WOMEN RELATED FACTORS INFLUENCING HOUSEHOLD SOCIO-ECONOMIC STATUS IN SELECTED AREAS OF MOROGORO DISTRICT, TANZANIA

EDITH TIBIITA KWIGIZILE

A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY OF SOKOINE UNIVERSITY OF AGRICULTURE. MOROGORO, TANZANIA.

2021

EXTENDED ABSTRACT

In Tanzania, households in rural areas are characterized by low socio-economic status (SES). Although contribution of women on household economy is essential, the relationship between women's socio-demographic and reproductive factors and SES of rural households regardless the sex of household head, have not been fully explored. This study aimed to examine the relationship between women's socio-demographic and reproductive factors on SES of households in Morogoro district in Tanzania. A cross-sectional study was conducted in six randomly selected villages of Morogoro Rural District. A total of 542 women of reproductive age (15-49 years) and their respective households were studied. Data analysis was performed using SPSS version 22 software. Socio-demographic factors that include being older age (≥35 years) [OR 1.26 (95% CI: 1.82-2.94) and residing in villages with better road access [OR 4.08 (95% CI: 2.40-6.94)] relate with higher household SES. Having under five children [OR 0.34 (95%CI: 1.033-2.502] associated with low household SES. Likewise, reproductive factors, the desire to have many children [OR 0.31 (95%CI: 1.17-2.06] associated with less likelihood to attain higher SES of household. Furthermore, being pregnant at >19 years of age was associated with a higher household SES ([OR 1.76; 95% CI: (1.48-3.83), but more than half (56.5%) of the women had their first conception at the age of ≤ 18 years. It was also noted that, there was significant difference in time spent in economic production and family care activities between men and women ($p<0.01$), with women spending 2.23 hours less per day in economic production compared to their male counterparts. This study concluded that women's age, road accessibility to the locality of residence, age composition in households, number of children desired by women and the age at first pregnancy are important factors to be considered for improving household SES in rural areas. Findings from this study calls for economic empowerment of young women and improving the

roads to increase connectivity and transportation thus enhance women engagement in a diverse of economic activities consequently contribute to improving SES of households. Furthermore, sexual and reproductive health education, including use of family planning measures should be strengthened to discourage early pregnancies to promote growth of SES of households. In the other hand, the time spent by women in family care giving activities during economic productive hours should be reduced by improving technology for performing domestic activities. Likewise, access to social services such as clean water and electricity should be improved to easy care giving activities.

.

DECLARATION

I, Edith Tibiita Kwigizile, do hereby declare to the Senate of Sokoine University of Agriculture that this thesis is my own original work done within the period of registration and that it has neither been submitted nor being concurrently submitted at any other institution.

---------- ----------

Edith Tibiita Kwigizile Date

(PhD Candidate)

The above declaration is confirmed by;

---------- ----------

Prof. Msuya, J. M. Date

(Supervisor)

---------- ----------

Dr. Mahande, J. M. Date

(Supervisor)

COPYRIGHT

AKNOWLEDGEMENTS

I express my sincere gratitude to my supervisors Professor John M. Msuya of the Department of Food Technology, Nutrition and Consumer Sciences, of Sokoine University of Agriculture (SUA) and Dr. Michael J. Mahande of the Department of Epidemiology and Biostatistics of the Kilimanjaro Christian Medical University College (KCMUCo), a Constituent College of Tumaini University Makumira for their tireless guidance, invaluable advice, and assistance throughout my training period which has made this study a success.

I thank Professor Arnold J. Temu of Stefano Moshi Memorial University College for encouraging and supporting me particularly in laying down the foundation of this study. I register my thanks for the support from the Management of Stefano Moshi Memorial University College, Tumaini University Makumira for providing logistical support for this work.

My gratitude is extended to the Morogoro District Administrative Officer for granting me permission to carry out this study in Morogoro District. My thanks also go to the District Executive Director (DED), Ward Executive Officers (W.E.Os), and Village Executive Officers (V.E.Os) for their invaluable cooperation during the entire process of data collection. I acknowledge the research assistants and respondents for their cooperation during the study. I appreciate the support I got from various members of academic staff of the College of Social Sciences and Humanities (CSSH)-SUA, particularly from the Department of Development Studies whose constructive criticisms shaped this study.

DEDICATION

This thesis is dedicated to my beloved husband, Prof. Jaffu Othniel Chilongola for the support he provided throughout my struggle!

This thesis is also dedicated to my parents who laid the foundation for my education and whose support and care have made a person in me.

TABLE OF CONTENTS

LIST OF MANUSCRIPTS

Manuscript 1:

The relationship between women's socio-demographic factors and household's SES in Morogoro District, Tanzania. Edith Kwigizile[1], John Msuya[2] and Michael J. Mahande[3]

Manuscript 2:

The relationship between selected women reproductive factors and household SES in Morogoro District, Tanzania. Edith Kwigizile[1] Michael J. Mahande[2] and John Msuya[3]

Manuscript 3:

Time spent by women and men in households on economic and family care activities during productive hours in Morogoro District, Tanzania . Edith Kwigizile[1], John Msuya[2], Michael J. Mahande[3]

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS AND ACRONYMS

ANC	Antenatal Care
CBO	Community Based Organization
CI	Confidence Interval
CSSH	College of Social Sciences and Humanities
DED	District Executive Director
DHS	Demographic and Health Surveys
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
FHHs	Female-headed Households
FYDP	Five Year Development Plan (Tanzania)
GDP	Gross Domestic Product
HDI	Human Development Index
HH	Household
IBM	International Business Machine
IQR	Inter Quartile Range
KCMUCo	Kilimanjaro Christian Medical University College
KMO	Kaiser Meyer Olkin
MCH	Mother and Child Health
MHHs	Male-Headed Households
MoHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children (Tanzania)
NBS	National Bureau of Statistics
NER	Net Enrolment Ratio
NGO	Non-Governmental Organization

NPES	National Poverty Eradication Strategy
NSGRP	National Strategy for Growth and Reduction of Poverty
OR	Odds Ratio
PCA	Principle Component Analysis
SD	Standard Deviation
SDGs	Sustainable Development Goals
SES	Socio-economic Status
SMMUCo	Stefano Moshi Memorial University College
SPSS	Statistical Package for Social Sciences
SUA	Sokoine University of Agriculture
TDHS	Tanzania Demographic and Health Survey
TFR	Total Fertility Rate
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
URT	United Republic of Tanzania
USA	United States of America
VEO	Village Executive Officer
WEO	Ward Executive Officer
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background Information

The concept of socio-economic status (SES) has no universal definition; it is related to social class, social position, occupational status, educational attainment, income, wealth and standard of living (Amaddeo and Jones, 2007). SES has also been defined as an indicator of well-being of members of households that is commonly used to depict economic difference in society as a whole (Kabudula *et al.,* 2017). The concept of SES has been useful in explaining people's living conditions in different communities particularly based at household level. More or less similar terms such as household welfare and/ or poverty levels have been used frequently to express wellbeing of households and individuals (Grootaert, 1999). Family background, kinship relations, location of residence are factors determining social status. However, education, occupation and expanded income are the most fairly visible clues of social class. SES and poverty are inversely related concepts such that the higher the level of SES, the lower the poverty level (Xhafaj *et al.,* 2013). This study applies the concept of SES to study how various women related factors relate with different levels of SES in households.

In Tanzania, efforts to raise SES of individuals, families and communities are mostly reflected in the context of socio- economic development and poverty reduction as shown in different national development plans, policies and strategies. These include the National Five Year Development Plan (FYDP) I and II, the national Strategy for Growth and Reduction of Poverty (NSGRP)/ MKUKUTA I and II, and the National Poverty Eradication Strategy and Rural Development Strategy (URT, 1998; URT, 2016). Understanding the distribution of household socio-economic status (SES) and its temporal

dynamics within a population is critical in ensuring that policies and interventions are adequately and equitably contributing to the well-being of individuals.

1.2 Economic Growth in Tanzania

Following many years of relatively slow growth after independence in 1961, Tanzania's national accounts data report accelerated aggregate growth since around 2000 (Ellis and Mdoe, 2003; Arndt *et al.*, 2015; De Vries *et al.*, 2015; World Bank Group, 2015; Arndt *et al.*, 2016b). Tanzania's economy has continued to perform strongly, growing at 6.7% in 2017 to 2018, driven by good performances in construction, mining, transport, and communication sub-sectors. Growth was projected to remain above 6% in 2018 and 2019, making Tanzania one of the fastest growing economies in Eastern Africa (World Bank Group, 2015; URT, 2016; URT, 2018). Despite reports that Tanzania has recorded impressive macroeconomic performance in recent years, poverty has been slow to respond to economic growth (Mashindano, and Maro, 2011; World Bank Group, 2015).

Low socio-economic status has remained a challenge for sustainable development whereby macroeconomic growth is not clearly reflected in increase of household SES especially in rural areas. Official estimates from the Household Budget Survey (HBS 2017-2018) indicate that poverty is reported to be higher in rural (31.3%) than in urban areas (15.8%) (URT, 2019a). Basic needs poverty has declined from 34.4% to 26.4% in 2018. Similarly, 8.0% of the population are food poor (extremely poor) i.e. they fall below the food poverty line. Extreme poverty is more pronounced in rural areas (9.7%) than in urban areas (4.4%) (URT, 2019a). The United Republic of Tanzania's 2017 Human Development Index (HDI) of 0.538 is above the average of 0.504 for countries in the low human development group and above the average of 0.537 for countries in Sub-Saharan Africa (UNDP, 2018). In addition, in terms of quality of human development,

based on 13 selected indicators which basically are associated with the quality of health, education and standard of living, Tanzania performs better than at least two thirds of the countries in the low human development group.

In Tanzania, the reduction of poverty was coupled with improvements in living conditions, though from low levels (Arndt *et al.,* 2015). The poverty rate in Tanzania has remained stagnant despite the reported robust annual economic growth. This apparent discrepancy between economic growth and poverty reduction has raised concerns among policy makers and researchers, leading to a consensus that this mismatch needed to be addressed with a sense of urgency (Demombynes and Hoogeveen, 2004; Treichel, 2005; Hoogeveen and Ruhinduka, 2009a; Hoogeveen and Ruhinduka, 2009b; Atkinson and Lugo, 2010; Mkenda *et al.*, 2010; Mashindano *et al.*, 2011; Noel, 2012; Kessy *et al.*, 2013; URT, 2018a; World Bank Group, 2019). Consequently, there is a need to explore what contributes to remaining in low living status.

Despite these policies, more than half of the poor and rural dwellers still live in disgraceful housing conditions and lack important assets (URT, 2018). Access to basic infrastructure (electricity, piped water) also remains limited (Arndt *et al.,* 2015). According to the 2016 World Bank report, it is estimated that around 12% of those at the bottom of the consumption distribution remained trapped in persistent poverty and about 13% of the middle-income population has moved down to the lowest quartile (bottom 25%) of the consumption distribution (World Bank, 2014; World Bank Group, 2016). Agriculture remained the backbone of the economy in the country largely exercised in rural areas.

From a macroeconomic perspective, agriculture plays a dominant role in the economy, accounting for nearly 30.1% of the Gross Domestic Product (GDP), followed by construction (15.0%), Trade (11.0%), public administration (7.5%), manufacturing (5.5%) and mining (4.8%) (World Bank Group, 2015; URT, 2019b). Agriculture provides about 66.9% of employment, accounts 30% of exports and 65% of inputs to the industrial sector and 82% of the labour force (URT, 2019b). In recent years, gold production has increased to about 35% of all exports (Mkenda *et al.,* 2010; Mashindano *et al.,* 2011; URT, 2016b; URT, 2018a; World Bank Group, 2019). In Tanzania, agriculture is important not only to macro-economic development but also to households and individual farmer's incomes. It is also important to food security.

