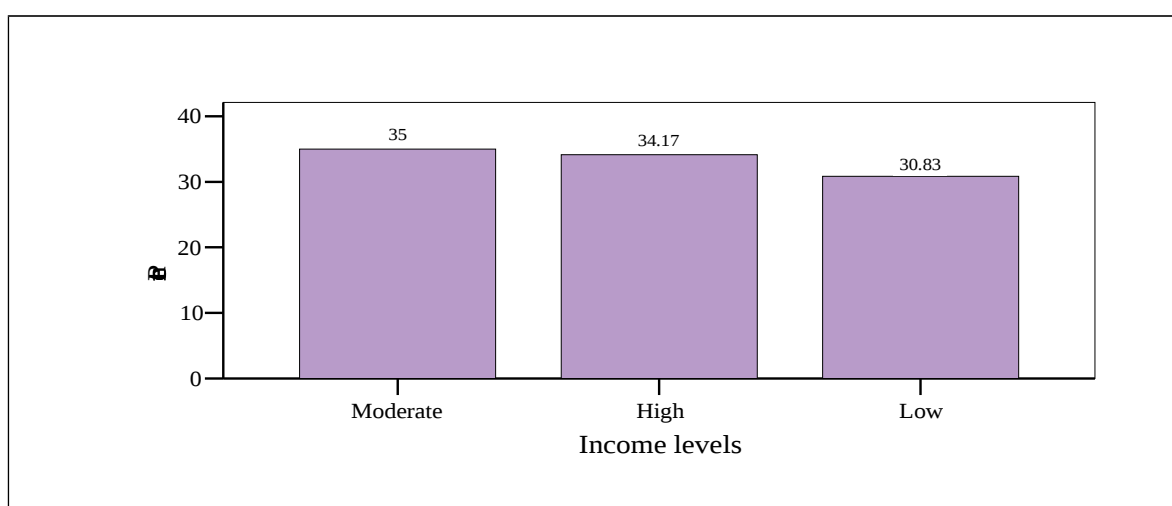


Figure 11: Income (asset index) of women

It was more noted that women in Bukama village were richer than women in the other three villages. Results in Table 11 show that 50% of respondents in Bukama village were richer women while richer women in Mwanzugi village were only 13.3%.

Table 11: Asset ownership of women by village

Income	Name of village				Total (%)
	Mwanzugi (%)	Isugilo (%)	Mbutu (%)	Bukama (%)	
Poorer women	43.3	43.3	33.3	20.0	35.0
Poor women	43.3	20.0	30.0	30.0	30.8
Rich women	13.3	36.7	36.7	50.0	34.2
Total	100.0	100.0	100.0	100.0	100.0

These results differ from other findings observed in different areas such as by Lindert, (1980) and NBS, (2005) which confirmed that the ideal number of children declines as the income increased and vice versa. However, these results should be interpreted with caution since the targeted assets might have indicated worthiness to those who own them while the real situation is different. For example results show that women in Mbutu, Isugilo, and Bukama were higher income earners than women in Mwanzugi village, a village with many civil servants. It was expected that with high percentage of civil servants the higher income earners should have also come from Mwanzugi village than from the other villages.

Thus, a point to be noted is that assets listed in the questionnaire favoured farmers than civil servants. Such assets like cattle, sheep, goats, and land favoured farmers who are minority in Mwanzugi village. Moreover, drought in the three villages necessitated women to have bicycles for fetching water as their main activities in the households; meanwhile ownership of sheep is associated with rituals especially in cases of infertility of women where many barren women sacrifice sheep desiring for fertility to secure their marriage.

4.3 Fertility status

The first objective of this study was to identify the fertility of the study area. The study employed two measures of current fertility as derived from birth history data. These measures are ASFRs, TFR and MNCB. However, the MNCB was obtained by direct counting the cumulative number of children born by all respondents by sex and geographical location. By average, Isugilo village had the highest number of children born per woman while Mwanzugi village had the lowest average. Results in Table 12 show that respondents in Isugilo had average of 6.4 children while respondents in Mwanzugi had

average of 4.6 children, implying that Isugilo and Mwanzugi villages had high and low contribution, respectively, to fertility level of the study area. Moreover, it was found that there were more male children than female children in number. Also results show that born male children exceeded the born female children by 9.6% with Isugilo and Mbutu having higher percentages of 18.4% and 12%, respectively. This implies that women reproduce more male than female children, thus, couples may desire for additional children more and more in case of having female children only. More discussion is in section 4.4.2 on sex preference.

Table 12: Cumulative number of children born by all respondents by village

Ward/Village	Number of children born				Percentage difference by sex		
	Male	Female	Total	Average	Male	Female	Difference
Igunga ward							
Mwanzugi	73	67	140	4.6	52.0	48.0	4.0
Isugilo	115	79	194	6.4	59.2	40.8	18.4
Sub total	188	146	334	5.6	56.2	43.8	12.4
Mbutu ward							
Mbutu	89	70	159	5.3	56.0	44.0	12.0
Bukama	88	84	172	5.7	52.2	47.8	4.4
Sub total	177	154	331	5.5	53.4	46.6	6.8
Grand total	365	300	665	5.5	54.8	45.2	9.6

Results in Table 13 show that the average numbers of children born by the respondents by their reproductive age groups (15 – 49 years) increases with ages of the respondents. It is 2.0 in age group 15 – 19 and reaches 7.9 in age group 45 – 49. This implies that by average a woman would reproduce up to 7.9 children at the end of her reproductive age in the study area. This is higher than the national level of 5.51 observed in the TDHS 2004-05 (NBS, 2005), implying that the area has high fertility.

Table 13: Mean number of children born (MNCB)

Age group	Number of children ever born per woman											Total women	Total children	MNCEB
	1	2	3	4	5	6	7	8	9	10	11			
15-19	0	2	0	0	0	0	0	0	0	0	0	2	4	2.0
20-24	2	3	2	0	1	0	1	0	0	0	0	9	26	2.9

25-29	1	3	6	6	2	0	2	0	0	0	0	20	73	3.7
30-34	0	3	7	3	5	2	3	2	0	0	0	25	113	4.5
35-39	0	0	1	3	4	6	8	4	2	1	1	30	198	6.6
40-44	0	0	1	1	4	3	3	5	1	3	1	22	156	7.1
45-49	0	0	0	1	1	1	1	3	1	4	0	12	95	7.9
Total	3	11	17	14	17	12	18	14	4	8	2	120	665	5.5

4.3.1 Measures of fertility

4.3.1.1 Age specific fertility rates (ASFRs)

Table 14 presents the ASFRs of the study area. Age specific fertility rates (ASFRs) are expressed as the number of births per thousand women in the age group of five years. ASFRs represent a valuable measure for assessing the current age pattern of childbearing as stated in section 3.6.3 of Chapter Three. Thus, the ages of the respondents were categorised into seven five-year age groups and the births of the respondents observed in a period of twelve months prior to survey were arranged against.

Table 14: Age-specific fertility rates (ASFRs) in the study area

Age group	Number of women	Number of births in 12 months preceding the survey	Age specific fertility rates (ASFRs)
15-19	2	-	-
20-24	9	2	222
25-29	20	7	333
30-34	25	7	280
35-39	30	6	200
40-44	22	1	181
45-49	12	1	83
Total	120	24	1299

Results show that no woman in the age group 15 – 19 years had given birth in the period preceded 12 months. The ASFRs is at peak at age group of 25 – 29 years. Thus, it is expected that women at age group 25–29 years contribute much to the total fertility rate in the study area. Though results show equal number of births in this age group and the next age group, this age group has fewer women than the next age group.

4.3.1.2 Total fertility rate (TFR)

TFR as defined earlier is the total number of births a woman would have by the end of her childbearing period if she were to pass through those years bearing children at the currently observed age-specific fertility rates. The summation of all obtained ASFRs is 1299. This sum was placed in the equation which is more elaborated in section 3.6.3 of the previous chapter. In this case, the TFR in the study area was 6.5. That is, $TFR = 1299 * 5 / 1000 = 6.495 = 6.5$.

4.3.2 Comparison of survey with national ASFRs and TFR

TFR of the study area was compared to the national TFR. Table 15 presents the ASFRs and TFRs of the study area, of the 2002 population census, and of the TDHS 2004-05.

Table 15: Comparison of ASFRs and TFRs in the study area and Tanzania

Age group	Number of women	No. of births in 12 months preceding survey	ASFR for field survey	ASFR for Tanzania (2002 Census)	ASFR for Tanzania (2004-05 TDHS)
15-19	2	-	-	113	132
20-24	9	2	222	290	274
25-29	20	7	333	287	254
30-34	25	7	280	248	218
35-39	30	6	200	185	156
40-44	22	1	181	96	79
45-49	12	1	83	34	18
Total	120	24	1299	1253	1131

Source: URT (2005) and NBS (2005)

It was found that the TFR in the study area was 0.2% and 0.8% higher than the 2002 population census and TDHS 2004-05, respectively, implying that fertility in the study is relatively rising as time goes on. Moreover, the ASFRs of the study area differed slightly with the national ASFRs obtained by the population census and TDHS 2004-05. Reports by the 2002 population census and TDHS 2004-05 show that the highest ASFRs were

attained in the second age group while ASFR of the study area was attained in the third age group (URT, 2005; NBS, 2005). The comparison is shown hereunder:

- (i) TFR (By survey) = $1299 \times 5 / 1000 = 6.495 = 6.5$
- (ii) TFR (By Tanzania 2002 Census) = $1253 \times 5 / 1000 = 6.265 = 6.3$
- (iii) TFR (By TDHS 2004-05) = $1131 \times 5 / 1000 = 5.655 = 5.7$

ASFR in the last age group of the study area was higher than the two national findings. This implies that in the study area women continue to reproduce highly even when they pass the second age group (age after teenage group). It implies also that women continue to reproduce at age above their reproductive period, that is, 49 years. The difference observed between the study area and the national findings may be due to the fact that the national reports include data from urban areas which have very low TFRs.

4.4 Socio-cultural Determinants of Fertility

The second objective of this study wanted to examine the socio-economic and socio-cultural determinants of fertility. However, in this section the socio-economic factors (education, occupation and income) are skipped as they have been discussed in sections 4.2 of the previous chapter. The socio-cultural factors used by the study are value of children and sex preference.

4.4.1 Value of children

The study sought to obtain views of respondents on how they value children and what makes them favour low or high number of children. In order to describe the attitudes of women toward value of children the study used a Likert scale format explained in section 3.6.4 in the previous chapter. Table 16 presents six statements which were set to accommodate women attitude toward value of children. The first three statements

numbered 1–3 are negative, hence, they favour low fertility while the next three statements numbered 4–6 are positive, and thus, they favour high fertility.

Table 16: Statements on attitude toward value of children and scores arrangement

NA	Statements	Point score arrangement
1	There are more costs than benefits by reproducing many children, so having many children makes it difficult to raise them properly	1 - 5
2	Having many children prohibits family economic advancement, so poverty is due to having many children	1 - 5
3	If you have fewer children you can give them better education and you may become rich when they get employed	1 - 5
4	If you have many children you may become rich since they can assist you in doing works	5 - 1
5	Having many children increases respect from the community, so they can make marriage more strong	5 - 1
6	Parents with many children have guarantee of security in the old age, hence, it is better to reproduce as many children as possible as some may die	5 - 1

Respondents were asked to show their attitudes toward value of children by indicating on the scales numbered 1-5 in each statement to show whether they strongly agreed, agreed, were uncertain, disagreed, or strongly disagreed with the statement as indicated in Appendix 1.

It should be taken into account that the theory behind value of children is that many couples in rural area desire for many children. Thus, the scale for the first three statements has scores ranging from 1-5 points to indicate the following attitudes: Strongly Agreed = 1 score, Agree = 2 scores, Uncertain = 3 scores, Disagree = 4 scores, and Strongly Disagree = 5 scores while for the next three statements the scores range in the opposite, that is, from 5 – 1 points to indicate the following attitudes: Strongly Agreed = 5 score, Agree = 4 scores, Uncertain = 3 scores, Disagree = 2 scores, and Strongly Disagree = 1 scores.

4.4.1.1 Value of children on the factor of cost of raising children

In order to catch up opinions concerning economic problems associated with cost of rearing children, and if they affected their decisions on the ideal number of children to have, respondents were given the following statement: there are more costs than benefits by reproducing many children, so having many children makes it difficult to raise them properly. Results in Fig. 12 show that more than half (56.7%) of women supported the statement with 39.2% strongly agreeing. However, more than one third opposed the statement, ignoring all the expenses associated in provision of necessary services to children.