1.3 Factors Related to Households' Socio-economic Status (SES)

Household SES status is influenced by many factors. In poor countries, incomes are very low and barely reach subsistence levels (Alvi and Dendir, 2009). A large number of theoretical positions have been articulated to explain the determinants of poor household SES in rural areas (Brown and Hirschl, 2010). The determinants are mainly categorized as factors that focus on characteristics of poor households themselves, factors that focus on opportunity structure of residence and workplace and factors that focus on government programs (Brown and Hirschl, 2010). Based on the same source, the following factors are considered important: Human capital endowments and labour-force attachment of adult household members, demographic composition (age and minority status of adult members) and households' family structure and living arrangements. However, it is acknowledged that the relationship between these factors and household SES differ with residence.

Based on household attributes, human capital of the head of a household is associated with SES of her/ his household. Similarly, the age is associated with household SES whereby households headed by youth were more likely to be of poor SES (Brown and Hirschl, 2010). Other factors related to household attributes that diminish household income include labour-market, availability of adult household members, human capital, parenting responsibilities, work-limiting disabilities, old age, or geographic isolation from sources of employment and earnings. It is proposed that higher levels of education, supporting agricultural growth policies in rural areas and reallocation of labour into the formal sector of the economy will prove effective in improving SES of households (Gounder, 2013). The participation of women and men in production in rural settings differ. Previous researchers suggest that in rural areas, in contrast to men, women's labour is constrained hence policies should focus on freeing women's labor time for agricultural activities (Orvis, 1985).

The relationship between household size and SES is explained in different ways. A number of studies have reported an apparent ambiguity in the relationship between household size and SES. This could be because the relationship trends vary depending on the methodology used to test the relationship (Kamuzora and Mkanta, 2000; Mwisomba and Kiilu, 2002). For example, when SES is measured based on per capita, larger households are more prone to lower household SES than smaller households (POVERY, 2002). However, this is not always the case whereby a positive correlation between household SES and household size has been reported in Kilimanjaro Region of Tanzania such that larger-sized households tended to have higher SES than others (National Bureau of Statistics and Macro, 2011).

It is reported that, conflicting relations between household size and household SES are possible especially when there are many children and adult dependants in the family (URT, 1998). For example, a strong positive correlation is reported between low SES and family size in most developing countries (Arpino and Aassve, 2013; Anyanwu, 2014). As far as low SES is concerned, having children is usually found to increase the tendency of a household to be categorized as low SES, which can be explained by a higher dependency ratio resulting in a dilution of household economic resources (Musgrove, 1980; Schultz, 2006). The effect of having children has been reported to be ubiquitous as it can affect many microeconomic behaviors such as labour supply or expenditure decisions (Scholz and Seshadri, 2007).

1.4 Women and Socio-economic Development

Women play a vital role in socio-economic development, the improvement of people's lifestyles through improved education, incomes, skills development and employment. They (women) participate in agricultural activities to produce both food and cash crops, they support food security and participate in other formal and non-formal employment sectors as teachers, nurses, labour in industries etc. (Kotzé, 2003). Nevertheless, most of their work remains un-recognized despite the fact that their contribution to the family is important (Sidh, 2011). In addition, women give birth and are obliged to raise the kids hence ensuring continuity of availability of labour force in different production sectors. Women also support other people who provide labour force by giving care services (preparing food, caring family especially young children, elders and the sick, keeping houses etc.).

Above all, it is noted that women's proportion as work force in agriculture, the source of livelihood particularly in rural areas is large. Women constitute more than a half (52-54%)

versus 48% for men in the agriculture sector while they make 55% (versus 45% of men) in ‘petty’ trade (Leavens and Anderson, 2011; FAO, 2014; MoHCDGEC, 2015). On the contrary, men dominate in manufacturing, construction, transport, and finance sector. For example, in manufacturing sector, where the waged employment rate is the highest, the proportion of women is small only 18.6% of the employees (Ellis, 2007). Only 4.0% of employed women are in paid jobs, in either the formal or informal sector, as compared to 9.8 % of men who are in paid jobs (Leavens and Anderson, 2011; FAO, 2014; Kuzilwa and Mpeta, 2017; URT, 2018a; URT, 2019b).

The overall labour force participation rate (including the informal sector) of women is at 80.7%, which is higher than that of men (79.6 %) (URT, 2019b; URT, 2002). Since women dominate in informal employment, they are likely to be prone to being excluded from non-wage benefits such as health insurance, pensions, paid sick leave and maternity leave (Jayachandran, 2019). The Employment and Labour Relations Act of 2004 in Tanzania (Article 33) provides for entitlement of at least 84 or 100 days paid maternity leave if the employee gives birth to one or more than one child at the same time respectively (URT, 2004; Magalia, 2004). However, such an opportunity is rare in rural areas where formal employments are scarce. Therefore, it can be noted that women play a big role economically and socially since they are also central for family care.

Worldwide, findings show that supporting women contributes to economic growth and investing in women is central to sustainable development. For example, the increased participation of women in the labor market has not only narrowed the gender poverty gap but also shown the importance of women in socio-economic development. A study conducted in Dar-es Salaam showed that, there was no significant difference between men

and women headed households in poverty levels though women were persistently slightly below men in both income and education levels (Mwakaje, 2010).

1.5 Women and Household Socio-Economic Status

Household economy is important especially in rural areas where formal employments are scarce. According to Ironmonger (2000), this economy include production of goods and services by members of a household, for their own consumption, using their own capital and their own unpaid labor. Due to women's responsibilities of caring the families, they are good participants of this (household economy) which are recognized as an important sector for economic production (Ironmonger, 2000). These include participation in agriculture and other occupations as well as selling different commodities and produces. The contribution of rural women in the household economy is substantial and important part of rural economy (Kung and Lee, 2010). Women are vital human resource in the improvement of the quality of life because their earning is crucial for family survival and its improvement. Based on the role played by women in the economy, it is inevitable to consider women as fundamental for household socio-economic development. In Kenya for example, rural women represent the major constituency and socio-economic consideration (Okeyo, 1979).

Demographic factors influence the underlying growth rate of the economy, structural productivity growth and living standards, saving rates, consumption and investment (Mester, 2018). Moreover, demographic changes influence the long run un-employment rate, housing and marketing trends and the demand for financial assets. It is argued that demographic factors can lower labour input and population growth. The implication of this argument is that on family or household level, the factors (demographic) influence household size and labour supply for the households. A study conducted in Pakistan

suggests that many demographic, social, cultural, religious, and economic factors negatively influence the women's productive potential (Jabeen *et al*., 2020).

Likewise, reproductive factors are reported to influence socio-economic development. For example, Nigeria is the most populous country in Africa. It has policies and programs geared towards improvements of its socio-economic standing but the results are low due to the population growth and size (Osili, and Long, 2008). This population size reflect fertility in the country. However, this is not surprising especially in African cultures where children secure conjugal ties, offer social security, assist with labour, confer social status, secure rights of property and inheritance and maintaining the family lineage and satisfy emotional needs (Dyer, 2007). For example, female education is associated with having fewer children. Therefore, in the current era, whereby socio-economic development is a global concern, demographic and reproductive factors should be given attention.

In the World, women are closely related to poor SES. Scholars have often used the phrase 'feminization of poverty' when referring to women and poverty. McFerson (2010) upholds that poor SES among women originates from exclusion, lack of opportunities and little or no income or assets. In the African context, a possible reason for relating women and poor SES is the fact that women face many barriers when attempting to access education, careers, and economic resources. In addition, women are susceptible to poor SES due to multiple factors including inequalities engrained in cultural practices, which favour male control of resources; lack of productive assets; limited economic opportunities; weak attachment to the labour market; lower average earnings; and other gender-based injustices (Demombynes and Hoogeveen, 2004; McFerson, 2010; Leavens, 2011; Fatihiya and Kenneth, 2017; Maloiy, 2018). Most of the factors that link women

with low SES are compounded with women's disadvantage in education and training as well as rare policy support to parenting women (Chant, 2003). Therefore, the factors that relate women and poor SES are many and some of them are explained below as well as the proposed mechanisms for the relationship.

1.5.1 Access to formal education and attainment of skills in relation to SES

Education is an important aspect of social and economic development (World Bank, 2010; 2014). Access to formal education is believed to affect women in different ways including occupation, risk of poverty, dependence and the quality of life and their off springs (Hofferth *et al.,* 2001; Javed *et al.,* 2008). Previous researchers have showed that education increases the skills and productivity of poor households, improves income, helps to accumulate wealth, and hence raises the living standards (UNESCO, 2000; Awan *et al.,* 2011). Generally, education is believed to improve individual capabilities to perform certain activities and is highly associated with various socio-economic variables such as life-skills for both individuals and societies (MoHCDGEC and MoH, 2015; URT, 2018a; MoFP-PED and NBS, 2019). Based on literature, it can be noted that access to formal education and attainment of skills remain important for women socio-economic development. Nevertheless, there is ample literature that reports the 'non-return' gap of education attainment on improved SES through agriculture.

Studies in Africa and Asia report an absence of effect of basic education on the improvement in household SES, but presence of an association between attainment of tertiary education of household's bread earners and better household SES (Javed *et al.*, 2008; Kurosaki, 2009; Awan *et al.,* 2011; Himaz and Aturupane, 2011; Ogundari and Aromolaran, 2014). Due to poor access to education, generally women have lower levels of education, skills and knowledge as well as the capacity to acquire information

(UNESCO, 2011; URT, 2018b; URT, 2019b). The limited acquisition of income generation skills among women is one of the main reasons of their association with poor SES. According to 2017-18 Human Development Report, about 24% of females and 19% of males had no formal education in Tanzania by 2015 (URT, 2019).

Although gender disparity in access to education has been narrowing recently in terms of school enrolment and drop-out rates, still boys have better indices for education attainment compared to girls (URT, 2019b). Proportion of women is still low in some fields of studies. For example, according to the National Bureau of Statistics (2017), the proportion of women is smaller in Sciences and Allied Technology, Health and Allied Sciences while they are many in Teaching and Learning Facilitation as well as Business, Tourism and Planning.

1.5.2 Female headship of households

Female headship is one of the factors frequently reported to be important in determining poor SES of households. Using data from a total of 43 Demographic and Health Surveys (DHS) conducted between 1990 and 1998, Bongaarts (2001) found that the proportion of households headed by women ranged from 13% in the Near East and North Africa to 24% in Latin America, while in Asia it was 16%. Large variation was also exposed within regions, especially in Africa, where the proportion of Female-headed Households (FHHs) around 1990s was less than 10% in Burkina Faso, Mali and Niger, and over 30% in Ghana, Kenya, Namibia and Zimbabwe.

In general, 26 % of all households in Africa are headed by women (Milazzo and Van de Walle, 2015). In Tanzania, the findings of the Household Budget Survey 2017/18 indicate that poverty is associated with the sex of the household head whereby 27.4% of FHHs are

poor by basic poverty measurement (URT, 2019). On the other hand, 8.1% of male headed and 7.9% of female headed households are in food poverty (URT, 2019). Mechanisms for the linkage between female household headship and poor SES have been proposed to be diverse. Some of the proposed explanations include being single bread earners, being constrained on socio-economic mobility due to cultural, legal and labour market barriers (Kabeer, 2003c; Chant, 2004; Milazzo and Van de Walle, 2015). FHHs are also related to lower productivity due to less labour input, less training and poor access to information about new technology (DeGraff and Bilsborrow, 1993).