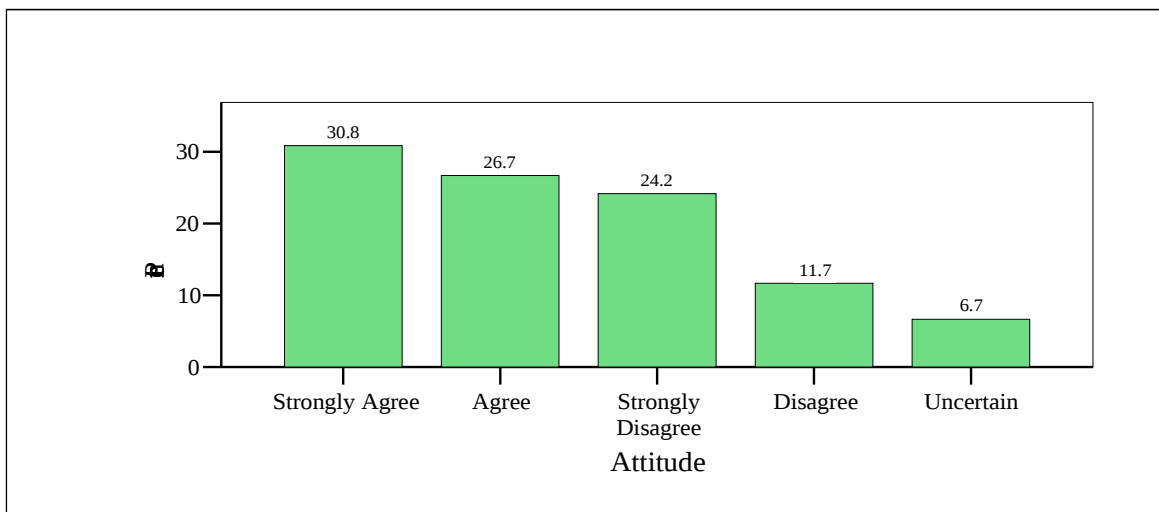


Figure 12: Value of children on the factor of cost of raising children

Women who supported the statement probably accept that having many children is more costing compared to benefits obtained out of having many of them. They accounted for the cost of providing necessary services such as education, health, food, and shelter. They also know that having fewer children brings large potential health and survival benefits for children, mainly as a result of wider intervals between births as it was pointed out by Zhu (2005). In the past time rearing of children was not costing as many social services like

education and health were freely provided by the government, meanwhile clothes to children were cheaper and less important to them. Their opinions imply that with economic recessions couples can rationally decide for ideal number of children to have.

4.4.1.2 Value of children on desire for quality educated children

The study intended to obtain views of women if they have changed their attitude from desiring more children in favour of providing better education, that is, desire to have quality children. It used the following statement: if you have fewer children you can give them better education and you may become rich when they get employed. This statement was supported by more than half (56.7%) of women (Fig. 13).

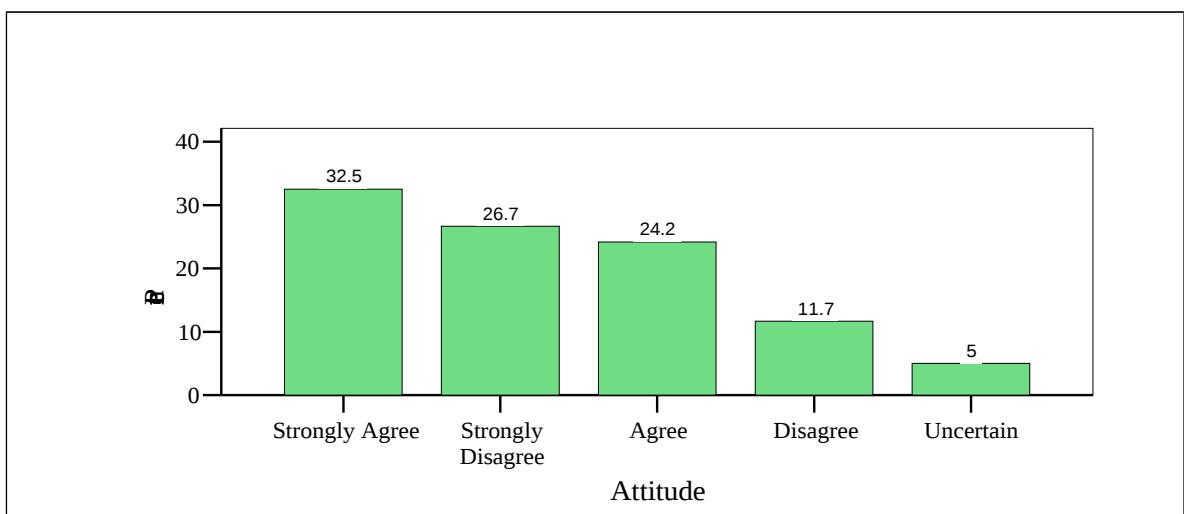


Figure 13: Value of children on desire for quality educated children

The percentages of women who supported the statement might have been attributed to three things. One, the increased expenses in education services especially for quality education. Second, the increasing spirit of observing that good and proper inheritance of children is in education and not in livestock. Thus, parents strive to provide not only education but also good education to their children. This is hampered by expensiveness of good education services to children, and three, the pay-ability of education to parents as

many families which hardly educated their children are better off. As children attain high education high returns are expected as it was pointed out by Psacharopoulos and Patrinos (2004) showing that an extra year of secondary schooling for children can increase their future wages. So this condition acts as a push factor for couple's desire for fewer children. However, the percentages (38.4%) for the opponents of the statement should not pass unnoticed. Having women amounting to more than a quarter of respondents strongly disagreeing with the statement implies that some women do not feel the cost of providing better education to their children because they do not see the importance of incurring expenses for children quality education.

4.4.1.3 Value of children on burden of children to economic advancement

In order to catch up women's opinions concerning poverty as an outcome of having many children the study used the following statement: having many children prohibits family economic advancement, so poverty is due to having many children. Results in Fig. 14 show that many women opposed the statement.

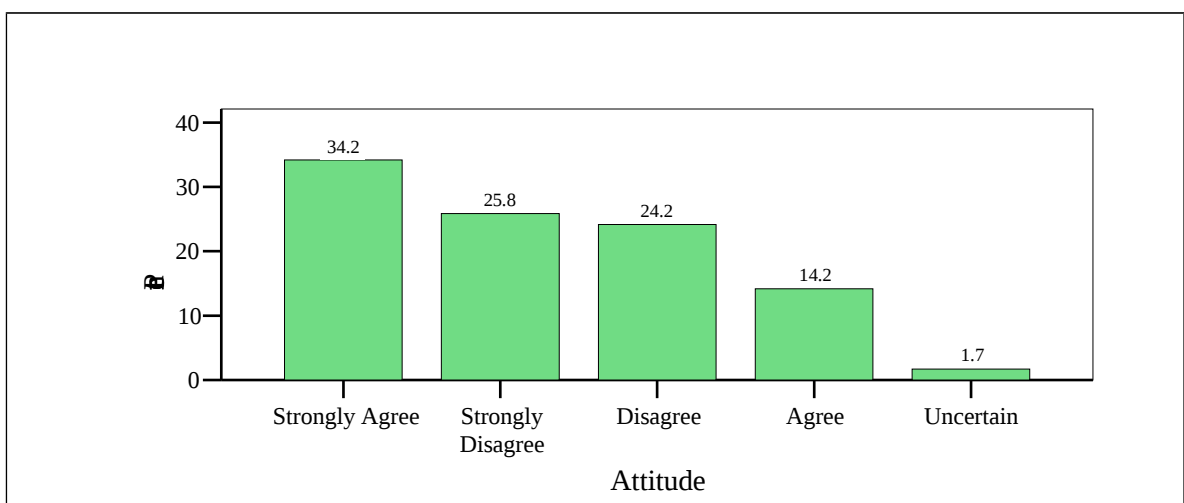


Figure 14: Value of children on burden of children to economic advancement

The statement was developed to obtain ideas concerning the struggles of communities for achievement and if, by struggling, couples see children especially having many children as a bottleneck towards economic achievement. Half (50%) of respondents disagreed that having many children acts as bottleneck to their economic achievement, thus they supported having many children. However, 44.2% supported the statement and more than one third strongly agreeing. It implies that women in rural areas do not associate number of children with the issue of development. However, Kabeer (1996) found differently in developed countries where desire to have children is counted equally with desire to have other commodities.

4.4.1.4 Value of children on guarantee of security in the old age

The study used the following statement to see the value of children on grounds of provision of security to parents at their old age: parents with many children have guarantee of security in old age; hence, they consider it better to reproduce as many children as possible as some may die. The statement was developed to capture women opinions with assumption that parents hope for security in old ages. It was more assumed that couples consider risky to have few children as some may die, thus fail to provide security.

Results in Fig. 15 show that women were of mixed feelings to this statement as neither side had majority of respondents. There were 48% of women who opposed the statement with more than one third strongly disagreeing, while 41.7% with about one quarter strongly agreeing supported it. The supporters said that guarantee of security at old age with many children depends on having many children to take care of the parent than with few children. Meanwhile the opponents considered that guarantee of security at old age rests on the goodness and quality of the children and not in their number

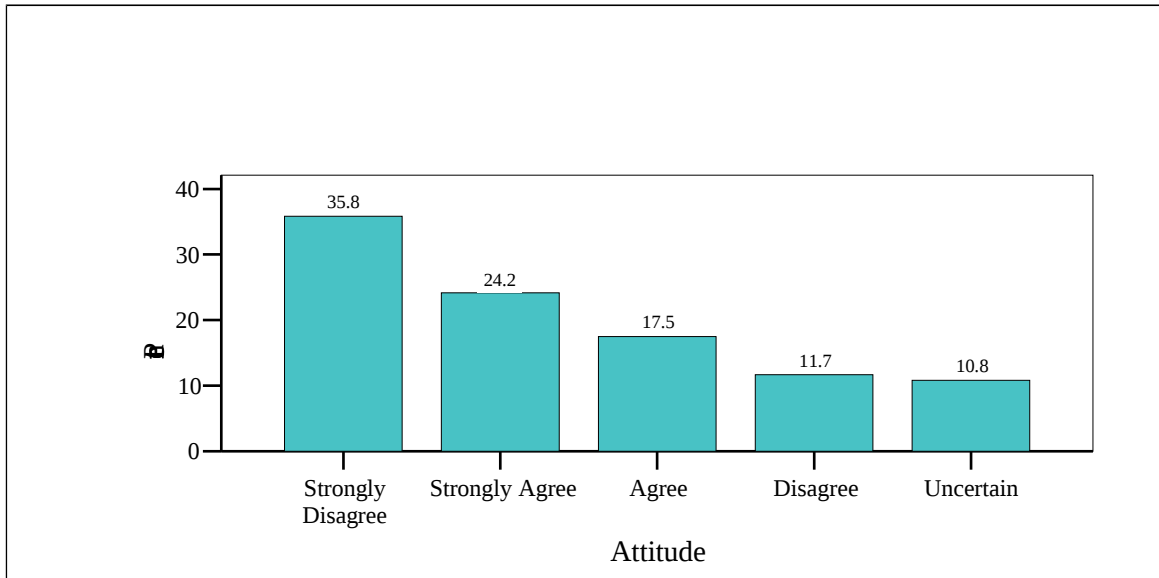


Figure 15: Value of children on guarantee of security in the old age

The feelings of the supporters were contributed by risky of children. In the third world mortality especially child mortality is still high and is a cause of high desire for many children. Mostly, parents care about old-age security if children transfer money to their parents when the latter retire (Galor and Mountford, 2006; Moav, 2005).

4.4.1.5 Value of children on community respect with many children

In order to obtain views of women concerning community respect they expect by having many children, and if they desire more children to enhance their marriage, the study developed the following statement: having many children increases respect from the community, so they can make marriage more strong. Results in Fig. 16 show that women were of mixed opinions. Neither of the two sides reached half of all respondents. However, the opponents who out numbered the supporters by 5.7% had many women (one third of

all respondents) who strongly disagreed while supporters had few women (less than one quarter of all respondents) who strongly agreed.

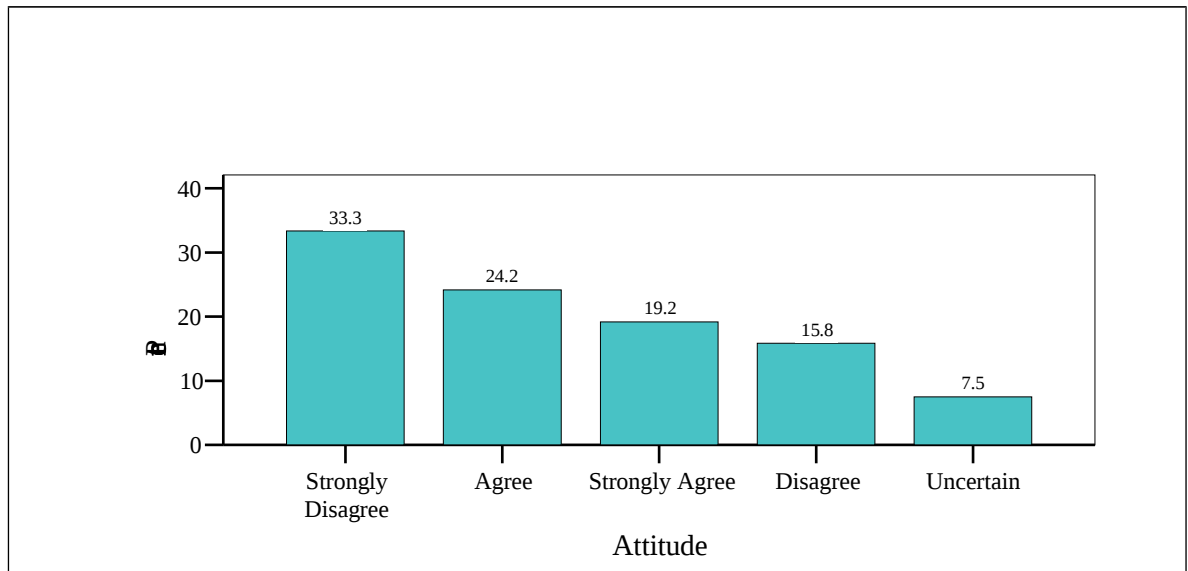


Figure 16: Value of children on community respect with many children

The findings also imply that although many women are changing their attitudes towards having many children for different reasons, more specifically, the economic reasons, yet many still regard that by having many children, respect from their partners and the community will increase and their marriages become strong. As non economic values of children correspond to psychic satisfactions parents derive from children or to the psychological motives for wanting them (Hoffman and Hoffman, 1973).

4.4.1.6 Value of children on richness with labour of children

In attempting to capture information concerning the value of children embedded in their labour power, the study developed the following statement: if you have many children you may become rich since they can assist you in doing works. Results in Fig. 17 show that more than two third of women opposed the statement expressing their feelings that child labour does not attribute to desire for many children.

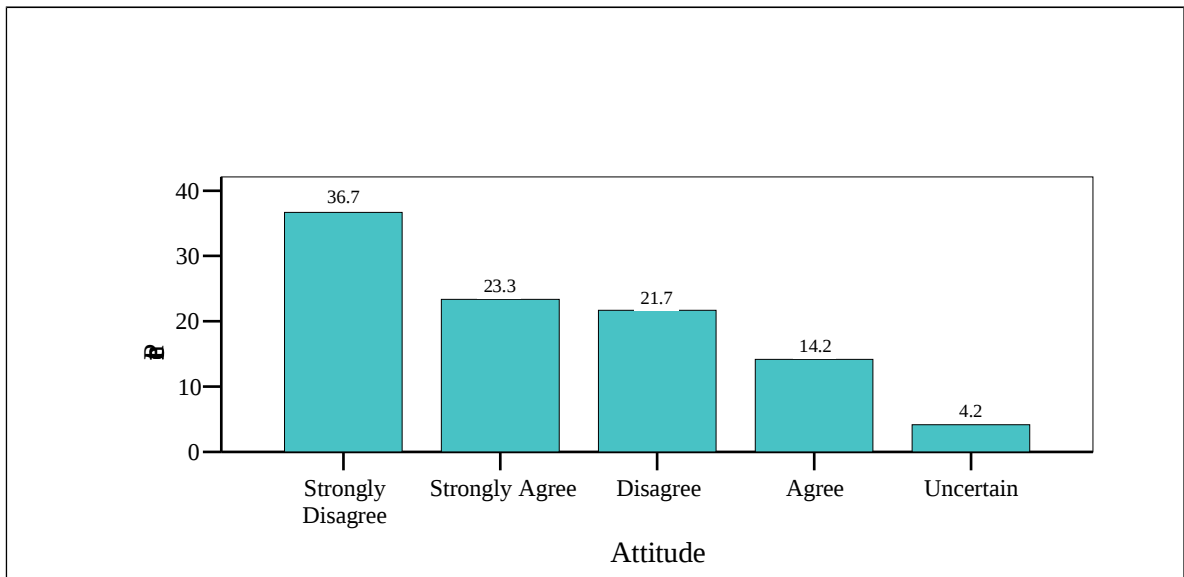


Figure 17: Value of children on richness with labour of children

These opinions support the economic fact that children's labour today is at a diminishing return. What children contribute as labour is not equivalent to the cost that pertains in providing the necessary social services like medical and education. Moreover, schooling demands the children just when are five years old. It takes them all the way to maturity when they come to live independent of their parents. Families fail to utilize their labour power. Therefore dependency of child labour by families is decreasing. However, child labour in rural societies is a critical issue and in fact it is still highly needed. The children income is still needed as it was pointed out by Galor and Mountford (2006) who consider that the adult's utility function depends on the amount of consumption and the total expected income of children.

4.4.1.7 Overall attitude towards value of children

The six statements were categorized into three levels of attitudes. Responses on ‘Strongly Agree’ and ‘Agree’ were summed to mean ‘Agree’ and were considered as favouring low fertility, and responses for ‘Strongly Disagree’ and ‘Disagree’ were summed to mean ‘Disagree’ and were considered as favouring high fertility. The ‘Uncertain’ responses were unchanged. Results in Fig. 18 show that more than half (51.7%) of respondents had low attitude while 41.7% had high attitude toward value of children. This implies that more women in the study area though had highly reproduced, had low attitudes toward value of children.

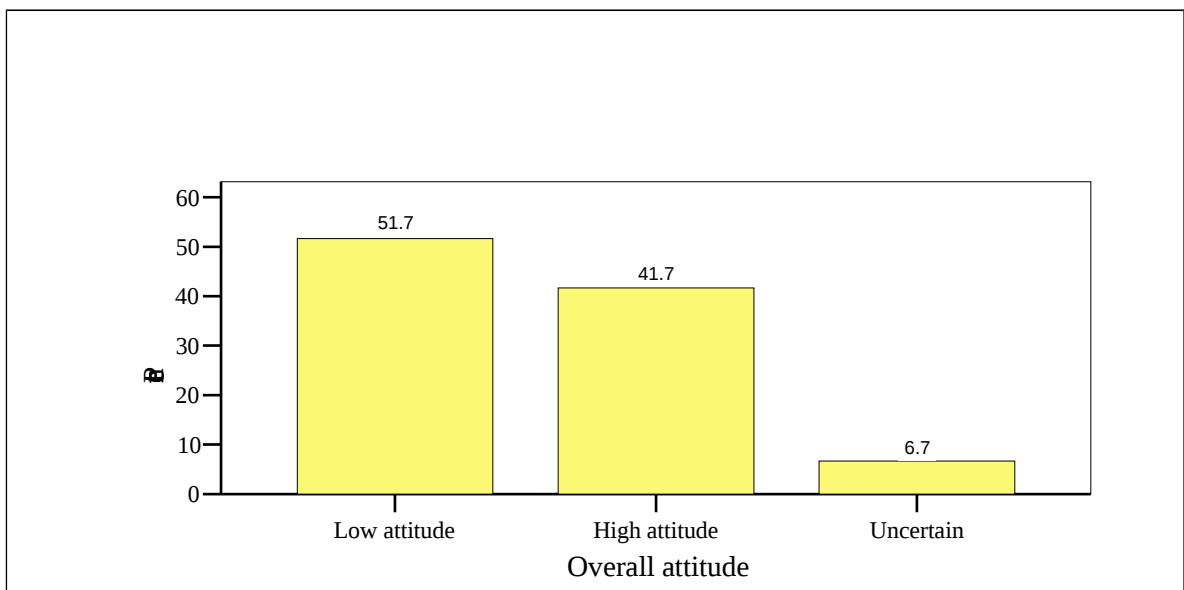


Figure 18: Attitude of women toward value of children

4.4.2 Sex preference

Sex preference is the preference of couples to have a child of a particular desired sex. Parents in some societies are said to prefer sons to daughters, while, it is vice versa in other societies. The study used Coomb’s scale explained in section 3.6.4 in the previous chapter

to determine respondent's responses on alternative questions seeking them to express their preferences on the sexes.

4.4.2.1 Responses on sex compositions

There were five choices with different sex compositions focusing on the preference of women of one sex to another (Appendix 2). Table 17 presents the sex composition choices and responses of the respondents. The results are presented in the paragraphs that follow.

Table 17: Sex composition choices for sex preference

S/N	Sex composition	Sex composition choices	Frequency	Percent
1	2 sons and 1 daughter, or 2 daughters and 1 son, or 3 sons, or 3 daughters, or undecided	2 sons and 1 daughter	60	50.0
		2 daughters and 1 son	46	38.3
		3 sons,	8	6.7
		3 daughters,	6	5.0
		Undecided	0	0.0
2	2 sons and 1 daughter, or 3 daughters, or undecided	2 sons and 1 daughter	61	50.8
		3 daughters	44	36.7
		Undecided	15	12.5
3	2 daughters and 1 son, or 3 sons, or undecided	2 daughters and 1 son	64	53.3
		3 sons	46	38.3
		Undecided	15	8.3
4	3 sons or 3 daughters, or undecided	3 sons	58	48.3
		3 daughters	43	35.8
		Undecided	19	15.8
5	3 sons and 1 daughter, or 2 sons and 2 daughters, or 1 son and 3 daughters, or undecided	3 sons and 1 daughter	64	53.3
		2 sons and 2 daughters	43	35.8
		1 son and 3 daughters	13	10.8

The first choice had sex composition of either two sons and one daughter, or two daughters and one son, or three sons, or three daughters, or undecided. Results show that half (50%) of all respondents preferred a combination of two sons and one daughter, and 38.3% preferred a combination of two daughters and one son. This implies that preference for

sons to daughters is high. If the couples have daughters only they will continue to desire for more children in search of sons, thus, increases fertility.

The second choice had sex composition of either two sons and one daughter, or three sons, or undecided. Results show that more than half (50.8%) of women preferred a sex combination of two daughters and one son and 38.7% preferred three daughters. Meanwhile some percentages of women (12.5) remained irresolute to the question. This implies that rather than reproducing three daughters an individual may continue to desire for an additional child until a son occurs, thus increasing fertility. Similar findings were reported by Lundberg (2005a).

The third choice had sex composition of either two daughters and one son, or three sons or undecided. Results show that more than half (53.3%) of women preferred a sex combination of two daughters and one boy and 38.3% preferred sons only. Like in the second choice the results imply that both sexes were preferred to single sex. However, still a considerable percentage (39%) of women preferred sons to daughters than it was in the first choice. Under this preference individuals would continue to desire for an additional child if they had reproduced single sex children and this increases fertility.

The fourth choice had sex composition of either three sons or three daughters. On this choice it was openly revealed that there is preference on sons to daughters in the study area. Results show that 48.3% of the respondents preferred sons to daughters while more than one third of them preferred daughters to sons. Thus, women prefer more number of sons to girls to secure their marriage as it was noted by Brinig (2005).

The fifth choice had sex composition of either three sons and one daughter, or two sons and two daughters, or undecided. Results show that more than half of women preferred a total of four children of equal sexes. Although women preferred having reproduced children in equal sexes over the other two compositions, it is shown that women preferred sons to daughters. Those opted for the composition of three sons and one daughter outnumbered those who opted for the opposite composition. This implies that in case of even number of children individuals would desire for more sons than daughters. The reason lies on labour. With more sons family labour increases than with daughters as it was noted by Bedard and Deschenes (2005) in Pakistan.

4.4.2.2 Overall sex preference of the respondents

In this stage all respondents who opted for a sex combination with only daughters or with more sons than daughters were considered to have preference on sons to daughters and vice-versa. The fifth choice included a combination of equal number of both sexes. For those who opted for the combination of both sexes in this question were considered to have preference on neither sex. The averages of frequencies of the sex combination alternative responses from each question were obtained.

Results in Fig.19 show that many women (39%) though not the majority, preferred sons to daughters while one third preferred daughters to sons. The results imply that many respondents preferred sons to daughters as it was noted by a number of studies in many African societies and worldwide. Sons have been preferred to daughters because they provide more security to parent and source of labour (Dahl and Moretti, 2008). The percentage of daughter preference (32.5%) in the study area is caused by couples' desire to get wealth out of bride price as by marrying off their daughters parents receive many cattle.