1.5.3 Cultural and traditional factors

In African communities, prevalent attitudes and beliefs influence women's output in terms of SES (Ellis, 2007; Paule-Paludkiewicz *et al.*, 2016). Literature shows that lack of gender equity in sub-Saharan Africa constrain economic development for women and society as a whole (Peterman, 2011). Cultural norms subordinate women to men; they also have a pervasive impact on social and economic life. For example, in many communities, it is believed and accepted that women, and only women, are responsible for almost all of the housework, food preparation and child care. Many Tanzanian ethnic groups continue to live in a male-dominated, patriarchal society. In patrilineal societies of eastern and southern Africa, the means of production in the form of land and cattle, as well as cash incomes from farm production and employment, are indisputably under the principal control of men (Hakansson, 1994). Men spend most of their time with the cattle, which primarily serve as symbol of status; literally the more cattle a man has the more revered he is in his community.

For matrilineal society, whereby the kinship is traced through female line, for instance, married couples rarely pool their resources together for the benefit of the conjugal family

unit (Takyi and Gyimah, 2007). Therefore, despite some changes due to various interventions, basically, the roles of women have not radically changed. Their lives still revolve around their children and their homesteads. They continue to wake up in the early morning, maintain the fire, prepare breakfast and attend to the children, and travel, often long distances, to fetch water and firewood (Blackden and Wodon, 2006).

1.5.4 Constrained participation of women in labour market activities

Women spend more time in non-paying activities which compromises their time on economic activities. Studies in Tanzania report a greater participation of women in providing unpaid domestic services for own and family use within households while men spend more time on income generating activities (Blackden and Wodon, 2006; Kes and Swaminathan, 2006; Antonopoulos, 2008; Cawthorne, 2008; Ferrant *et al.,* 2014; MoHCDGEC, 2015; Maloiy, 2018). Women perform a variety of activities which constrain their participation in labour market.

1.5.4.1 Multiple roles

Women perform multiple roles (World Bank, 2010; MoHCDGEC, 2015). The roles performed by women are defined within the concept of gender division of labour that analyses activities performed by men and women. Literature indicates that women perform multiple roles in households and in the society (Cawthorne, 2008c; World Bank, 2010; NBS and Macro, 2011a; MoHCDGEC, 2015). They (women) mainly perform productive, reproductive and community management role (World Bank, 2010; McFerson, 2010; NBS and Macro, 2011a; MoHCDGEC and MoH, 2015). It is further suggested that these roles are socially determined, implying that they differ from one society to another. Women perform multiple roles as mothers, wives and workers (Miller *et al.,* 1991). Tanzania is one of the countries where the burden of unpaid labour is large

in households due to underdeveloped domestic technology (Ellis, 2007; Leavens, 2011). As a result of multiple roles, women spend significant time in domestic tasks and especially in walking long distances that is related to domestic tasks (Leavens and Anderson, 2011).

1.5.4.2 Involvement in reproductive roles in addition to productive roles

In totality, reproductive role constitutes a set of activities related to the creation and sustaining the family and the household (Komatsu *et al.*, 2015b). It includes not only biological reproduction but also physical roles such as care and maintenance of family members (Bibler and Zuckerman, 2013). Activities related to preparation of meals, laundry, cleaning, household maintenance, personal care and domestic works such as water and firewood fetching, caring for children, the sick and the elderly and those with disabilities, as well as shopping are parts of reproductive work (Blackden and Wodon, 2006a; Komatsu *et al.*, 2015).

Women are more likely to be providers of unpaid care within the household that include among other things, keeping household members fed, including preparing food and producing food crops on the garden plots. Other activities are maintaining household well-being, including collecting and transporting water and fuel as well as supporting men in their income-generating activities and tending cash crops (World Bank, 2010; Leavens and Anderson, 2011). Care responsibilities performed by women overlap with economically productive years, hence making women specifically vulnerable to shortage of productive time due to multiple demands on their time (Pressman, 2003a; Boudet *et al.*, 2018). Despite being overburdened with un-paid care work for women, currently there are some change in attitudes that bring improvement in shearing responsibilities. In modern society; men and women are increasingly expressing similar attitudes about balancing

home life and work. This is termed as gender convergence (Kan *et al.,* 2011; Skopek and Leopold, 2019).

1.5.4.3 Consequences of poor reproductive health outcomes among women

Poor reproductive health outcomes such as early childbearing, maternal mortality/ morbidity and unintended/untimely pregnancy have negative effects on overall health (Gribble and Haffey, 2008) and, under certain circumstances, on education and household well-being (Greene and Merrick, 2008). Early pregnancy and childbearing are widespread in poor countries (Greene and Merrick, 2008). Teenage pregnancy is a major health concern because of its association with higher morbidity and mortality for both the mother and child (NBS Tanzania and Macro, 2011; URT, 2019a), with consequences related to poor household SES. Morbidity is the state of being symptomatic or unhealthy for a disease or condition while mortality is related to the number of deaths caused by the health event under investigation (Hernandez and Kim, 2019). The loss of women's contributions due to death or illness combined with the spending shock they face can force households, particularly those already vulnerable, into poverty defined as poor SES (Koenig *et al.,* 1990; Klein, 2005).

1.5.5 Poor participation in decision making

Participation of women in decision making is minimal (Miranda, 2005). This situation is related with poor SES through various mechanisms that include little access to productive resources, poor participation in economic opportunities and little access to economic benefits. The factors affecting participation of women in decision making are many and diverse. They include socio-demographic barriers; economic barriers; time factors; structural barriers; gender stereotypes; structural barriers; male resistance. Previous authors suggest that creating opportunities for the institutionalization of women's visible

involvement in decision-making in Africa will strengthen the acceleration of sustainable developmental goals on the continent (Ilesanmi, 2018). For example, it is reported that many women especially in developing countries are negative to participation in elective position in public office or appointed to a decision-making position in government because the methods employed include the illegal and the unethical to win in elections and assume power (Miranda, 2005).

1.6 Women's Ownership on Household Wealth

The extent to which ownership rights are vested in one individual varies across and within countries depending on the legal frameworks and social norms (UN, 2019). Likewise, in many developing countries, particularly in Asia and Africa) Women may be legal owners of assets, but due to gendered norms, men may actually control and manage the assets and often never report women as owners (Swaminathan *et al.*, 2020. Based on the study conducted in Bangladesh, the average annual women's contribution to household income was estimated at about 43.52% of the total household income (Roy *et al.*, 2017). In Australia, data about income and wealth show that home-ownership among young women aged 18 to 39 was 35.7% in 2002 and 25.2% in 2014.

In Tanzania, a study conducted in Morogoro District shows that women spend the income from farm activities on house construction, purchasing assets such as a bicycle or radio, payment of school fees, and buying food and farm inputs. The income from other sources is normally spent on clothes, soap, kitchen utensils, cosmetics and food items such as sugar, salt and cooking oil (Lyimo-Macha and Mdoe, 2002). Therefore, it can be noted that women engagement in income generating activities allows women to contribute to household wealth accumulation either direct by purchasing assets or indirect by supporting other household needs important for consumption. Making available the basic

needs at households allows men (if there is any in household) to use their income for purchasing assets.

1.7 Tanzania Government Efforts to Address Barriers for Women Participation in Economic Productivity

In recognizing the challenges that face women in the context of their participation in economic productivity as narrated in section 1.6, the Government of Tanzania has made commendable efforts in this issue. As part of its commitment to achieve the Sustainable Development Goals (SDGs), relating to the empowerment of women, Tanzania has aggressively addressed gender issues in the following important areas in terms of socio-economic development. First, the National Development Vision 2025 aims to attain "gender equality and the empowerment of women in all socio-economic and political relations and cultures" (URT, 1998; URT, 2018b). Second, the 2005 National Strategy for Gender Development insists promotion of gender equality in development aspects (URT, 2016b; URT, 2018b).

Third, Tanzanian Parliament has enacted a number of laws in support of women's economic and social well-being that include the Employment and Labor Relations Act of 2004 (URT, 2004; World Health Organization, 2005). The Act prohibits discrimination in the workplace on the basis of gender. Fourthly, gender budgeting processes are being institutionalized in all government ministries, as well as regional and local authorities in which 10% of local authorities' revenues must be accessed by women as soft loans for undertaking economic activities (URT, 1998; URT, 2016a). However, the desired change has not yet been attained. According to the Tanzania Five Year Development Plan 2016/17-2020/21 (URT, 2016), social and economic disadvantages have persisted to women. For example, the yields per hectare in agriculture are still lower on land worked

primarily by women compared with that on land worked by men (URT, 2016). As such, more interventions are needed to overcome the challenge facing women on economic development.

1.8 Problem Statement

The SES of majority of households in rural areas of Tanzania is low (URT, 2018). This is shown by the proportion of population which lives in poverty. Based on the 2015/16 Tanzania National Household Survey, 80% of rural population is in the three lowest wealth quintiles whereas 88% of the urban population belongs in the two highest wealth quintiles (URT, 2018). This implies that only small proportion of the rural population is living in higher wealth quintiles with better living conditions compared to urban population. Based on head count ratio, 55% of households in rural Morogoro are poor (Lusambo, 2016).

The productive sector in rural Tanzania is dominated by women who provide 54% of the labour force in agricultural (Leavens, 2011). Despite this fact, with regard to SES, rarely women are given attention with regard to household SES. For example, it is reported that the yields per hectare in agriculture are still lower on land worked primarily by women compared with that worked by men (URT, 2016, URT, 2018). However, such deficiency in women's production is rarely translated in household SES especially when the household is headed by male. Little is known about the effect of women's socio-demographics and reproductive factors on SES of households in rural areas of Tanzania. Many existing studies about women and SES have focused to female headed households, (McFerson, 2010; Leavens, 2011 Maloiy, 2018), coming up with findings that the SES of households headed by female is poorer compared with households headed by males (McFerson, 2010). Likewise, the extent to which women spend time in family care

activities during economic productive hours is really given attention. Most of previous studies about gender time expenditure have focussed on time in general without specifying economic productive hours (Komatsu *et al.,* 2015; Leavens and Anderson, 2011). Moreover, factors related to the extent of time spent in family care activities have not been clearly reported.

In this line of thought, it is critically important to understand the correlate between women's related socio-demographic and reproductive factors of the rural population so as to timely devise appropriate strategies that will eventually improve SES in rural households. In addition, understanding, understanding time expenditure on production and family care activities among women and men as well as the related factors is of great importance for enhancing participation of women in productive activities thus their contribution to household SES.

1.9 Justification of the Study

The Global Sustainable Development Goals (SDGs) number 1 and 8, among other things, address issues of economic development across the world (Sachs, 2012). In line with this, the government of Tanzania has dedicated deliberate efforts to improve the SES of its people as evidenced in the Five-Year Development Plan (FYDP II) of 2016/17 – 2020/21. One of its focuses in implementing the strategy is to fully exploit economic potentials of women by enabling their full participation in economic productivity (URT, 2016). Women provide substantial workforce especially in rural areas where agriculture is the predominant economic activity. Moreover, women are reported to overshadow men in many spheres of agricultural tasks, constitute 54% of the workforce (Begum and Yasmeen, 2011; Leavens, 2011; Palacios-Lopez and Lopez, 2014; Palacios-Lopez *et al.*, 2015). Therefore, their contribution to household SES and national GDP is imperative and

their full participation in economic production is crucial if development transformation is to be attained.

The presence of gender-specific constraints that prevent women from full participation in economic productivity undermines their significant contribution to the national economy and poverty reduction endeavours. These barriers need to be objectively identified in order for the contemporary strategies in place to be implemented successfully. It is therefore critical to understand barriers of women productivity from different perspectives so as to identify appropriate entry points for interventions. Results from this study provide women related factors that are significant constraints to women economic productivity, with adverse impact on household SES. Therefore, this study provides scientific evidence of an array of women specific variables that have impact on household socio-economic status. The invaluable information provided by this study therefore contributes to understanding of women's socio-demographic and reproductive factors that impact negatively on SES. This knowledge will find direct use by development stakeholders in designing suitable interventions geared towards household economic empowerment.

1.10 Study Objectives

1.10.1 Overall objective

The overall objective of this study was to examine the influence of women's socio-demographic and reproductive factors on household SES in rural settings of Morogoro District, Tanzania.

1.10.2 Specific objectives

The following specific objectives were set to achieve the above-mentioned overall objective:

i. To analyze the relationship between women's socio-demographic factors with SES of their households of residence in rural settings.
ii. To determine the association between selected reproductive factors of women and household SES in rural settings.
iii. To compare time spent by women and men on households' economic and family care activities during productive hours

1.11 Study Questions

This study was guided by the following research questions:

i. How do women socio-demographic factors (age, level of education, marital status, and area of residence, sex and age of household head, household size, and household composition) relate to SES of a household irrespective of sex of household head?
ii. Which reproductive factors of women (number of children, birth intervals, unplanned pregnancies and age at first pregnancy) are important in influencing household SES?
iii. Does the time spent in economic productive and family care activities during productive hours differ significantly between men and women in the study area?

1.12 Research Hypotheses

This study was guided by the following hypotheses:

Hypotheses (H_0)

i. Women's socio-demographic factors have no significant relationship with household SES in rural settings.
ii. Women's reproductive factors are not significantly associated with their respective household SES.

iii. Time spent by women in household's productive and family care activities during economic production hours in rural areas does not differ significantly from that of men.

1.13 Theoretical Framework

This study was guided by the feminization of poverty theories. The feminist explanations for the "Feminization of Poverty" have been prominent in proposing factors relating women and poor SES. The concept of "Feminization of Poverty" originated from the United States in the 1960's. Feminization of Poverty is defined as an increase in the difference in the levels of poverty among women and men or as female versus male-headed households (Chant, 2006). In 1978, Dlane Pearce derived a theory explaining women and poverty (Pearce, 1978). In analyzing women's earnings, the theorist suggested that demographic characteristics of women (age, race, education and residence) had influence on women's earnings.

Likewise, participation in labour force was considered important whereby hours worked were likely to influence women's earnings. Provision of day care implied support for permanent participation of women in the labour force as well as acceptance of women including mothers as workers whose primary economic contribution is not in terms of childcare (Pearce, 1978). Lack of day care denies women's participation in labour force. However, according to Pearce (1978), developing program interventions at individual level, would be a proper support of enhancing earnings for women. The theorist suggests that the programs to support women include to train them in male traditional work and to stop segregation based on gender.

In 2002, Steven Pressman took further step by relating women's demographic characteristics with household SES. Pressman derived a series of "Feminization of Poverty" theories with various arguments (Pressman, 2002; Pressman, 2003). Specifically, this study adopted the Gender Poverty Gap theory (Pressman, 2002) as well as Feminist Explanations for the Feminization of Poverty (Pressman, 2003) because the study focuses on household SES. The Gender Poverty Gap theory guided the analyses of relationship between women demographic characteristics with household SES as well as examination of the linkage between household structure and household SES. Feminist explanations for the Feminization of Poverty guided studying the association between selected women reproductive factors and household SES as well as determining gender differences in time expenditure in productive and reproductive activities. The theories are described in the next sections.

1.13.1 Gender Poverty Gap Theory

Explaining the gender poverty gap in developed and transitional economies, Pressman (2002) examined demographic and human capital factors in relation to SES. Demographic variables included education level of household members; occupations where adults in the family are employed; the ages of all family members; household size, ethnicity and race; and the marital status of the family or household head (Pressman, 2002). These factors were associated with wage differentials primarily to productivity differences. For example, it is suggested that education enhances the earning potential of individuals and consequently help to accumulate wealth thus escape poverty (UNESCO, 2000; Awan *et al.*, 2011).

Furthermore, this theory considers human capital, relating wage rates with education and work experience of the individual (De Brauw and Rozelle, 2008). The assumption was

that more educated workers will be more productive and will thus receive higher pays. Likewise, more experienced workers will be more productive and should also be paid more money than less experienced workers. However, the theorist found that the factors in discussion had no empirical evidence for a link with poverty among women (Pressman, 2002). For example, it was explained that the age was not important because FHH were more likely to have older heads due to the greater life expectance of women, and older households were less likely to be poor due to the generous provision of retirement income to the elderly.

Similar to the theory, partly, in relating demographic characteristics with SES in Tanzania, education is considered one of the most important demographic factors of social and economic development, despite the absence of clear scientific data on the type of education related to household SES. Education is considered to impart skills to an individual and thus influence socio-economic variables for individuals, households and societies (UNESCO, 2000; UNDP *et al.,* 2014; URT, 2016a). In response to this, the government of the United Republic of Tanzania has escalated efforts to raise access to education especially for girls who are more vulnerable to illiteracy. Like in many other regions of the world, female headed households are connected with discriminatory legislation procedures and social norms in Tanzania. Consequently, women from those households end up having less access to labour inputs that include capital and land as well as less training and information about new technology (Pressman, 2002; Budlender, 2005; Kurbanova, 2005; Schmidt and Sevak, 2006; McFerson, 2010; Leavens, 2011; MoHCDGEC and MoH, 2015; Milazzo and Van de Walle, 2015). This study has intimately been aligned to the ‘gender poverty gap’ theory since it addresses key issues that define the ‘gender gap theory’ at its breadth. Other authors have also reported about gender and rural poverty (Lyimo-Macha and Mdoe, 2002; Jeckoniah *et al.,* 2014).

This study provides insights about women socio-demographic factors which are relevant for analyzing their relationship with household SES in rural settings. In addition, the theory recognizes the chances of household structure in influencing attainment of certain household SES. In line with this, the ‘gender poverty gap’ theory was used to guide assessment of the relationships that exist between household structure and household SES. However, the theory (Gender Poverty Gap Theory) did not take into account factors tied up with women reproductive roles hence it was imperative to complement the theory with Feminist Explanations for the Feminization of Poverty as explained in the next section.

1.13.2 Feminist explanations for the Feminization of Poverty

While Pearce (1978) explains factors affecting women’s earning (as individual), in the feminist explanations for the Feminization of Poverty theory, Pressman (2003) explains women related factors in relation to women’s household SES. Pressman (2003) acknowledges that women are more likely to be poor than men. But in the feminist explanations for the Feminization of Poverty, it is suggested that poverty among women is associated with household structure in the sense that parenthood leads to lower earnings for women. The main reason for lower earnings of women is attributed to care-giving responsibilities mothers provide for their children.

The assumption is that care responsibilities take away the time that women could spend for earning income. The argument that expenditure of more time in reproductive work by women contributes to women poverty has been adopted by various scholars (Cawthone, 2008; Komatsu *et al.,* 2015). Based on feminist explanations for the Feminization of Poverty, reproductive work competes for time with productive work (Blackden and Wodon, 2006). This implies that spending more time in reproductive work reduces the time that could have been spent in productive work with consequences on SES. It is

proposed that household tasks prohibit women from being flexible with time resulting to the motherhood wage penalty, especially women with very young children (Kuhhirt and Ludwig, 2012). The term “Motherhood wage penalty” originates from “motherhood penalty” which is explains the findings that establish that “On average, mothers earn lower wages than childless women” (Gough and Noonan, 2013).

The concept of time as a link factor between reproductive responsibilities and poverty has recently surfaced in various ways. In the analysis of time use and time poverty, Blackden and Wodon (2006) indicate that care and domestic activities are major components of reproductive work which compete for time with market work. Furthermore, literature shows that household tasks prohibit women from being flexible with time resulting to the motherhood wage penalty. In particular, for mothers with very young children, housework time incurred a significant wage penalty (Kuhhirt and Ludwig, 2012). Previous scholars proposed the interaction of productive work (market work) and reproductive work (non-market work) in explaining the time use and time poverty (Blackden and Wodon, 2006). Time poverty is defined as the need to spend long hours working (in either the labour market or domestic work) because the alternative would be (even deeper) consumption poverty (Bardasi and Wodon, 2010. According to the same source, it refers to working long hours and having no choice. The author indicates that productive and reproductive work competes for time. Consumption poverty refers to the household production time needed to achieve a minimum standard of living (Johnson, 2004). The proposed conceptual framework for analysing time poverty is presented in Figure 1.1.

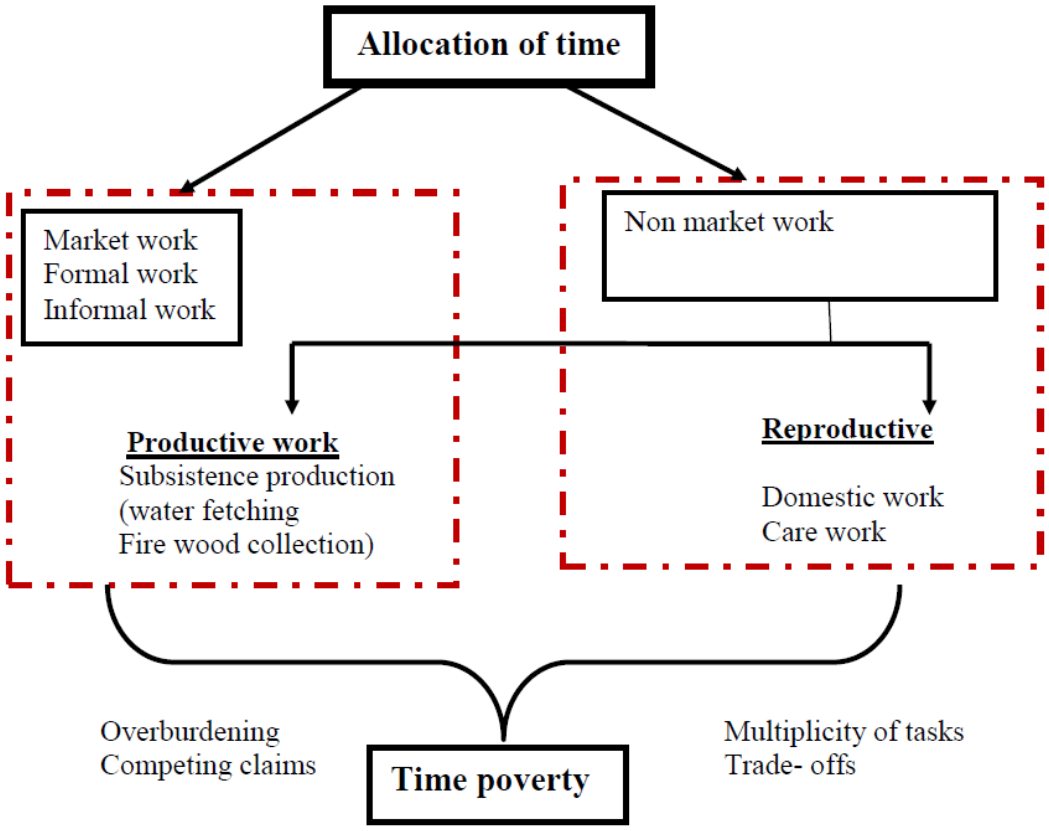


Figure 1.1: Framework for analyzing time use and time poverty

Source: Modified from Blackden and Wodon (2006).