Several factors attributed to son preference as noted from the FGDs conducted by the study. First, sons were mostly preferred on security grounds as daughters are expected to move to other clans upon marriage while sons mostly remain at home. Moreover parents would feel free in their old ages to stay at their sons than at their daughters when they want to be cared for in old ages. In one of the FGDs many discussants pointed out that the husbands have power over their wives, thus, staying under the son's care is better than under somebody's wife who is under control of her husband and, upon husband's coercion, her parent may be coerced too. Second, the recent situation of declining bride prices to girls as a result of socio-economic and cultural changes has reduced parents' desire for more daughters (Neal, 2004), and last, some parents still believe that there is more chance of pay off by educating the sons than daughters due to risk of pregnancies and being under control of the husbands even if they were educated by their parents. This reduces the desire for daughters. Many studies have noted such findings. El-Gilany and Shady (2007) in Egypt reported that the causes of sex preference were mainly psychological and social. The situation influenced Lundberg (2005b) to conclude that if mothers and fathers make distinct contributions to childrearing, then market segregation of the sexes becomes less compelling.

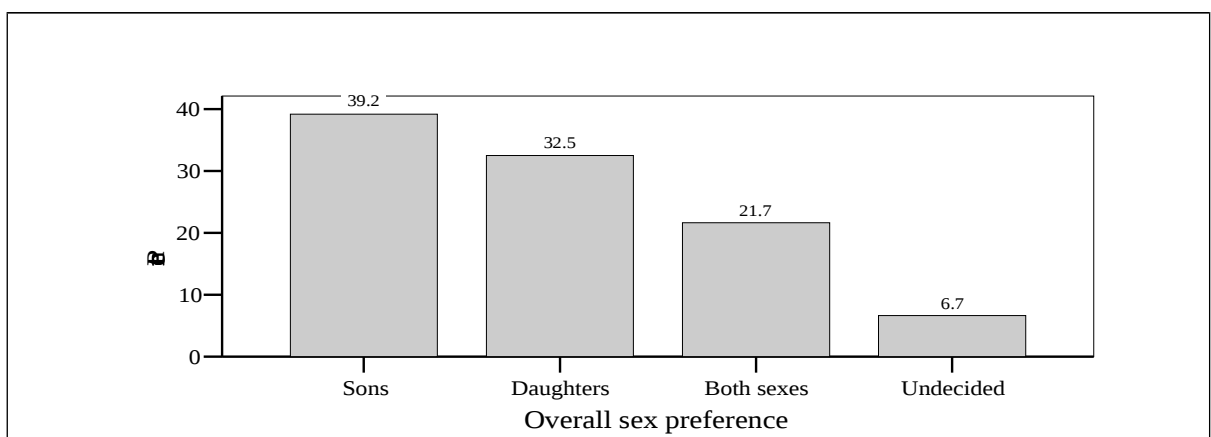


Figure 19: Overall sex preference of respondents

Three factors are important in explaining this gap in America. First, women with first-born daughters are less likely to marry. Strikingly, we also find evidence that the gender of a child *in utero* affects shotgun marriages. Among women who have taken an ultrasound test during pregnancy, mothers who have a girl are less likely to be married at delivery than those who have a boy. Second, parents who have first-born girls are significantly more likely to be divorced. Third, after a divorce, fathers are much more likely to obtain custody of sons compared to daughters. These three factors have serious negative income and educational consequences for affected children (Dahl and Moretti, 2008).

4.5 Women's Empowerment

The third objective of this study wanted to assess the extent of women's empowerment in the study area. The study focused on domestic and sexual and reproductive health empowerment and how they had affected the reproductive behaviours and their fertility levels of women. In addition to socioeconomic and demographic factors and socio-cultural factors the study employed five measures of empowerment (empowerment proxies) as stated by Masons and Smith (2003) to measure the level of women's empowerment in the study area. Employed specific measures of domestic empowerment include: household economic decision making, freedom of movement, mobility, and coercive control; while specific measures of sexual and reproductive health empowerment include: knowledge of FP methods and level of contraceptive use and family size decision making.

4.5.1 Domestic empowerment

4.5.1.1 Household economic decision making

The ability to make decisions in household economic affairs, to a great extent, depends on individual's ability to contribute to family support. However, most women in rural areas do unpaid works and lack this ability, hence are unable to make economic decisions. The study intended to obtain information on who decides for women economic affairs, if could make major purchases of household goods like ox-carts and ploughs, or small purchases of the household items like plates and bowls and for their own belongings like gowns and shoes or lending household items like *pangas* and bicycles to neighbours and other relatives. Moreover, women were asked if they participated in deciding where, when, how much, and on the type of crop to produce in the coming farming season.

Results in Table 18 show that the area under which majority women made decisions in absence of their husbands or other family members was in buying of the family utensils like bowls and plates (55%) followed by buying of the self clothes; the gowns and shoes (50%). In the production area in which women are chief food producers few (48%) women were participating in the type of crop, when, where, and the extent to cultivate. Making major purchases of household goods like ox-carts and ploughs was a considerable percentage of women, as 40% said they could make such purchases without making consultation to their husbands or other family members. The decision to work out side the home too was the area under which considerable percentages (44%) of women said they could go without seeking permission from husbands or other family members.

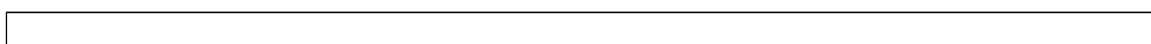
In categorising the levels of women household economic decision making power, it was found that many women had low household decision making power. Only 15.8% of

interviewed women had high level of decision making whereas 46.7% had low level of making household economic decisions as it is indicated in Fig. 20.

Table 18: Level of household economic decision making

Measures of household economic decision	Response	Frequency	Percent
Who decides for woman/wife to work outside the home	Others decide	67	55.8
	Wife decides	53	44.2
Who decides on purchases of household goods such as ox and plough	Others decide	72	60.0
	Wife decides	48	40.0
If woman/wife buys for herself clothes or shoes without consulting her husband or family member	No or undecided	60	50.0
	Makes consultation	60	50.0
If woman/wife buys a household bowl or plate without consulting her husband or family member	No or undecided	54	45.0
	Makes consultation	66	55.0
If woman/wife participates on type of crop and extent to cultivate	No or undecided	62	51.7
	Participates	58	48.3
If woman/wife lends knife, <i>panga</i> or bicycle without consulting husband	No or undecided	63	52.5
	Makes consultation	57	47.5

The findings imply that many women in rural areas are still decisive on minor economic issues and are still subjective to their husbands and other family members as it was observed in five Asian countries (India, Malaysia, Pakistan, Philippines, and Thailand) (Mason and Smith, 2003).



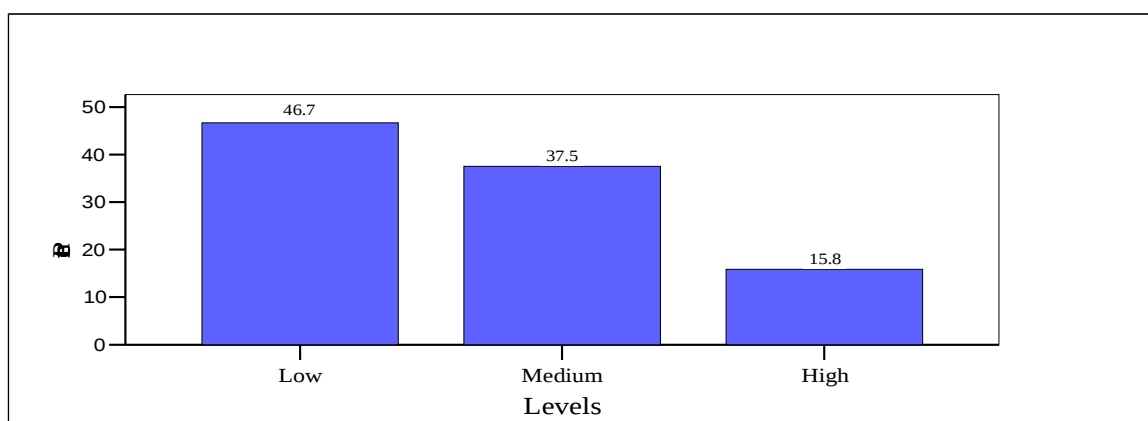


Figure 20: Levels of women household economic decision making

4.5.1.2 Freedom of movement (mobility)

Mobility, as defined by this study, is the freedom of visiting local areas without seeking permission from their husbands or family relatives. Such areas include local markets in the village, local health centres, fields out side the village, community centres in the village, and homes of the relatives in the village. Results in Table 19 show that most women had low freedom of movement.

The place at which most of them attended without permission from their husbands or other family members was local health centres (65%) probably due to attending to clinics. Less women (38%) visited fields out side the village without seeking permission from their husbands or other family members. This is also the crucial context to note in discussing women's empowerment. The findings bring an implication that the less freedom they have deprives them the power to resist child bearing. Thus, may reproduce many children unwillingly.

Table 19: Level of freedom of movement (mobility)

Measures of freedom of movement	Response	Frequency	Per cent
If woman ought to seek permission from husband or relative to go to local market in the village	Seeks permission	65	54.2
	Does not seek permission	55	45.8

If woman ought to seek permission from husband or relative to go to local health centre	Seeks permission	78	65.0
	Does not seek permission	42	35.0
If woman ought to seek permission from husband or relative to go to fields outside the village	Seeks permission	50	38.4
	Does not seek permission	70	41.6
If woman ought to seek permission from husband or relative to go to community centre in the village	Seeks permission	54	45.0
	Does not seek permission	66	55.0
If woman ought to seek permission from husband or relative to visit homes of the relatives in the village	Seeks permission	64	53.3
	Does not seek permission	56	46.7

In categorising the levels of women mobility it was found that many women had low freedom of movement. Half of all respondents had low freedom of movement and, like in household economic area, only 15.8% of interviewed women had high freedom of movement as indicated in Fig. 21. Such findings were also noted by Hardee and Leahy (2008) in Pakistan where there is limited women mobility due to the cultural practice of *Purdah*, in which women's activities outside the household are severely constrained. The findings imply that many women in rural areas are still under control by men as it was pointed out by Mayoux (2005).

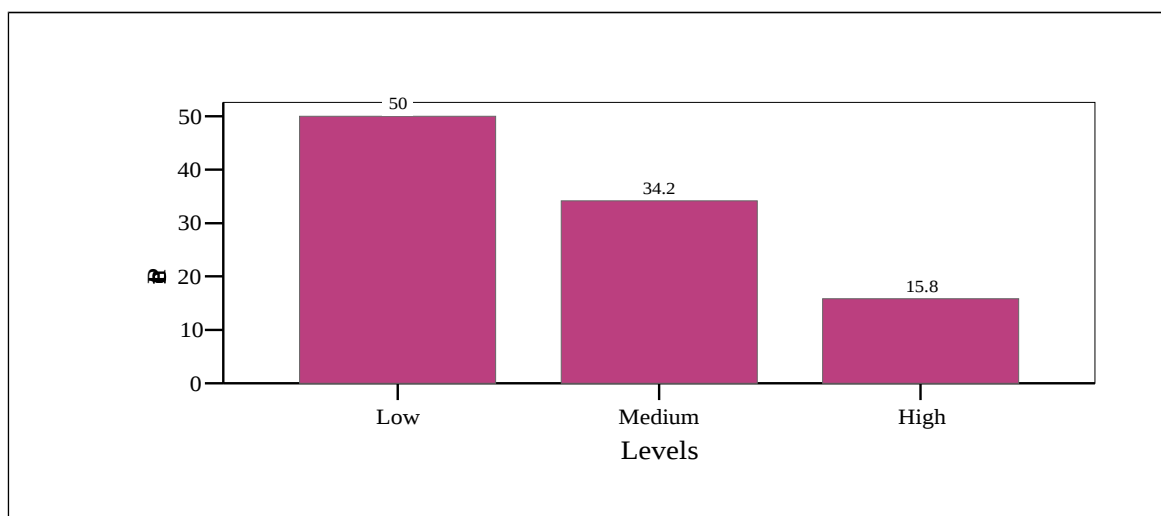


Figure 21: Levels of women mobility

4.5.1.3 Interpersonal coercive control

The ability of resisting coercive, torture, and intimidation from somebody as defined in this study is interpersonal coercive control. The study sought to obtain information concerning women ability to resist coercion from their husbands by asking them two questions concerning their coercive control. Women were asked if they are afraid to differ with their husbands or if they had had been hit by their husbands. Results in Table 20 show that about 73% of all women said they were afraid to differ with their husbands. However, about one third of all women had been hit by their husbands. This implies that although the percentages of women who had been hit by their husbands were lower than those who were not hit the proportion of women who were afraid to differ with their husbands is enough for the study to conclude that they were coward even to discuss sexual and reproductive issues with their husbands especially if they wanted to control their births.

Table 20: Level of interpersonal coercive control

Measures of coercive control	Response	Frequency	Per cent
If woman is afraid to disagree with husband to avoid he (husband) may be angry	Yes	87	72.5
	No	33	27.5
If woman has ever been beaten or hit by husband in her marriage	Yes	40	33.3
	No	80	66.7

By putting the respondents in three levels of low, medium, and high levels of coercive control for easy of making comparison the study found that many women (49%) had low coercive control while less than a quarter had high coercive control as indicated in Fig. 22. This percentage range is big enough to conclude that men control over women is still high in the rural areas. Similar results were observed in the study Mason and Smith (2003) in five Asian countries (India, Malaysia, Pakistan, Philippines, and Thailand).

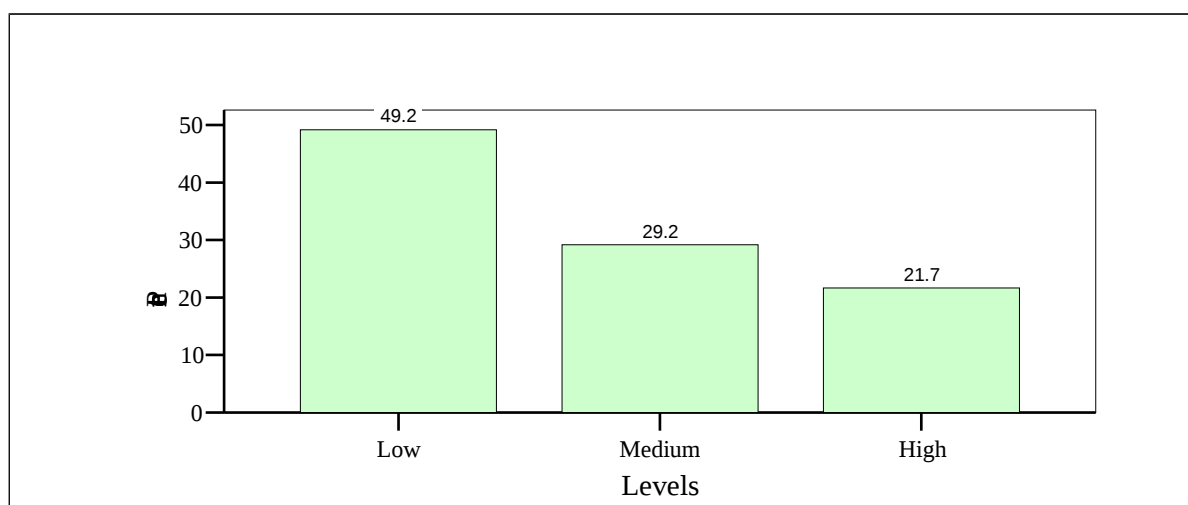


Figure 22: Levels of women interpersonal coercive control

4.5.2 Sexual and reproductive health empowerment

4.5.2.1 Knowledge of FP methods and level of contraceptive use

In order to obtain reliable information concerning women awareness on FP and on their levels of contraceptive use the study sought to be informed on issues related to their knowledge of birth control and the level of contraceptive use. Specifically a woman was asked to give the following information: if she had heard of any birth control method (traditional or modern), if she could mention at least one method for birth control, if she had attended any training or received sexual and reproductive health education, and if she was a current user of contraceptives (overtly or covertly). Results in Table 21 show that majority (over 90%) of interviewed women had heard of the birth control methods (modern or traditional) and more than three quarters of all respondents successfully mentioned one or more methods. Knowledge on contraception is higher in rural areas as the result of the Cairo Conference (Reynolds, 2006).

Table 21: Awareness to family planning (birth control)

Measures of FP awareness and contraceptive use	Response	Frequency	Percent
If a woman has heard of any birth control method (traditional or modern)	Has not heard	11	9.2
	Heard	109	90.8

If a woman can mention at least one method for birth control	Fail	27	22.5
	Mentions	93	77.5
If a woman is currently using birth control (contraception)	No or undecided	69	57.5
	Currently using	51	42.5
If a woman uses contraceptives for birth control overtly	No or undecided	24	47.0
	Overtly using	27	53.0
If a woman has received sexual and reproductive health education or training	No or undecided	37	30.8
	Has received	83	69.2

Moreover, over two third of respondents had attended seminars or had received sexual and reproductive health education. However, only 42% of all respondents were current users or ever used contraceptives for birth control and that among contraceptive users 53% were overt users. The remainders were covertly using the contraceptives, implying that they had determined to control their births but had no power to do so due to many reasons, arguably, their husbands or other clan members or relatives desired for many children and had to decide on childbearing of the concerned women.

The study categorised the women's responses into three levels for comparison purposes. Results in Fig. 23 show that knowledge of FP and level of contraceptive use were high in the study area as indicated. Though there were reasonable percentages (32%) of women with low knowledge of FP and level of contraceptive use, women with high level of FP and contraceptive use (38%) and those with minimum level (29%) make the study conclude a considerable high FP awareness and contraceptive use.

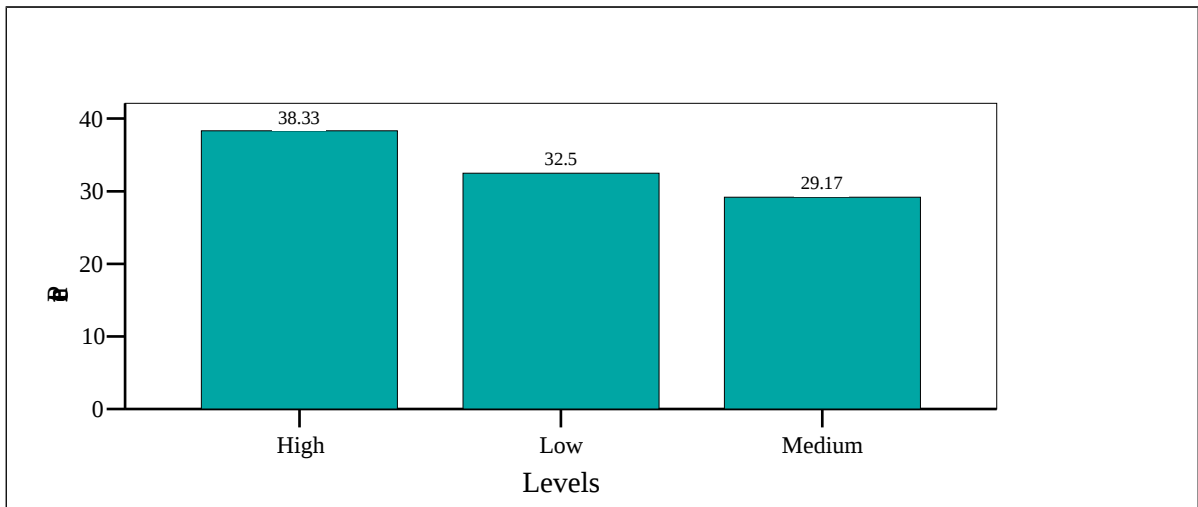


Figure 23: Levels of FP awareness and contraceptive use

4.5.2.2 Family size decision making

The family size decision making is perhaps the central and most crucial proxy among several women's empowerment proxies used by the study. Its centrality is based on its direct connectedness to the very sexual and reproductive issues. In rare cases many couples talk together on matters concerning sex and reproduction. This is because talking it is mostly the issue of their sexual and reproductive organs and sexual intercourse. Customarily, it is difficult to openly talk of it, even among the spouses. Thus, the study investigated earnestly and intensely to obtain liable information concerning the ability of women to participate in deciding on their sexual and reproductive issues. Specifically, it intended to reveal on who had great say on how many children a woman should bear, if a woman discussed and agreed with her husband or partner when and how much to do sex, and if she discussed and agreed with her husband or partner when to conceive.

Results in Table 22 show that more than half (55%) of all women had decision on the ideal number of children to have. For the rest of respondents, other persons including husbands dictated the number of children they had to reproduce in their reproductive period. On the

issues concerning ‘when and how much to do sex’, less than half (47.5%) of women discussed more often while 20% never discussed with their husbands or partners.

However, majority respondents did not discuss and agree with their husbands or partners on when to conceive and the total number of children to bear. Results show that 59.2% of all women never discussed such matters while in a small proportion less often discussed. For comparison purposes the study categorised the women in three levels of low, medium, and high family size decision making.

Table 22: Level of family size decision making

Measures of family size decision making	Response	Frequency	Percent
Who of these people has great say on how many children to bear	Others	54	45.0
	Wife	66	55.0
If a woman discusses and agrees with her husband when and how much to do sex	Never	24	20.0
	Once or twice	39	32.5
	More often	57	47.5
If a woman discusses and agrees with her husband when to conceive and the number of children to bear	Never	71	59.2
	Once or twice	13	10.8
	More often	36	30.0

Results in Fig. 24 show that 49.2% of respondents were women with low family size decision making. A very small percentage of women had high family size decision making.

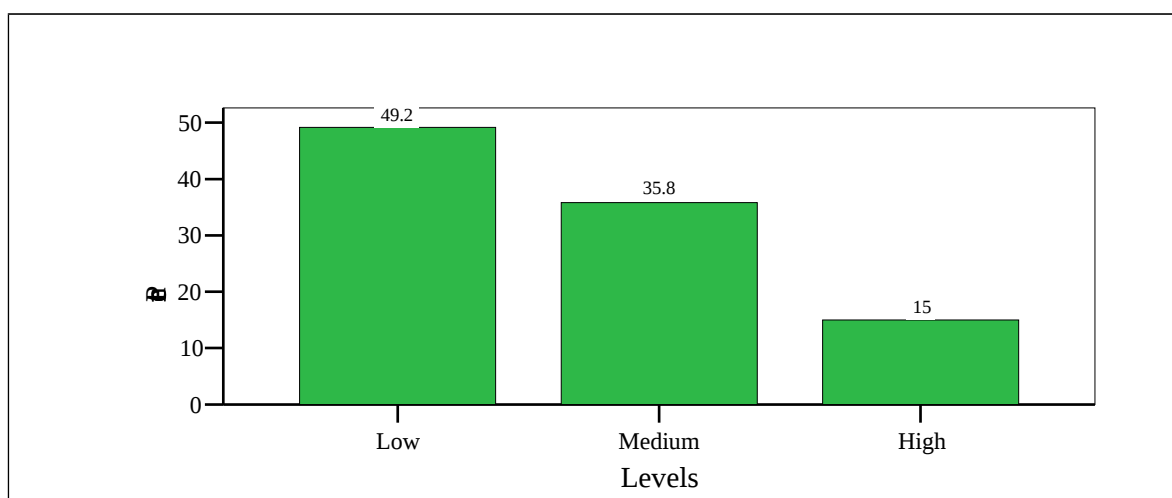


Figure 24: Levels of family size decision making

The percentage of women with low plus those with medium family size decision making (50.8%) might have been the result of different programmes which are run in the district. These include Community Health Fund and maternal health and safe delivery by Family Care International which has been operating since 2003 in Igunga district and Urambo district as a control group. Moreover, the HIV/AIDS anti campaigns, such as Voluntary Sector on Health Initiative Programme and Tanzania Multi-sectoral AIDS Programme undertaken by Care International in Tanzania, as a Regional Facilitating Agency under Tanzania Commission for AIDS in Tabora region from 2003 to 2004 and 2006 to 2009, have increased women's knowledge in sexual and reproductive health related issues. Family size decision making, like the other proxies used by the study is multidimensional. However, the findings imply that women in rural areas have less power to decide on reproductive matters. Such findings were also reported from Pakistan in the study by Mason and Smith (2003).

4.5.3 Factors influencing fertility

This section deals with analysis of the background, socioeconomic and socio-cultural variable. Each variable is analysed independently to verify its contribution to dependent

variable (fertility). However, in section 4.6 below, in which the women's empowerment measures (or proxies) are analysed the multiple regression analysis has been employed to test the strengths or weakness of these variables in contributing to dependent variable (fertility).

Table 23 presents the results of the analysis of the background variables for fertility. These include age, marital status, age at first marriage, age at first birth, and household size. Table 24 presents the analysis of socio-economic factors (education level, occupation, and income) and socio-cultural factors (value of children and sex preference).