Like other parts of the World, in Tanzania, reports show that women spend more time in non-productive work compared to men (NBS, 2017). In addition, women are burdened with domestic work. However, information concerning time expenditure with clear focus to potential production hours is scarce. Building on feminist explanations for the Feminization of Poverty, new ideologies are emerging intending to unlock the link between women and poor SES. The ideologies include 'feminization of responsibility and/or obligation' as well as 'feminization' of anti-poverty initiatives. These ideologies are being discussed by researchers (Chant, 2006). Therefore, Feminist Explanations for the Feminization of Poverty theory was appropriate for this study because it provided direction for determining the differences in time expenditure between men and women in productive and reproductive activities. While is widely reported about gender time

expenditure without specifying women's productive time spent in other activities which are not productive (Blackden and Wodon, 2006; Bardasi and Wodon, 2010), this study will focus on economic productive time.

In addition, it guided the investigation of relationship between selected reproductive factors and SES. Nevertheless, this theory did not provide explanation on how reproductive factors influence the SES. Hence, this study examines selected reproductive factors that are hypothesized to have effect on the amount of time spent in care and reproductive activities in general. Such factors include number of children, birth interval, and unplanned pregnancies. Therefore, it can be noted that the two theories the gender poverty gap theory (Pressman, 2002) and the explanation of the Feminization of Poverty theory (Pressman, 2003) complemented each other thus covered all the three objectives of the study.

1.14 The Theoretical Gap

The Gender Poverty Gap theory (Pressman, 2002) provides explanation about the relationship between demographic factors and women's poor SES. The theory argues that there is no empirical support that demographic factors relate with women's poor SES. With regard to Tanzanian rural household SES, this theory leaves an empirical gap of understanding how women related socio-demographic factors relate to households regardless the sex of household head. This empirical gap provides entry for the current study. The Feminist Explanations for the Feminization of Poverty theory (Pressman, 2003) pinpoints child rearing activities to take away the time that women would otherwise spend in productive work. Nevertheless, based on the theory, it is difficult quantify the potential productive time lost and to understand the factors that influence the time that a

woman spends for performing activities. This is because the factors are not stated in the theory.

Based on the theory, it is important to explore factors that can reduce women's time spent in family care activities with specific community thus establish appropriate entry for interventions. Moreover, both theories [Gender Poverty Gap theory (Pressman, 2002) and feminist explanations for the Feminization of Poverty theory (Pressman, 2003)] were formulated in the developed nation, the United States. Such an area is absolutely different from the Tanzanian environment especially the rural areas. Therefore, despite the information gaps raised above, both theories [Gender Poverty Gap theory (Pressman, 2002) and the feminist explanations for the Feminization of Poverty theory (Pressman, 2003)] do not provide hints on the effect of variation of cultural, economic and development differences; it is difficult to extrapolate the reported results in Tanzanian environment especially in rural areas. This is because the demographics are likely to differ with societies of different level of development, culture and economic status. As such, studies with specific societies are important in similar aspects.

Therefore, this study addressed theoretical gaps by examining women related socio-demographic and reproductive factors that influence household SES in households containing women of reproductive age, regardless of the sex of household head. Based on the feminist explanation of the Feminization of Poverty (Pressman, 2003) theory, this study scrutinized potential reproductive factors to pin point the factors with effect on SES in Tanzanian rural environment. In addition, the study examined the time that women spend in productive and family care activities and the associated factors in Tanzanian rural context. The two theories, the Gender Poverty Gap theory and the explanations for the feminization of poverty were useful in guiding construction of the conceptual

framework of the study where the hypothetical relationship of the study variables was expressed. In addition, study objectives were set based on theoretical arguments.

1.15 The Conceptual Framework for the Study

The conceptual framework (CF) of this study (Figure 1.2) is based on literature. The theoretical explanation established that SES is affected by the amount of time spent in family care and maintenance activities (preparation of meals, laundry, cleaning, household maintenance, family and personal care as well as child care) which takes away the time that could be spent in productive work. Based on the theory, the key assumptions guiding this study are as follows: First, it is assumed that attainment of a certain level of SES is influenced by women's socio-demographic factors that include age, education level, marital status, occupation and location/area of residence. Other factors were sex of household head, number of household members and age composition.

Third, likewise, it is assumed that reproductive factors (number of children, age at first pregnancy, and interval of births and occurrence of unplanned pregnancies) have influence on the amount of time spent to perform reproductive activities consequently affecting SES of a household in which a woman lives. Forth, it is assumed further that access to child care services and other support alter the amount of time that women spend in family and child care activities with consequences on household SES. The household SES is based on wealth index (asset possession and housing characteristics). Recently, the wealth index has been considered a theoretically and practically simple, superior and reliable alternative measure of economic status as compared to income and consumption (Howe *et al.,* 2009).

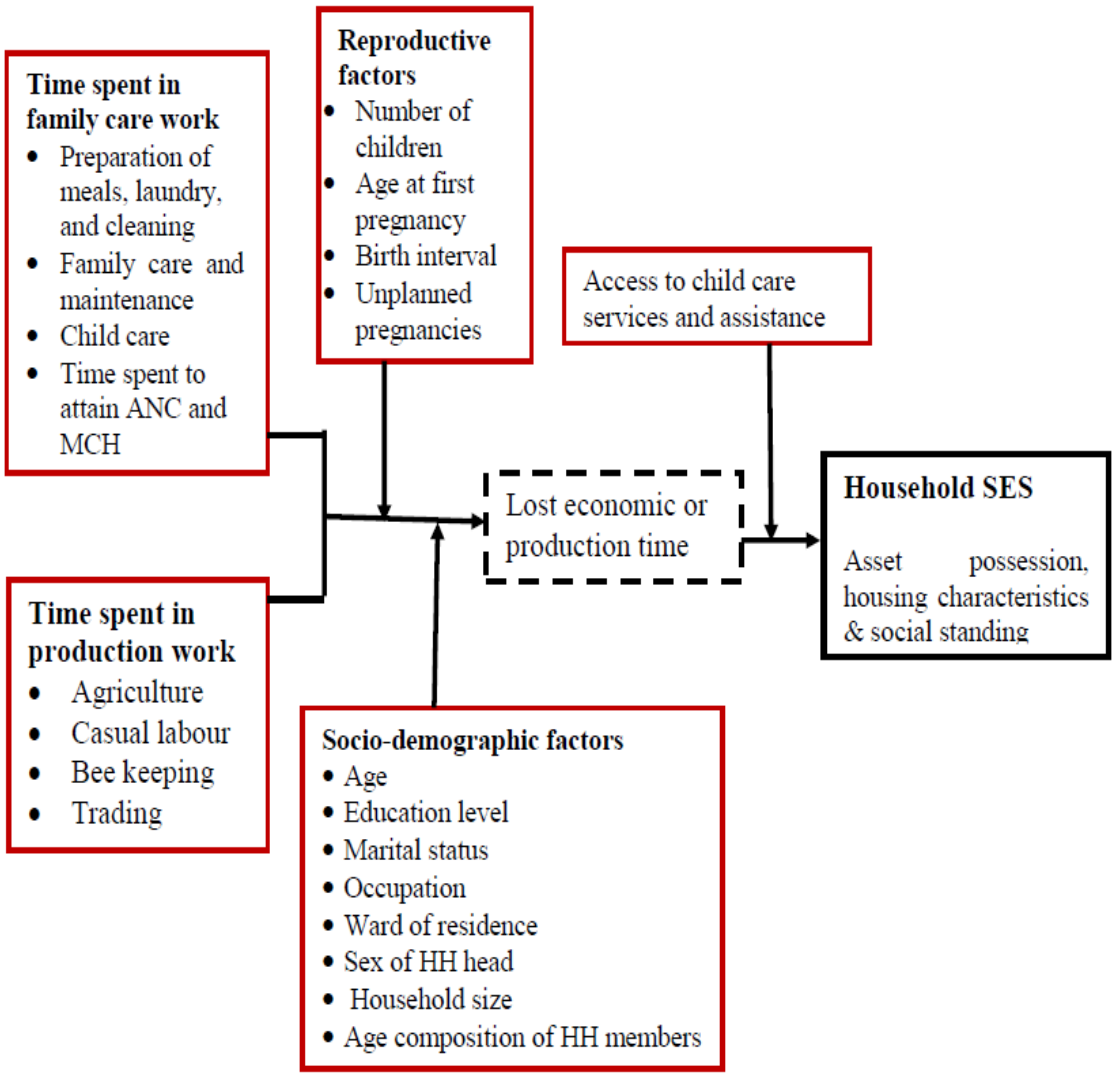


Figure 1.2: Conceptual Framework for the Study

Key: HH = Household; **SES**=Socio-economic status; ANC=Antenatal Care; MCH= Mother and Child Health

This conceptual framework has been constructed based on the two theories. Also, the theories guided formulating hypotheses of the study and this form basis for explaining study findings.

1.16 Standardized Methods for Measuring Socio-economic Status

Conventionally, income is a core SES indicator and some SES measures such as the 'Prasad Scale' are exclusively based on per capita income (Dudala *et al.*, 2014). Because

of the high level of unreliability of this scale, including the unwillingness of individuals interviewed to discuss about their incomes, social scientists consider “consumption” or “expenditure” as better markers of SES measurement compared to income (Davidson *et al.,* 2007). Composite SES indices are also used that usually incorporate occupation and education along with income to reflect three distinct and interrelated dimensions of class, status, and power of social hierarchy (Waters and Waters, 2015). The problems with such proxy measures are that, they often divide population into unequal-sized groups making causal interpretations more complicated (Davidson *et al.,* 2007). Nonetheless, it has to be comprehended that all SES indices commonly used in epidemiological studies have their own strengths and weaknesses (Natali, and Moratti, 2012). Many tools are currently available with multiple combinations of different component indices to assess SES in different contexts. For example, Tiwari *et al.* (2005) used seven profiles (housing, material possession, education, occupation, economic profile, cultivated land, and social profile) in a scale.

A newer and more objective way of measuring SES as adopted by this study, is wealth index (WI) where construction materials of dwelling houses and household assets are combined together through data reduction using statistical procedure of principal component and factor analysis (PCA and FA) methods to come up with a summary WI (usually in quintiles) (Budlender, 2005; Abraham, 2016). Factor analysis is a technique that is used to reduce a large number of variables into fewer numbers of factors. This technique extracts maximum common variance from all variables and puts them into a common score that can be used for further analysis. PCA is the most common method used by researchers for factor reduction (Velicer *et al.,* 2000. This method has been recommended by other researchers (Sahn and Stifel, 2003; Rutstein and Johnson, 2004; Azzarri *et al.,* 2006; Vyas and Kumaranayake, 2006). The reason of adopting this method

is that wealth reflects long-term wellbeing since it is less volatile than income or consumption. The procedure for this method is explained in section 2.3.8.2.

1.17 General Methodology

1.17.1 Study design and area

This study utilized an analytical cross-sectional study which was designed using quantitative and qualitative approach. The design was considered suitable because it is convenient, cost effective and it takes little time.