4.5.3.1 Age of woman

In the survey area, it was found that age of women increased with increase of number of children born. Results in Table 23 show that 72.2% of women of age below 24 years had less than four children and none had more than nine children, while 44.4% of women of age above 45 years had more than nine children and none had less than four children. Thus, age of woman and fertility have inverse relationship and were significant at ($p < 0.05$). This implies that without any remedial action, such as family planning, a woman will have many children at the end of her reproductive age.

Table 23: Relationship between the background variables and fertility

Variable	Number of children				X ²
	< 4	4 - 6	7 - 9	> 9	
Age					
< 24 years	72.2	16.7	11.1	0.0	
24 - 33 years	35.6	46.7	17.8	0.0	
34 - 45 years	4.2	35.4	47.9	12.5	
> 45 years	0.0	22.2	33.3	44.4	0.000
Marital status					
Married	20.7	32.2	35.6	11.5	
Divorced	21.4	57.1	21.4	0.0	
Widowed	22.2	55.6	22.2	0.0	

Single	80.0	20.0	0.0	0.0	0.004
Age at first marriage					
< 15 years	19.2	26.9	34.6	19.2	
15 - 20 years	26.3	34.2	32.9	6.6	
21 - 26 years	40.0	46.7	13.3	0.0	
> 26 years	0.0	100.0	0.0	0.0	0.087
Age at first birth					
< 16 years	25.0	31.3	31.3	12.5	
16-20 years	22.5	33.8	33.	10.0	
21-25 years	36.4	45.5	18.2	0.0	
> 25 years	50.0	50.0	0.0	0.0	0.035
Household size					
< 4 residents	54.5	9.1	27.3	9.1	
4 – 6 residents	33.3	40.4	21.1	5.3	
7 – 10 residents	13.0	39.1	43.5	4.3	
> 10 residents	0.0	16.7	16.7	66.7	0.000

4.5.3.2 Marital status

Results in Table 23 show that marital status influenced fertility. Results show significant relationship at ($p < 0.05$). It was found that fertility among the single women was very low compared to married ones. While 80% of single women had less than four children (the rest having no more than six), all women who had reproduced more than nine children were married, divorced, and widowed. Married women have opportunity to have many children than single women. However, the marriage data as a proximate determinant of fertility in many societies in SSA is becoming less used as it has been misleading due to rise in pre marital sexuality and child bearing (Van de Walles and Meekers, 1993). There is an increasing ambiguity in determining exactly when a couple is getting married. Therefore, the proportion of women engaging in sexual relationship rather than just women in marriage has effect in fertility.

4.5.3.3 Age at first marriage and fertility

Earlier, it was expected that age at first marriage would have significant effect on fertility of woman. But results in Table 23 show that no significant relation was shown between the two variables. However, results show that women who enter in sexual relations earlier are

likely to have many children. Results in Table 27 show that neither woman, among married at age above years 26 years, had more than six children. While 19.2% of those who married at age below 15 years had more than nine children. Same findings were reported in Tanzania by Ngalinda (1998). The findings imply that late marriage (probably due to schooling) may lower birth rates though it is important to note that even early marriage may not contribute high birth rate if birth control mechanisms are well provided to people. The increasing percentages of contraceptive use in the study area might have been the cause of this unexpected variation. Results in Fig. 25 show a large number of users of contraceptives especially those who married at age 21 and above. More women who married in age group 21-26 were contraceptive users than none users, while all women who married at age above 26 were users.

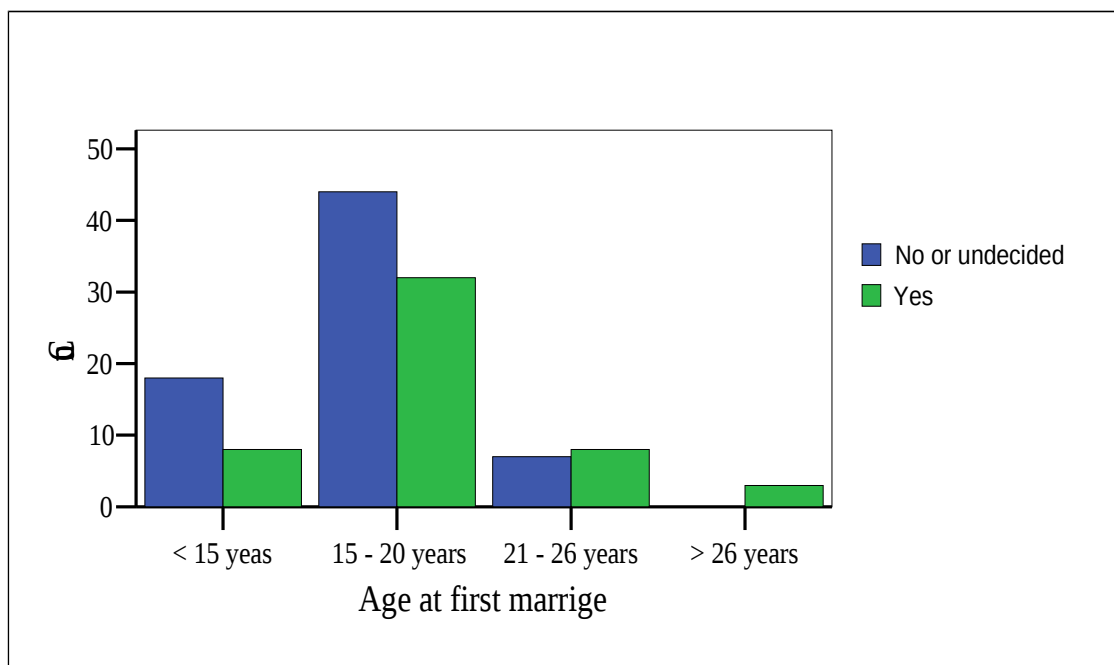


Figure 25: Count of contraceptive use

4.5.3.4 Age at first birth

The age at time when a woman gives birth for the first time may determine her fertility. First births at early ages increase chances for higher fertility. Results in Table 23 show that the number of born children increased with the ages of women at their first births and was significant at ($p < 0.05$). While there was no woman with more than nine children among those who gave birth for the first time at age above 20 years, all women who gave birth for the first time after had passed 25 years reproduced not more than six children. Meanwhile all children who were born the tenth or more were born by women who gave birth for the first time at age below 21 years. This informs us that births at low ages contribute much to fertility levels (NBS, 2005), though some variations can be observed due to increasing contraceptive use.

4.5.3.5 Household size

The study noted farther that fertility has much influence to the household size than any other factors in the study area. It was found that households which had few members had reproduced few children and vice versa and it was significant at ($p < 0.05$). Results in Table 23 show that more than half (54.5%) of interviewed women living in households with 4-6 members had reproduced less than four children.

But more than three quarters of interviewed women living in households with more than 10 children had reproduced more than nine children. In this case fertility influences the household sizes and this implies that larger families are likely to be the result the number of children born at these particular households.

Table 24: Relationship between socio-economic and cultural factors and fertility

Variable	Number of children				X ²
	< 4	4 - 6	7 - 9	> 9	
Education					
None formal	19.0	42.9	19.0	19.0	0.000
Primary	15.3	31.9	44.4	8.3	
Secondary	59.3	40.7	0.0	0.0	
Main occupation					
Civil service	57.1	42.9	0.0	0.0	0.030
Petty trade	20.0	20.0	50.0	10.0	
Farming	21.9	36.5	32.3	9.4	
Income (asset index)					
Poorer women	33.3	28.6	33.3	4.8	0.161
Poor women	21.6	51.4	21.6	5.4	
Rich women	22.0	29.3	34.1	14.6	
Value of children					
Low attitude	30.6	37.1	27.4	4.8	0.440
Uncertain	0.0	37.5	50.0	12.5	
High attitude	24.0	34.0	30.0	12.0	
Sex preference					
Undecided	12.5	37.5	50.0	0.0	0.427
Daughters	38.5	30.8	23.1	7.7	
Sons	19.1	42.6	31.9	6.4	
Both sexes	23.1	30.8	30.8	15.4	

4.5.3.6 Education and fertility

Education is one of the strongest determinants of fertility. Education and fertility in the study area were significant at ($p < 0.05$). Usually, the difference between levels of education on reproductive behaviour is notable because it involves years of schooling. It was found that fertility of women with secondary education was lower than women with primary and those with none formal education and they showed inverse relationship. Results in Table 24 show that all women with secondary education level had no more than six children with 60% having less than four. About 65% of women with none formal education had more than seven children, with 18.8% having more than nine children.

In the previous section, that is, section 4.2.3 it was noted that there were villages with more educated women than the others. It was found that villages with low educated women had higher fertility than villages with high educated women, though they did not show

significance ($\chi^2 = 0.236$). Results in Fig. 26 show that Mwanzugi village which had more women with secondary education had low fertility compared to Isugilo village with more uneducated women.

In Mwanzugi village 20% of interviewed women had more than seven children while they were more than half in Isugilo village. The same results were reported in the study by (Tulloch, 2008) in Zimbabwe and concluded that if a girl stays in school, she will probably interact with boys as equals, and gain the opportunities and skills to do things other than having children. However, the relationship between education and fertility is much more complex. Though the underlying pattern most commonly known shows a negative relationship, there are instances where positive relationships at very low and very high levels of schooling have been found (Ayoub, 2003).

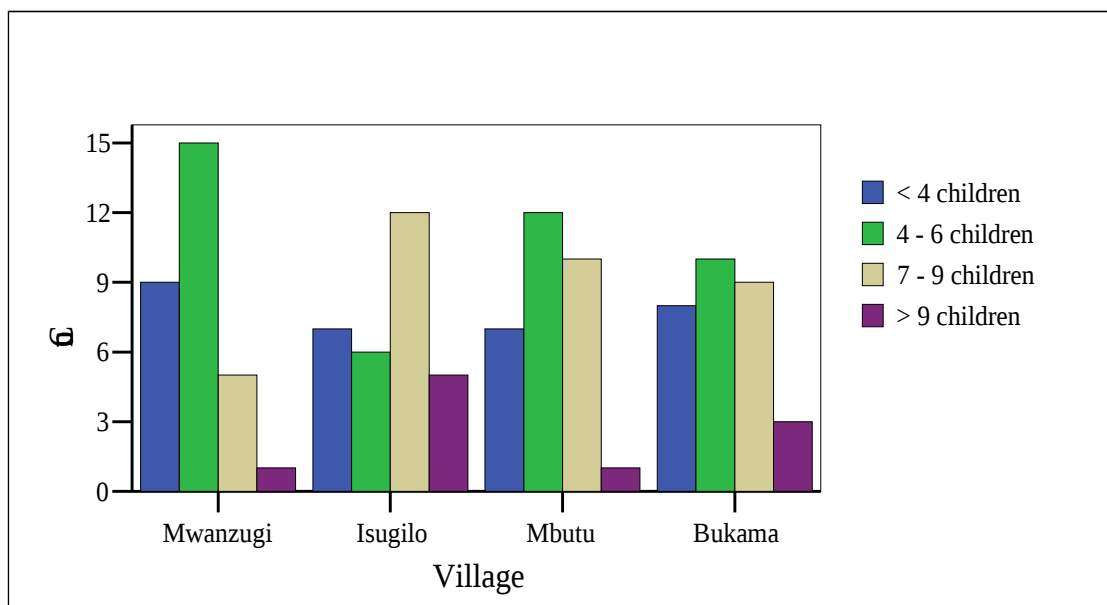


Figure 26: Fertility by village in relation to education level

4.5.3.7 Main occupation and fertility

In comparing the main occupation and fertility of the women in the study area it was found that occupation much affected fertility and was significant at ($p < 0.05$).

The employed women had lower fertility compared to those in farming and petty trade. Results in Table 24 show that more than half (57.1%) and half of civil servants and petty traders, respectively, had born less than four children while more than 45% of farmers had born more than seven children. furthermore results show that all women who had more than nine children were farmers. Working women (and traders) commonly postpone childbearing as a way to coordinate their work and domestic role (Martin, 2000). Thus, increased availability of office jobs is considered suitable for women on contraceptive innovation (Goldin, 2006).

4.5.3.8 Income and fertility

In comparing women incomes and fertility levels the study found that although the differences in fertility between high income and low income women was small, fertility of the high income women was higher than in their counter parts. However, no significance was observed in the relationship ($\chi^2 = 0.161$). Results in Table 24 show that about 15% of high income women bore more than nine children while among low income women only 4.8% bore more than nine children. These findings are unlike that by Tulloh (2008) who observed that poor households prefer many to few children for security. They want to be assured that the children they already have will survive. Other studies such as that by NBS (2005) confirmed that the ideal number of children declines as the income increases and vice versa.

These results should be taken with caution since most of the items (assets) listed in the questionnaire such as cattle, goats, chicken, and land might have favoured the women with high fertility and actually who were poor. Most of these assets were in the farmers who

have been observed in section 4.6.2.2 above to have high fertility. However, some studies show that it has been observed in some wealthier countries that among employed women (high income earners) fertility is high. That is, the countries that are characterized by the highest level of female employment are also those that have high fertility rates (Recoules, 2008).

4.5.3.9 Value of children and fertility

The relationship between fertility of women with low attitude and those with high attitude toward value of children was very minimal with no any significance ($\chi^2 = 0.440$) as it is indicated in Table 24. Both women with high attitudes and those with low attitudes had reproduced almost equal numbers of children, mainly, in the categories of 4 – 6 children and 7 – 9 children as it is indicated in Table 24. However, low attitude lowered the desire for an additional child and caused women to have less of them. It was found that about 5% of women with low attitude had more than nine children compared to 12% of those with high attitude. However, the study concludes that although overall attitude as observed in section 4.4.1.2 shows a high percentage of women with low attitude toward value of children, it is possible that they had come to change attitude after feeling the pinch (cost) of rearing children. Also age might have contributed to having high fertility but with low attitude toward value of children as it was reported by Sasu (2007).

4.5.3.10 Sex preference and fertility

Sex preference, particularly son preference is one among underlying factors which contribute much to fertility in Tanzania (URT, 2006a). Fertility in the study area too might have been contributed by son preference. Results in Table 24 show that although the variable did not show any significance ($\chi^2 = 0.427$) women who preferred sons to daughters had more children compared to those with preference in daughters. About 46%

of women with preference in sons had more than seven children compared to about 31% of those who preferred daughters to sons. Same findings were reported in Egypt where mothers with only girls were more likely to prefer a son as compared to those with boys only (El-Gilany and Shady, 2007).

4.6 Relationship between Women’s Empowerment and Fertility in Rural Areas

4.6.1 Regression model

It should be noted that fertility as it is clearly stated in section 4.3 is measured by using ASFRs, TFR, and MNCB. In section 4.5.3 the independent contribution of each variable to fertility has been noted. However it is not possible to ascertain the contribution of each factor on fertility of women without using statistical analysis. A regression model of equation 3 described in section 3.6.6 of Chapter Three was developed and a number of factors were modeled against the number of children born per women. In this section the measures of women’s empowerment used in this study were analysed together with factors for fertility in order to verify their strengths or weaknesses on contribution to fertility. Table 25 defines and provides the descriptive statistics of the variables used in the regression model.

Table 25: Variable definitions

Dependent variable	Description	Mean	SD
Dependent Variable			
Fertility	Number of children born per woman	5.54	2.493
Independent variables			
Age	Years since one was born	34.74	7.513
Age at first marriage	Age (in years) when one first married	18.01	3.798
Age at first birth	Age when one gave her first birth	18.88	2.643
Marital status	State of been or not been married to	1.52	0.953
HH size	Household currently residents	6.54	2.466
Occupation	Legal activity for one to earns life	1.73	0.673
Income	Women’s asset in index	2.68	0.673
Education	Woman’s education level	1.99	0.835
HH economic decisions	Level of HH economic decisions	2.80	1.607

Mobility	Level of freedom of movement	2.43	1.850
Coercive control	Level of coercive control	1.29	1.233
Contraceptive use	Knowledge of FP and contraceptive use	3.02	1.372
Family size decisions	Women's level of family size decision	2.36	1.748

4.6.2 Results of regression analysis

In this analysis, the number of children born per woman (dependent variable) was modeled against independent variables indicated in Table 26. To test the relationship outlined earlier, a multiple regression model was estimated using beta weights and confidence intervals for all variables. Table 26 illustrates the parameter estimate for independent variables on the dependent variable.

Table 26: Multiple regression model to explain factors responsible for fertility

Independent variables	Coeff.	SE	Beta	t	Sig.
(Constant)	6.579	1.532		4.294	0.000
Age	0.896	0.095	0.535	9.404	0.000*
Marital status	-0.270	0.147	-0.103	-1.838	0.069**
Age at first marriage	-0.487	0.241	-0.130	-2.023	0.046*
Age at first birth	-0.695	0.280	-0.172	-2.486	0.014*
Household size	0.594	0.177	0.173	3.361	0.001*
Education	-0.873	0.260	-0.236	-3.354	0.001*
Main occupation	-0.366	0.275	-0.099	-1.331	0.186
Income (assets index)	0.031	0.153	0.010	0.200	0.842
HH economic decision	-0.168	0.093	-0.108	-1.813	0.073**
Mobility	0.032	0.071	0.024	0.449	0.654
Coercive control	-0.146	0.108	-0.072	-1.356	0.178
FP and contraceptive use	-0.068	0.100	-0.037	-0.678	0.499
Family size decision	-0.215	0.084	-0.151	-2.563	0.012*

* = Significant at ($p < 0.05$); ** = Significant at ($p > 0.05$); $F = 0.000$; $R^2 = 0.755$

Results from multiple regression in Table 30 show a significant model at $R^2 = 0.755$ and significant F value 0.0000 meaning that the model is significant and about 75% of independent variables explain the dependent variable (fertility). According to Mbwambo (2007) there are several points to take into account on regression. Firstly, as the multiple regression coefficient, R is the correlation between the observed and predicted values of

the dependent variable and ranges from 0 – 1. Secondly, R^2 is the proportion of variation in the independent variable explained by the regression model. Thirdly, larger values of R indicate a stronger relationship while small values indicate that the model does not fit the data well, and fourthly, the sample of R^2 tends to optimistically estimate how well the models fit the population.

From these points the values of R^2 are higher enough, indicating that the independent variables significantly correlate with the dependent variable and have relatively low correlation among themselves. However, of the variables used in the model, it is only age of the respondent, age at first marriage, age at her first birth, education, interpersonal coercive control, and her decision making on family size that are significant at 0.05%. Marital status and household economic decision are significant at $p > 0.05\%$. Moreover, of the significant variables, the age of woman contribute more to the model (beta = 0.535). The other significant variables are, (by weight of contribution) education (beta = 0.236), household size (beta = 0.173), age at first birth (beta = -0.172), family size decision (beta = 0.151), and age at first marriage (beta = 0.130).

From these findings it is noted that fertility varies proportionately with some variables but it varies inversely with others. Age (Coeff. = 0.896), and household size (Coeff. = 0.594) vary proportionately with fertility. Their coefficients show positive signs implying that as woman age increases so her number of births if she has to reproduce throughout her reproductive age and as fertility increases in the family the household becomes larger than it was with low fertility though some other factors may contribute to the household sizes. Thus, the two factors positively affect the dependent variable.

The other variables negatively influence fertility. Education level (Coeff. = -0.873), age at first birth (Coeff. = -0.695), family size decision (Coeff. = -0.215), and age at first marriage (Coeff. = -0.487); household economic decision making (Coeff. = -0.168) and marital status (Coeff. = -0.270) have a negative coefficients implying that as they rise the number of born children falls.

CHAPTER FIVE

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Overview

The main objective of this study was to determine the linkage between women's empowerment and fertility in Igunga district Tanzania. The purpose was to provide empirical data for fertility in relation to domestic and sexual and reproductive health related policy recommendations. This chapter is divided into three sections. The first section presents the summary of major findings and conclusions. The second section presents the policy implication and recommendations, and the third section presents the implications for further research as a research way forward.

5.2 Conclusions

5.2.1 Demographic and socioeconomic characteristics

The demographic and socioeconomic characteristics used by the study include age, marital status, education, age at first marriage, age at first birth, household size, occupation, and income of the respondents. All variables influenced fertility as major determinants of fertility and were significant at ($p < 0.05$) implying that they contributed much to fertility in the study area.

The study focused on the reproductive age group of women aged 15-49 years. The mean age was 34.7 years with minimum and maximum ages of 18 and 49 years, respectively. Majority (40%) of respondents were at age group 34-45 implying that fertility level in the study was much contributed by this age group. Marital status showed that majority (72.5%) of respondents was married women. This contributed to fertility in the area as there was big proportion of sexual relations. The study area had high illiteracy level since 40% of respondents had none formal education, few (12.5%) with secondary education, and the

rest having primary education. This situation favours high fertility. Household size was 6.5. This size is higher than the national household size of 4.9 implying that there is high fertility in the area.

The ages of respondents at first marriage and first births were notably low. It was found that more than three quarters and 21% married below 21 and 15 years, respectively. Moreover, more than two third and 13.5% had given birth at age between 16 and 20 and below 16 years, respectively. This situation contributed much to fertility in the study area. The main occupation in the study area was agriculture. This too had effect on fertility since the demand for labour including child labour in such occupation is high. Income (in asset index) of respondents had no significant effect on fertility since the richer women had reproduced many children than the poor. However, it was observed that many assets such as land, bicycle, and sheep indicated in the questionnaires favoured women who were less empowered.

5.2.2 Fertility status

The first objective of this study was to identify the fertility level of women of reproductive age 15 – 49 in Igunga District. The analysis of fertility (the average number of children born per women) employed two measurements of fertility. These are ASFRs and TFR. However, MNCR was used to directly count the number of children ever born by sex and village. The ASFRs based on the reproductive ages (15-49 years) of the respondents which were categorised into seven five-year age groups. The births of the respondents were observed in a period of twelve months prior to the survey. It was observed that neither woman had given birth in the first age group and the highest ASFR was found at age group 25-29, followed by age group 30-34 meaning that these are ages at which reproduction is high. As compared to national ASFRs by 2002 national population census and TDHS

2004-5 the findings correlated. However, the TFR in the study area was 6.5. This is higher than the national by 2002 population census and TDHS 2004-05 which are 6.3 and 5.7, respectively. Therefore TFR in Igunga district and other rural areas as represented, is very high, implying that women in rural societies are less empowered to control their reproductive health and obtain their health rights as stated in the ICPD held in Cairo in 1994.

5.2.3 Socioeconomic and socio-cultural factors for fertility

5.2.3.1 Socioeconomic factors for fertility

Socioeconomic factors used by the study include education, main occupation, and income. Level of education had much influence on fertility and was significant at ($p < 0.05$). It was found that all women with secondary education level had no more than six children with 60% having less than four. About 65% of women with none formal education had more than seven children, with 18.8% having more than nine children. Moreover, villages with less educated women such as Isugilo had higher fertility than villages with more educated women such as Mwanzugi.

Occupation of respondents showed significance on fertility at ($p < 0.05$) while their income in asset index did not. Employed women had lower fertility compared to those in farming and petty trade. It was found that more than half (57.1%) and half of civil servants and petty traders, respectively, had born less than four children while more than 45% of farmers had born more than seven children and that all women who had more than nine children were farmers. Reasons for insignificance on fertility of the income of respondents have been given in section 5.2.1 of this chapter.

5.2.3.2 Socio-cultural factors for fertility

Socio-cultural factors (value of children and sex preference) had low influence on fertility and both were not significant. However, they contributed to fertility as there were more women who preferred sons to daughters, thus, might have contributed to high fertility. Though more women preferred few children the percentages of women preferred many children were not so low.

5.2.4 The extent of women's empowerment

Empowerment as used in this study focused on domestic and sexual and reproductive health empowerment and measured by household economic decision making, freedom of movement, and interpersonal coercive control for domestic empowerment; and knowledge in FP and level of contraceptive use and family size decision making for sexual and reproductive empowerment. The findings showed a low level of empowerment in Igunga district. Although the levels of these measures, for instance in family size decision making, knowledge in family planning and level of contraceptive use, and mobility were relatively high their contribution to fertility decline was low except in family size decision. Levels of household economic decision making and coercive control were low and had low contribution to fertility decline.

5.2.5 Relationship between women's empowerment and fertility

As earlier shown in previous sections of this chapter many variables independently influenced fertility. However it is not possible to ascertain the contribution of each factor on fertility of women without using statistical analysis such as regression model. By multiple regression models, only age of the respondent, age at first marriage, age at her first birth, education, interpersonal coercive control, and her decision making on family size that are significant at ($p < 0.05\%$). Marital status and household economic decision

were significant at ($p > 0.05\%$). From these findings it is noted that fertility varies proportionately with some variables but it varies inversely with others.