The study was conducted in Morogoro district in Morogoro region. Other districts of Morogoro region are Gairo, Kilombero, Kilosa, Morogoro Urban, Mvomero and Ulanga. Three wards (Gwata, Mkuyuni and Kinole) with a total of six villages (two from each ward) were included in this study. These villages include Kinonko and Maseyu from Gwata ward, Madamu and Kibwaya from Mkuyuni ward, as well as Tandai and Ludewa from Kinole ward. Morogoro district was purposively selected based on the fact that high proportion of households comprised of low SES. More than a half (55%) of households in this district are regarded as poor (Lusambo, 2016; Lusambo *et al.*, 2016). Over half (56%) of the households in Morogoro region falls between the lowest and the middle wealth quintiles (National Bureau of Statistics and Macro (2011). Based on reported poverty levels, the selected district assumed to be a good representative of rural areas of Tanzania. The main economic activity in this district is crop farming.

1.17.2 Sampling technique and sample size estimation

A multistage sampling procedure was adopted in this study. The district and study wards were purposively selected. The study intended to include wards with different level of accessibility. For this study, Gwata ward which is located along the tarmac and highway

(Dar es Salaam - Morogoro) road was considered more accessible. Mkuyuni and Kinole wards which are accessible by rough road and some of the areas of the ward example for Ludewa village and some areas of Tandai villages could not be accessed by car due to poor roads, thus these wards were considered less accessible. Accessibility was important in assessing how women in these areas relate to household SES. Six villages (two villages from each of the study wards were selected randomly.

A sample size was pre-determined based on calculation as follows: According to Cochran (1963), the minimum sample size was estimated using the formula: $n = (Z^2 * P (1- P)/e^2$, where 'Z' = value from standard normal distribution corresponding to desired confidence level (Z=1.96 for 95% CI), 'P' is the prevalence of poverty in the study area (55%) and 'e' is the desired precision (0.05). Accordingly, a minimum of 380 participants were required. While the study included women from male headed households and women who were heads of households, the third study objective required to collect data from married women (women from MHH) and their spouses or their counterpart male partner. Including males/spouses was important for obtaining data about the time spent by men in productive, family and child care activities. Therefore, considering difficulties of getting men to fill the questionnaires, especially in rural areas, it was important to increase the sample size to ensure that sufficient number of couples is obtained to fill the questionnaire thus qualify for analysis in objective three.

In total, 627 women were interviewed for individual data and for their respective households. The increase of sample size is supported by various researchers (Israel, 1992; Kalla, 2009; Hong and Park, 2012). Supporting reasons are that the more the data the more the information hence the estimate is more precise.; as the sample size increases, the confidence in estimate increases, uncertainty decreases hence greater precision is attained

(Hong and Park, 2012). Therefore, the larger the sample size, the more accurately it is expected to mirror the behavior of the whole group (Kalla, 2009). The extent of increase of sample size was determined by various reasons that include resources available for data collection (finance and human resources), Time/duration of the study as well as the availability of respondents.

Proportion of the sample size per village is shown on Appendix 3. From each study village, a village register was used to select women with required characteristics (women 15-49 years of age, with ≥ 2 children) and generate a sampling frame. From a sampling frame, while all women who were heads of households were purposively included in the study, random selection was used to obtain respondents (women) from male headed households (MHHs). This is because women who are heads of households (FHHs) are few in population (National Bureau of Statistics and Macro, 2011) and it was important to include this group in order to determine the difference in association between MHHs and FHHs with household SES (Table 2.9). However, out of 627 interviewed women, after data cleaning, 542 questionnaires (323 women from MHHs and 219 women from FHHs) qualified for analysis.

1.17.3 Study population, inclusion and exclusion criteria

This study focused on women of reproductive age between 15 and 49 years old with at least two children. Reproductive age was adopted from the National Demographic and Health Survey (National Bureau of Statistics and Macro, 2011). Reproductive age was important to allow capturing information about composition of under five years children in households. Study respondents had at least two children. This was also important so that they could provide information about birth intervals. Respondents were from either female or male-headed households to allow establishing the relationship between sex of

household head and household SES. A woman was liable for exclusion if she would not consent to participate in the study.

1.17.4 Data collection

While structured questionnaire (Appendix 1) was used to collect quantitative data, pre-determined FGD guide was used to collect qualitative data. Quantitative data included demographic characteristics of respondents, reproductive factors and the time spent in productive and reproductive activities. Also, data were collected about household assets and housing facility for constructing household SES. Similar method was used by the National Bureau of Statistics and Macro (2011) to conduct the National Demographic and Health Survey of Tanzania (2010). In total, 627 respondents were interviewed though after data cleaning, 542 questionnaires qualified for analysis.

The dropped questionnaires were missing some information. Out of 542 respondents, 323 women were from Male-Headed Households (MHHs) and 219 women were from FHHs. It was important to include women from both male and female-headed households since the study intended to explore among other things, the relationship between sex of household head and SES as part of household structure. Selected women, in addition to providing data about themselves, they provided data about households where they were residing.

In order to get data for objective three about the difference in time between men and women in productive and care activities, spouses and male partners of women from MHHs were interviewed only to provide data on the time which they spend to perform productive and reproductive activities. The same questionnaires were used for interview only that there was a sub-section to fill male's information (Appendix 1). Therefore, out

of 542 questionnaires, 323 that of women from MHHs, contained data from 323 spouses or male partners. These questionnaires were used for analysis of objective three only about comparing time expenditure in productive and care activities. The questionnaires corresponding to women from MHHs, if had no information of spouse/male partner, they were disqualified for analysis thus dropped during data cleaning. Collecting data from men and women of the same household was important to make sure that data are collected under the same living environment hence possible to make a realistic comparison.

Qualitative data included information about contributing factors for low level of education among women, unstable marriages, reasons for unplanned pregnancies and factors contributing to the time spent for various reproductive activities (Appendix 2). A total of 21 women participated in Focus Group Discussion (FGDs). These women constituted 3 groups with 6-8 women each. From each study ward, one group was formed from one of the study villages. Village leaders assisted to identify women with required characteristics. The criteria set for inclusion in FGDs included to have ever been a leader of women social or economic group, member of village Government or member of various committees in village. The criteria were important to ensure that only women with a wide knowledge about study issues were involved in discussions.

1.17.5 Data analysis

Details for data analysis are described under each respective objective as appears in manuscripts one, two and three. All respondents (542) were included in analysis for objective one about women's demographic factors and objective two about women's reproductive factors. Binary logistic regression was used to analyze the association between explanatory variables and outcome variable for objective one and two. Student's t-test was used to compare the mean time spent in various activities in objective three (3).

While all respondents (542) were used in analysis for objective one and two, only 323 women from MHHs and their spouses/male partners (323) were involved in analysis for objective three (3) to determine the time spent by women and men in various activities. Analysis methods per objective are summarized in Table 1.1. Results from qualitative data were used to supplement quantitative results.

Qualitative data analysis was done using content analysis as described by Renner and Taylor-Powell (2003). This involved reading the text recorded during discussions, organizing the data according to questions intended to be answered by the analysis. The FGD guiding questions guided the analysis whereby data from each focus group was considered. The analysis focused on opinions of the group based on consensus reached concerning the issue of discussion. Data were then organized into categories and the themes were identified and used to explain the findings.

Table 1.1: Data analysis methods for each specific objective of the study

S/N	Objective	Method of analysis
1	To analyze the relationship between women's demographic and household characteristics with household SES	Binary logistic regression and content analysis
2	To determine the association between selected reproductive factors of women and household SES	Binary logistic regression and content analysis
3	To compare time spent by women and men in on households' economic and care activities during productive hours	Student's t-test and content analysis

1.18 Limitations of the Study

The assets that were used to derive household SES vary in quality and value. However, it is difficult to capture the real value of each asset because rural residents rarely document and keep records for their assets (Joshi *et al.,* 2019). In addition, some assets had depreciated but the owners cannot estimate the present values. To counteract this

challenge, the value of assets was considered for housing and toilet facilities whereby different scores were given to different materials used for constructing the wall, roof and floor of a house (Appendix 4). The scores differentiated weights of the owned assets. The construction material included bricks, cement, mad, iron sheet, thatch, etc. The scores differentiated the value of an asset. Assessment of other assets was based on whether a respondent own the asset or not. In addition to capability to own the asset, the National Bureau of Statistics and Macro (2011) considers the “utility value”. For example, the assets making easier communication, transportation, provide source of energy accordingly. The method is recommended and has been used by other researchers (Moratti and Natali, 2012; Abraham, 2016). In addition, the Method has been used in conducting different surveys such as Demographic and Health Survey of Tanzania (2010) and the 2017-18 Household Budget Survey of Tanzania (National Bureau of Statistics and Macro, 2011; URT, 2019). On top of that, prior to using principal component analysis to generate socio-economic status of households, tests for suitability of the items/factors were done to ascertain appropriateness of the assets (section 2.3.9).

Second, categorizing activities and measuring related time in rural areas was a challenge because seldom rural residents keep time for particular activity. They neither plan specific time for activities nor abide to the planned time; therefore, there could be slight variations in the reported time spent for particular activity. To overcome this challenge, the average of working hours of four consecutive days was considered as the normal working time for an individual. The average obtained, was considered the usual practice of working time by individuals. Similar challenge was reported previously and the same technique was used to surmount the challenge (Harvey and Taylor, 2000). Also, overlapping of activities especially for women who normally perform economic productive activities side by side with taking care of their children or attending family matters was a challenge for sorting

activities and related time. In this case, the emphasis was to determine the dominant activity for a particular time.

1.19 Organization of the Thesis

This thesis is organized in five chapters. Chapter one consists of an introductory part describing the background information of the study, the statement of the research problem, justification for the study as well as the study objectives. Also, the introductory part offers the theoretical framework guiding this study and the description of common concepts contained in the thesis. Chapter two presents manuscript one that covers objective one of the thesis. This investigated the relationship between women demographic characteristics and household structure with household SES. Chapter three presents manuscript two that covers the objective two that assessed association between selected women reproductive factors and household SES. Chapter four covers manuscript three that covers objective three which determined gender differences in time expenditure for productive and reproductive activities. Chapter five summarizes the major findings, conclusions and recommendations.

1.20 References

Abraham, E. M. (2016). Determinants of household socio-economic status in an urban setting in Ghana. *Ghana Journal of Development Studies* 13: 97-114.

Adinma, J. I. B. and Nwosu, B. O. (1995). Family planning knowledge and practice among Nigerian women attending an antenatal clinic. *Advances in Contraception* 11(4): 335-344.

Antonopoulos, R., (2008). The unpaid care work-paid work connection. [https://www.econstor.eu/handle/10419/31491] site visited on 14/2/2019.

Arpino, B. and Aassve, A. (2013). Estimating the causal effect of fertility on economic wellbeing: data requirements, identifying assumptions and estimation methods. *Empirical Economics* 44: 355-385.

Atkinson, A. B. and Lugo, M. A. (2010). Growth, poverty and distribution in Tanzania [http://eprints.lse.ac.uk/36376/1/Growth poverty and distribution in Tanzania.pd] site visited on 11/07/2019.

Awan, M. S., Malik, N., Sarwar, H. and Waqas, M. (2011). Impact of education on poverty reduction. *International Journal of Academic Research* 3(1): 659-664.

Azzarri, C., Carletto, G., Davis, B. and Zezza, A. (2006) Monitoring poverty without consumption data: an application using the Albania panel survey. *Eastern European Economics* 44: 59-82.

Bardasi, E. and Wodon, Q. (2010). Working Long Hours and Having No Choice: Time Poverty in Guinea. *Feminist Economics* 16(3): 45–78.

Begum, R. and Yasmeen, G. (2011). Contribution of Pakistani women in agriculture: productivity and constraints. *Sarhad Journal of Agriculture* 27(4): 637-643.

Bibler, S. and Zuckerman, E. (2013). The care connection: The World Bank and women's unpaid care work in select Sub-Saharan African countries (No. 2013/131). WIDER Working Paper. The United Nations University World Institute for Development Economics Research (UNU-WIDER), Helsink. [http://hdl.handle.net/10419/93728] site visited on 4/2/2019.

Birdsall, N., Kelley, A. C., Sinding, S. W. and Sinding, S. (2001). Population matters: demographic change, economic growth, and poverty in the developing world Oxford University Press. 6pp.

Blackden, C. M. and Wodon, Q. (2006). Gender, time use, and poverty in sub-Saharan Africa (73 Edn) World Bank Working Paper No 73. Washington DC.

Bloom, D. E. and Finlay, J. E. (2009). Demographic change and economic growth in Asia. *Asian Economic Policy Review* 4: 45-64.

Bongaarts, J. (2001). Household size and composition in the developing world in the 1990s. *Population Studies* 55(3): 263-279.

Brown, D. L. and Hirschl, T. A. (2010). *Household Poverty in Rural and Metropolitan-Core Areas of the United States1*. *Rural Sociology* 60(1): 44–66.

Budlender, D. (2005). Women and poverty. *Agenda* 19: 30-36.

Cawthorne, A. (2008). The straight facts on women in poverty. *Centre for American Progress* 8: 1-3.

Chant, S. (2003). The 'engendering'of poverty analysis in developing regions: Progress since the United Nations decade for women, and priorities for the future. [http://eprints.lse.ac.uk/573/1/theEngenderingofPovertyAnalysis.pdf] site visited on 05/10/2020.

Chant, S. (2004). Dangerous Equations? How Female Headed Households Became the Poorest of the Poor: Causes, Consequences and Cautions. *IDS Bulletin* 35: 19-26.

Chant, S. (2006). Re-thinking the feminization of poverty in relation to aggregate gender indices. *Journal of Human Development* 7: 201-220.

Cochran, W. G. (2007). *Sampling techniques*. John Wiley and Sons [https://scholar. google.com/Sampling+techniques.+John+Wiley] site visited on 07/06/2020.

Dao, M. Q. (2012). Population and economic growth in developing countries. *International Journal of Academic Research in Business and Social Sciences* 2: 1-6.

De Brauw, A. and Rozelle, S. (2008). Reconciling the returns to education in off farm wage employment in rural China. *Review of Development Economics* 12: 57-71.

De Vries, G., Timmer, M. and De Vries, K. (2015). Structural transformation in Africa: Static gains, dynamic losses. *The Journal of Development Studies* 51: 674-688.

DeGraff, D. S. and Bilsborrow, R. E. (1993). Female-headed households and family welfare in rural Ecuador. *Journal of Population Economics* 6: 317-336.

Demombynes, G. and Hoogeveen, J. (2004). Growth, Inequality, and Simulated Poverty Paths for Tanzania, 1992-2002. The World Bank.

Dyer, S. J. (2007). The value of children in African countries–insights from studies on infertility. *Journal of Psychosomatic Obstetrics and Gynecology* 28(2): 69-77.

Ellis, A. (2007). *Gender and economic growth in Tanzania: Creating opportunities for women*. World Bank Publications. 140pp.

Ellis, F. and Mdoe, N. (2003). Livelihoods and rural poverty reduction in Tanzania. *World Development* 31: 1367-1384.

FAO (2014). Tanzania Country Profile: Gender Inequalities in Rural Employment in Tanzania Mainland, an Overview. Rome, Italy: Food and Agriculture Organization.

Fatihiya, A. M. and Kenneth, M. B. (2017). Household Social Economic Status and Adoption of Improved Cook Stoves: the Case of Kilimanjaro Region Tanzania. *The Journal of Transdisciplinary Environmental Studies* 16: 2-13.

Ferrant, G. l., Pesando, L. M. and Nowacka, K. (2014). Unpaid Care Work: The missing link in the analysis of gender gaps in labour outcomes. Issues Paper, OECD Development Centre. [www.oecd.org/dev/developmentgender/unpaidcare work.pdf] site visited on 12/10/2017.

Gough, M. and Noonan, M. (2013). A review of the motherhood wage penalty in the United States. *Sociology Compass* 7(4): 328-342.

Gounder (2013). Correlates of poverty in Fiji. *International Journal of Social Economics* 40(10): 923-938.

Greene, M. E. and Merrick, T. (2008). Poor health, poor women: how reproductive health affects poverty. *Washington, DC: Woodrow Wilson International Centre for cholars*. 12pp.

Gribble, J. and Haffey, J. (2008). Reproductive health in sub-Saharan Africa. Population Reference Bureau. 8pp.

Hernandez, J. B. R. and Kim, P. Y. (2019). Epidemiology Morbidity and Mortality.

Himaz, R. and Aturupane, H. (2011). Education and household welfare in Sri Lanka from 1985 to 2006. Economics series working papers no. 527. University of Oxford, Department of Economics.

Hofferth, S. L., Reid, L. and Mott, F. L. (2001). The effects of early childbearing on schooling over time. Family planning perspectives. pp259-267.

Hong, E. P. and Park, J. W. (2012). Sample size and statistical power calculation in genetic association studies. *Genomics and Informatics* 10(2): 117-122.

Hoogeveen, J. and Ruhinduka, R. (2009). Poverty reduction in Tanzania since 2001: Good intentions, few results. Research and Analysis Working Group. [https://www.ippmedia.com/en/business/mechanization-essential-tanzania] site visited on 15/09/2020.

Ilesanmi, O. O. (2018). *Women's Visibility in Decision Making Processes in Africa—Progress, Challenges, and Way Forward. Frontiers in Sociology.* 7pp.

Ironmonger, D. (2000). *Household production and the household economy*. [https://minerva-access.unimelb.edu.au/handle/11343/33646] site visited on 14/11/2020.

Jabeen, S., Haq, S., Jameel, A., Muhammad Asif, A. H., Hwang, J. and Jabeen, A. (2020). Impacts of Rural Women's Traditional Economic Activities on Household

Economy: Changing Economic Contributions through Empowered Women in Rural Pakistan. *Sustainability* 12(7): 1-23.

Javed, Z. H., Khilji, B. A. and Mujahid, M. (2008). Impact of education on socio-economic status of villagers' life: A case study of Shrien Wala village of Faisalabad district. Pakistan Economic and Social Review. pp133-146.

Jayachandran, S. (2019). Social Norms as a Barrier to Women's Employment in Developing Countries. North-western Working Paper.

Jeckoniah, J. N., Nombo, C. N. and Mdoe, N. S. Y. (2014). Socio-economic status and women empowerment in rural Tanzania: a case of onion value-chain in Simanjiro district. *Tanzania Journal of Development Studies* 14 (1 and 2): 65-76.

Johnson, D. S. (2004). Measuring consumption and consumption poverty: possibilities and issues. *Reconsidering the Federal Poverty Measure*. [http://welfareacademy. org/pubs/poverty/Johnson.pdf] site visited on 03/05/2021.

Joshi, K. H., Martinez Jr, A., Addawe, M. and Soco, C. F. M. (2019). Women's Asset Ownership: Evidence from Georgia; Mongolandia; and Cavite, Philippines. Asian Development Bank Economics Working Paper Series, (571).

Joshi, S. (2012). *Reproductive Health and Economic Development: What Connections Should We Focus On?* Research Brief, Washington, DC: Population Reference Bureau. 5pp.

Kabudula, C. W., Houle, B., Collinson, M. A., Kahn, K., Tollman, S. and Clark, S. (2017). Assessing Changes in Household Socioeconomic Status in Rural South Africa, 2001-2013: A Distributional Analysis Using Household Asset Indicators. Social indicators research. pp1047-1073.

Kamuzora, C. L. and Mkanta, W., (2000). Poverty and household/family size in Tanzania: multiple responses to population pressure? [https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/1794/00.4_Research_Report_004.pdf?sequence=1] site visited on 12/7/2018.

Kes, A. and Swaminathan, H. (2006). Gender and time poverty in sub-Saharan Africa. Gender, Time Use, and Poverty in Sub-Saharan Africa. pp13-38.

Kessy, F. L., Mashindano, O., Shepherd, A. and Scott, L. (2013). Translating growth into poverty reduction: Beyond the numbers African Books Collective.

Klein, J. D. (2005). Adolescent pregnancy: current trends and issues. *Paediatrics* 116: 281-286.

Koenig, M. A., Phillips, J. F., Campbell, O. M. and D'Souza, S. (1990). Birth intervals and childhood mortality in rural Bangladesh. *Demography* 27: 251-265.

Komatsu, H., Malapit, H. J. and Theis, S. (2015). How Does Women's Time in Reproductive Work and Agriculture Affect Maternal and Child Nutrition? Evidence from Bangladesh, Cambodia, Ghana, Mozambique, and Nepal.

Kothari, C. R. (2004). *Research Methodology: Methods and Techniques*. New Age International, Delhi, 401pp.

Kotzé, D. A. (2003). Role of women in the household economy, food production and food security: Policy guidelines. *Outlook on Agriculture* 32(2): 111-121.

Kuhhirt, M. and Ludwig, V. (2012). Domestic work and the wage penalty for motherhood in West Germany. *Journal of Marriage and Family* 74: 186-200.

Kung, J. K. S. and Lee, D. Y. F. (2010). Women’s contributions to the household economy in pre-1949 China: Evidence from the Lower Yangzi Region. *Modern China* 36(2): 210-238.

Kurbanova, M. R. (2005). The role of traditional gender ideologies in the empowerment of women in post-Soviet Uzbekistan. Doctoral dissertation for Award Degree at Ohio University. 135pp.

Kurosaki, T. (2009). Vulnerability in Pakistan, 2001-2004. Background paper for the Pakistan Poverty Assessment Project, the World Bank.

Kuzilwa, J. A. and Mpeta, D. (2017). Strategies and policies for agricultural development in Tanzania. Contract Farming and the Development of Smallholder Agricultural Businesses, pp. 48-62. Routledge. 62pp.

Leavens, M. K. and Anderson, C. L. (2011). Gender and Agriculture in Tanzania EPAR Brief (Vol. 134). Seattle, USA: Evans School Policy Analysis and Research, University of Washington.

Lee, R. (2003). The demographic transition: three centuries of fundamental change. *Journal of Economic Perspectives* 17: 167-190.

Lusambo, L. P. (2016). Household's income poverty and inequalities in Tanzania: Analysis of empirical evidence of methodological challenges. *Journal of Ecosyst. Ecograph* 6(2): 183-192.

Lyimo-Macha J. and Mdoe N. (2002). Gender and rural poverty in Tanzania: Case of selected villages in Morogoro rural and Kilosa districts. LADDER Working Paper No.18. Morogoro.

Magalia, A. (2004). The Employment and Labour Relations Act of 2004 and its Success in Tanzania. 84pp.

Maloiy, L. (2018). *African Women and Economic Development: A Tale of Contradictions*? Handbook of Research on Sustainable Development and Governance Strategies for Economic Growth in Africa, IGI Global. 454pp.