Age and household size vary proportionately with fertility implying that as woman age increases so her number of births if she has to reproduce throughout her reproductive age and as fertility increases in the family the household becomes larger than it was with low fertility though some other factors may contribute to the household sizes. Education level, age at first birth, family size decision, age at first marriage; household economic decision making, and marital status negatively influence fertility implying that as they rise the number of born children falls.

5.3 Policy Implications and Recommendations

As per findings of this study presented in the previous chapter women's empowerment is multidimensional, meaning that different aspects of empowerment actually do not necessarily co-vary together. In some aspects of empowerment employed by this study, some women were independent but not in other aspects. For example, as it was noted, a woman may be more decisive in household economic decisions and relatively free from domestic violence (coercion), but at the same time be only moderate in mobility and almost indecisive in family size decision making.

However, though the results here show some risks associated with the use of proxy measures of women's empowerment, the insight provided by the results for the total sample suggests that these risks are lower in cases where the levels of aggregation are higher, that is, when samples are larger enough. Therefore, it is more appropriate to employ direct measures of women's empowerment at an aggregate level, that is, at social context rather than the individual level, when attempting to understand the significance of

empowerment for demographic behaviors because women's empowerment mainly focuses on social systems rather than on individuals.

The main lesson for policy implication of the results presented in this study is that fertility level in rural areas is higher than the national level. TFR in the study area is 6.5 while TFR of Tanzania as per 2002 population and housing census is 5.7 implying that women in rural areas are less empowered. According to NSGRP and MDGs it is difficult to attain development in rural areas since the chief producers in agriculture are women who bear and rear children. The Government of Tanzania and other stakeholders should take initiative in rural areas to empower women domestically and in sexual and reproductive health to increase their decision making for the betterment of their lives, hence for the national wellbeing.

Empowering women in the domestic sphere and in reproductive health ultimately affects their reproductive behaviours. The empowered women will have higher ages at marriage and first birth for girls, greater levels of schooling, greater employment opportunities, greater interpersonal coercive control, and greater decision making in household economies and family sizes. Therefore the Government of Tanzania and other stakeholders including the Ministry of Education and Vocational Training should introduce in the syllabi, from primary education level to higher learning, the sexual and reproductive health education to equip the youth with the knowledge necessary to cater for their future lives.

Governments like Tanzania that promote greater equality between men and women may also tend to promote and sensitise domestic and sexual and reproductive health in the rural society. The community, through the community development sector and civil society organisations, should be educated, sensitized, and mobilized for a change from

discriminating women and girls on important issues such as education and sexual and reproductive health rights to full participation in domestic, political, and reproduction decision making. The marriage law Act should be enforced to check on the ages at first birth and marriage of girls since men continue to marry off their daughters for bride prices regardless of their ages which deprive the girl children of education necessary for their empowerment.

5.4 Implication for Further Research

The data from this research have made it possible to do analysis which has given an insight into the link between women's empowerment and fertility in the surveyed area. However, a lot remains to be done to better understand all factors responsible for higher fertility in the area. The following are recommended for further research:

- There is a need to cover large samples of each socioeconomic grouping in order to determine the underlying factors influencing fertility. This study drew a sample from women only, and few men in the FGDs. Further research is needed to include girls and men.
- The multidimensionality of the measures of women's empowerment provides risks to research results. A research need to be conducted to come out with a common understanding for all researchers in women empowerment measures.
- Differences in ages and education levels of couples may have great effects in women reproductive behaviours. This is another area to be researched to better understand and improve women's empowerment strategies.

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APPENDICES

Appendix 1: Questionnaire for women

SECTION A: HOUSEHOLD INFORMATION

Part 1: Basic respondent's information

Interview date		
Village name	Ward name	
Name of respondents	Ethnicity	
Marital status (Tick whichever applicable) [1] Married [2] Divorced [3] Widowed [4] Single/not ever married		
Age of Respondent []	Age of husband (for married woman) []	Age of household head (if different from husband)[]
Sex of household head [1] Male [2] Female (Tick whichever applicable)		
Origin of household head (Tick whichever applicable) [1] Native [2] Immigrant If immigrant show year of residence []		

Part 2: Members of household currently resident

No	Age	Sex	Relationship	Education	Occupation
1		1 = Male	1 = Father	1 = None	1=Child
2		2= Female	2 = Mother	2 = Primary	2=Student
3			3 = Husband	3 = Secondary	3=Farmer
4			4 = Son	4= Higher	4=Civil servant
5			5 = Daughter		5=Petty trade
6			6 = Other relative		
7			7 = Non relative		
8			8 = Father in law		
9			9 = Mother in law		
10					
11					
12					
Total					

SECTION B: FERTILITY

1. Have you ever given birth to a child in your life?
 1 = Yes
 2 = No
2. How many children did you happen to give birth in your life?
3. Of all your children you gave birth to in your life how many are sons and how many are daughters?
 Sons Daughters
4. Are all of your children you gave birth to alive?
 1 = Are all alive
 2 = some died
 3 = All died
5. If some of them died how many sons died and how many daughters died?
 Sons Daughters
6. Would you remember when you gave birth for the last time? (Please mention month and year of your last birth)
 Month Year
7. At what age were you married for the first time?
8. At what age did you give birth for the first time?
9. Were you married by the time you gave birth for the first time?
 1 = Yes
 2 = No
10. Was it your decision to get married at that age you mention in question 7?
 1 = Yes
 2 = No
11. Why were you married at that age?
 1 = was forced by both parents
 2 = was forced by father
12. You said (in Q. 13) you ever gave birth to such (in number) children, did you plan to have such number?
 1 = Yes
 2 = No

SECTION C: SOCIOECONOMIC FACTORS FOR FERTILITY

In this part I would like to know your level of education, main occupation and your income by asking you the following few questions.

13. What is your level of education?

1 = None Formal

2 = primary level

3 = secondary level

4 = higher level

14. Any legal activity through which a person much depends in earning his/her life is his/her occupation. Would you tell me your main occupation by identifying one of the following types of occupation?

1 = Civil service

2 = Business/petty trade

3 = Farming

15. In the table bellow you are asked to write the assets that you own and have control of them in this household. Please estimate the values of both assets

	Asset	Yes	No	Quantity (If answer is Yes)
1	Land (in acreage)			
2	Iron roofed house			
3	Grass roofed house			
4	Ox cart			
5	Ox plough			
6	Cattle			
7	Goat			
8	Sheep			
9	Chicken			
10	Bicycle			
11	sewing machine			
12	Radio			

SECTION D: SOCIO-CULTURAL FACTORS FOR FERTILITY

Part 1: Value of children

16. Some people prefer to bear many children and others prefer to bear few children. But in each case there are thought to be advantages and disadvantages. For each of the following statements say whether you strongly agree, agree, disagree, strongly disagree (or if you are uncertain) to show your preference.

S/N	Statement	SA	A	U	D	SD
1	There are more costs than benefits by reproducing many children, so having many children makes it difficult to raise them properly	1	2	3	4	5
2	If you have many children you may become rich since they can assist you in doing works	1	2	3	4	5
3	Having many children prohibits family economic advancement, so poverty is due to having many children	1	2	3	4	5
4	Having many children increases respect from the community, so they can make marriage more strong	1	2	3	4	5
5	If you have fewer children you can give them better education and you may become rich when they get employed	1	2	3	4	5
6	Parents with many children have guarantee of security in the old age, hence, it is better to reproduce as many children as possible as some may die	1	2	3	4	5

Key:

1. **SA** = Strongly Agree
2. **A** = Agree
3. **U** = Uncertain
4. **D** = Disagree
5. **SD** = Strongly Disagree

Part 2: Sex preference

17. Some people prefer sons to daughters, others prefer daughters to sons. Now I would like to ask you some questions about your sex preference. Please put a tick against one sex composition that you prefer.

No	Alternative questions	Sex composition	Tick one sex composition
1	If you could have three children in total and be asked to choose one composition: two sons and one daughter; two daughters and one son; three sons; three daughters; and undecided. Which composition would you choose?	3 daughters	
		1 son and 2 daughters	
		2 sons and 1 daughter	
		3 sons	
		Undecided	
2	Suppose you could have the following combination to make choice: two sons and one daughter or three daughters or undecided. What would be your preference?	2 sons and 1 daughter	
		3 daughters	
		Undecided	
3	Imagine you would be asked to choose either of the following composition: two daughters and one son, or three sons, or undecided. What would be your best choice?	2 daughters and 1 son	
		3 sons	
		Undecided	
4	If you could have only two alternatives to choose: three sons or three daughters or undecided: What would be your best choice?	3 sons	
		3 daughters	
		Undecided	
5	What about if you are asked to choose among the following alternatives of four children three sons and one daughter, or two sons and two daughters, or one son and three daughters or undecided: Which composition would be your best choice?	2 sons and 2 daughters	
		3 sons and 1 daughter	
		1 son and 3 daughters	
		Undecided	

SECTION F: DOMESTIC AND REPRODUCTIVE HEALTH EMPOWERMENT**Part 1: Economic decision-making (Scale range: 0 – 6)**

18. Please tell me who in your family decides whether you should work outside the home?

1 = Wife participates

0 = does not

19. Who of these people usually has the greatest say in the decision of making major purchases of the household goods, such as a radio, ox cart, ox plough etc?

1 = Wife

0 = others

20. If you wanted to buy yourself a dress, cloth or shoes would you feel free to do it without consulting your husband (or a senior member of your family)?

1 = Yes

0 = no or undecided

21. If you wanted to buy yourself a small household item; bowl, plate or knife, would you feel free to do so without consulting your husband or senior member of your family?

1 = Yes

0 = no or undecided

22. Do you participate or agree with your husband in deciding which crop and extent to cultivate in a given year?

1 = Yes

0 = No or undecided

23. Can you lend household properties such as *panga*, knife, hoe, and bicycle to neighbours or relatives without consulting or in absence of her husband

1 = Yes

0 = No or undecided

Part 2: Freedom of movement (mobility) (Scale range: 0 – 5)

Do you have to ask your husband or a senior family member for permission to go to:

24. The local market?

1 = Yes

0 = No or undecided

25. The local health center?

1 = Yes

0 = No or undecided

26. Fields outside the village?

1 = Yes

0 = No or undecided

27. A community center, park, or plaza in the village?

1 = Yes

0 = No or undecided

28. The home of relatives or friends in the village?

1 = Yes

0 = No or undecided

Part 3: Interpersonal coercive controls (scale range: 0-3)

29. Are you afraid to disagree with your husband for fear he may become angry with you?

1 = Yes

0 = No

30. Has your husband hit or beaten you?

1 = Yes

0 = No

Part 4: Knowledge of FP and level of contraceptive use (scale range: 0-6)

31. Have you heard of any traditional or modern birth control method?

1 = Yes

0 = No

32. Please mention any one method?

1 = Mentions at least one method correctly

0 = Fails to mention any

33. Do you use contraceptives for birth control now?

1 = Yes

0 = No or undecided

34. Do you use it overtly or covertly?

1 = Yes

0 = No or undecided

35. Have you ever received any sexual and reproductive health education from health workers or from any organization/institution?

1 = Yes

0 = No or undecided

Part 5: Family size decision-making (The scale range: 0 –5)

36. Who of these people usually has the greatest say in deciding how many children to have?

1 = Wife

0 = others

37. Do you discuss and agree with your husband on doing sex?

0 = never

1 = once or twice

2 = more often

38. Do you discuss and agree with your husband on when to conceive and on the ideal number of children to bear?

0 = never

1 = once or twice

2 = more often

Appendix 2: Questionnaire for the public health section – health department

1. What is the annual average number of women who seek or obtain sexual and reproductive health education from you in the district for the past two years?
2. What type of sexual and reproductive health education you have offered to women in the past two years?
3. Would you tell me the child mortality rate (average number of deaths per 1000 children of age below fifth birth day) in the district?
4. Please explain the level of contraceptive use and family planning programmes implemented in the district.
5. Are there organizations in the district which offer sexual and reproductive health education to the community? Please mention them and their activities.

Appendix 3: Questionnaire for the community development department

1. Do you have programmes in the district to empower women? Please explain the activities related to women's empowerment done by the community in the district.
2. Are there injustices done to women by husbands or community in the district? Please explain these injustices and attempts made by the department to solve them.
3. Do men allow their wives and other women from their families to attend and contribute their opinions in public meetings?

Appendix 4: Statements for the FGDs

1. Please let us discuss on the advantages and/or disadvantages of having many or few children and the ideal number of children to bear per couple nowadays.
2. Let us also discuss on the following statement. 'It is enjoyable to have many sons and few or no daughters'
3. It is important to control or space births than to bear children as per God given. What are your views on this statement?