Mashindano, O. and Maro, F. (2011). *Growth Without Poverty Reduction in Tanzania: Reasons for the Mismatch*. Kessy, F., Mashindano, O., Shepherd, A. and Scott

L. eds. Translating Growth into Poverty Reduction: beyond the numbers. Dar es Salaam: Mkuki na Nyota. pp1-33.

Mashindano, O., da Corta, L., Kayunze, K. and Maro, F. (2011). Agricultural growth and poverty reduction in Tanzania 2000-2010: where has agriculture worked for the poor and what can we learn from this? Chronic Poverty Research Centre Working Paper.

McFerson, H. M. (2010). Poverty among women in Sub-Saharan Africa: A review of selected issues. *Journal of International Women's Studies* 11: 50-72.

Mester, L. J. (2018). Demographics and their Implications for the Economy and Policy. *Cato Journal* 38(2): 399-413.

Milazzo, A. and Van de Walle, D. (2015). *Women left behind?* Poverty and headship in Africa. The World Bank. 40pp.

Miller, M. L., Moen, P. and Dempster-McClain, D. (1991). Motherhood, multiple roles, and maternal well-being: Women of the 1950s. *Gender and Society* 5(4): 565-582.

Ministry of Finance and Planning -Poverty Eradication Division (MoFP-PED) and National Bureau of Statistics (2019). Tanzania Mainland Household Budget Survey 2017-18, Key Indicators Report. Dodoma, Tanzania: 2019.

Mkenda, A., Luvanda, E. and Ruhinduka, R. (2010). Growth and distribution in Tanzania: Recent experience and lessons. Interim Report to REPOA.

Mmasa, J. J. (2013). Policy Brief No 8: Participation of women in Agriculture in Tanzania: Challenges and Policy Recommendations.

MoHCDGEC (2015). NBS, Office of the Chief Government Statistician, and ICF. Demographic and health survey and malaria indicator survey (TDHS-MIS), 16pp.

MoHCDGEC, T. and MoH, Z. (2015). Tanzania National Bureau of Statistics, Zanzibar Office of Chief Government Statistician, and ICF. (2016). Tanzania demographic and health survey and malaria indicator survey 2015-2016.

Moratti, M. and Natali, L. (2012). Measuring Household Welfare: Short versus long consumption modules.

Mwakaje, A. G. (2010). Gender, Poverty and Access to Socio-Economic Services in Un-Planned and Un-Serviced Urban Areas of Dar Es Salaam, Tanzania. 18pp.

National Bureau of Statistics (2017). Women and Men in Tanzania; Facts and Figures. Dar es Salaam: NBS.

National Bureau of Statistics (NBS) (Tanzania) and ICF Macro (2011). Tanzania Demographic and Health Survey 2010. NBS and ICF Macro Dar es Salaam, Tanzania.

Noel, S. (2012). The economics of climate change Tanzania. Water Resources. Stockholm Environment Institute SEI-Africa Centre. Institute of Resource Assessment, University of Dar es Salaam, Tanzania. 32pp.

Ogundari, K. and Aromolaran, A. B. (2014). Impact of education on household welfare in Nigeria. *International Economic Journal* 28: 345-364.

Okeyo, A. P. (1979). Women in the household economy: Managing multiple roles. *Studies in Family Planning* 10(11/12): 337-343.

Orvis, Stephen (1985) Men and women in a household economy: evidence from Kisii. Working paper no. 432, Nairobi: Institute for Development Studies, University of Nairobi [http://opendocs.ids.ac.uk/opendocs/handle/123456789/1292] site visited on 5/6/2019.

Palacios-Lopez, A., Christiaensen, L. and Kilic, T. (2017). How much of the labour in African agriculture is provided by women? *Food policy* 67: 52-63.

Paule-Paludkiewicz, H., Fuchs-Schündeln, N., and Masella, P. (2016). *Cultural determinants of household saving behaviour*. [https://www.econstor.eu/bitstream/10419/145854/1/VfS_2016_pid_6932.pdf] site visited on 10/10/2020.

Pearce, D. (1978). The feminization of poverty: Women, work, and welfare. Urban and social change review.

Peterman, A. (2011). Women's property rights and gendered policies: Implications for women's long-term welfare in rural Tanzania. *The Journal of Development Studies* 47: 1-30.

Pressman, S. (2002). Explaining the gender poverty gap in developed and transitional economies. *Journal of Economic Issues* 36: 17-40.

Pressman, S. (2003). Feminist explanations for the feminization of poverty. *Journal of Economic Issues* 37: 353-361.

Renner, M. and Taylor-Powell, E. (2003). Analyzing qualitative data. *Programme Development and Evaluation, University of Wisconsin-Extension Cooperative Extension,* pp1-10.

Rutstein, S. O. and Johnson, K. (2004). The DHS wealth index. DHS comparative reports no. 6. Calverton: ORC Macro.

Rwebangira, M. K. (1996). *The Legal Status of Women and Poverty in Tanzania* (100 Edn) Nordic Africa Institute. 57pp.

Sachs, J. D. (2012). From millennium development goals to sustainable development goals. *The Lancet* 379: 2206-2211.

Schmidt, L. and Sevak, P. (2006). Gender, marriage, and asset accumulation in the United States. *Feminist Economics* 12: 139-166.

Scholz, J. K. and Seshadri, A. (2007). Children and household wealth. Michigan Retirement Research Centre Research Paper No. WP. 158pp.

Schultz, T. P. (2006). Fertility and income. Understanding poverty. pp125-142.

Sidh, S. N. and Basu, S. (2011). Women's contribution to household food and economic security: A study in the Garhwal Himalayas, India. *Mountain Research and Development* 31(2): 102-111.

Sinding, S. W. (2009). Population, poverty and economic development. *Philosophical Transactions of the Royal Society B: Biological Sciences* 364: 3023-3030.

Skopek, J. and Leopold, T. (2019). Explaining gender convergence in housework time: Evidence from a cohort-sequence design. *Social Forces* 98(2): 578-621.

Treichel, M. V. (2005). Tanzania's growth process and success in reducing poverty International Monetary Fund. 26pp.

U.N.D.P., UN Economic Commission for Africa, African, U. and African Development Bank Group (2014). MDG 2014 Report: Assessing progress in Africa toward the Millennium Development Goals Analysis of the Common African Position on the post-2015 Development Agenda.

UN (2019). Producing Statistics on Asset Ownership from a Gender Perspective [https://unstats.un.org/edge/publications/docs/Guidelines_final.pdf] site visited on 01/10/2020.

UNDP, U. (2018). Human development indices and indicators: 2018 statistical update. *Briefing note for countries on the 2018 Statistical Update*. [http://hdr.undp.org/en/2018-update] site visited on 01/10/2020.

UNESCO (2000). Focusing Resources on Effective School Health: a FRESH start to enhancing the quality and equity of education. Washington DC, USA: World Bank.

UNESCO, I. C. T. (2011). Competency framework for teachers. Paris: United Nations Educational, Scientific and Cultural Organization.

UNESCO, P. (2000). The Dakar Framework for Action: Education for All: Meeting Our Collective Commitments: Including Six Regional Frameworks for Action UNESCO.

URT (1998). The National Poverty Eradication Strategy United Republic of Tanzania, Vice-President's Office.

URT (2004). Tanzania Employment and Labour Relations Act No. 6 of 4 June 2004. Dar es Salaam, Tanzania: International Labor Organization (ILO).

URT (2015). Tanzania Livestock Modernization Initiative [https:// livestocklivelihoodsandhealth.org/wp-content/uploads/2015/07/Tanzania] site visited on 12/09/2020.

URT (2016). National Five-Year Development Plan 2016/17-2020/21. Dar es Salaam, Tanzania: Ministry of Finance and Planning.

URT (2018). The Economic Survey 2017. Dodoma, Tanzania: Ministry of Finance and Planning.

URT (2018). Women and Men: Facts and Figures. Dar es Salaam, Tanzania: National Bureau of Statistics.

URT (2019). Household Budget Survey 2017-18: Key indicators Report. Dodoma, Tanzania: National Bureau of Statistics and Ministry of Finance and Planning.

URT (2019). Tanzania in Figures 2018. Dodoma, Tanzania: National Bureau of Statistics. [https://www.nbs.go.tz/nbs/takwimu/references/Tanzania_in_Figures_2019.pdf] site n visited on 24/09/2020.

Vyas, S. and Kumaranayake, L. (2006). Constructing socio-economic status indices: how to use principal components analysis. *Health Policy and Planning* 21: 459-468.

Williamson, J. G. (2001). Demographic change, economic growth, and inequality. Population Matters: Demographic Change, Economic Growth, and Poverty in the Developing World. pp106-136.

World Bank (2010). *Gender and Economic Growth in Tanzania*: *Creating Opportunities for Women*. Washington DC, USA: The International Bank for Reconstruction and Development / The World Bank. 164pp.

World Bank (2014). Tanzania - Big Results Now in Education Program Project. Washington, DC, USA: World Bank Group.

World Bank Group (2015). Tanzania Mainland Poverty Assessment. Washington, DC 20433, USA: World Bank, 1818 H Street NW.

World Bank Group (2016). World development report 2016: digital dividends World Bank Publications.

World Bank Group (2019). Tanzania Economic Update, July 2019: Human Capital - The Real Wealth of Nations.

Xhafaj, E., Nurja, I. and Xhafaj, A. (2013). Statistical estimation of poverty in Albania. [http://dspace.epoka.edu.al/handle/1/842] site visited on 10/10/2020.

CHAPTER TWO

The Relationship between Women's Socio-demographic Factors and Household's Socio-economic Status in Morogoro District, Tanzania

Edith T. Kwigizile[1], *, John M. Msuya[2], Michael J. Mahande[3]

[1]Department of Development Studies, College of Social Sciences and Humanities, Sokoine University of Agriculture, Morogoro, Tanzania

[2]Department of Food Technology, Nutrition and Consumer Sciences, Sokoine University of Agriculture, Morogoro, Tanzania

[3]Department of Epidemiology and Biostatistics, Institute of Public Health, Kilimanjaro Christian Medical University College, Moshi, Tanzania

Corresponding author: edithkwigizile@yahoo.co.uk

Publication status: Published: *African Journal of Rural Development*, Vol. 4 (2): Apri-June 2019: pp. 243-260.

2.1 Abstract

Rural households in Tanzania are characterized by low socio-economic status. Although contribution of women to household economy is vital, it is not clear on how their (women's) socio-demographics factors relate to SES of households in rural areas of Tanzania, irrespective of sex of the household head. This cross-sectional study assessed associations between selected women socio-demographic factors and household SES in a rural area of Morogoro District, Tanzania. The study involved 542 women aged 15 to 49 years, who had given birth to at least two children. Data were collected by face to face interviews, using a structured questionnaire and Focus Group Discussions. Principal

Component Analysis was used to construct household SES index. While binary logistic regression was used to analyze quantitative data, content analysis was used for qualitative data. Women older than 35 years had higher likelihood of being in the higher SES category compared to their younger counterparts [OR1.26 (95%CI1.82-2.94), p<0.05]. Living in highly accessible area (ward) was associated with being in the higher (medium-high) household SES [OR4.08 (95%CI 2.40-6.94), p<0.001]. Households with at least one under five child were less likely to belong to high household SES [OR 0.34 (95%CI 1.033-2.502), p< 0.05]. The study concludes that women's age and living in more accessible area relate positively with household SES such that being older than 35 years and living in more accessible area increase the likelihood to be in higher SES. The study concluded further that being with children aged below five years reduces the likelihood to attain higher SES. The study emphasizes empowering young women economically to enable them contribute to improving their households. Likewise, development agencies should improve communication infrastructure especially roads to promote women's engagement in a diverse of economic activities thus contribute growth of SES of their households. Family planning education should be strengthened to allow getting children while considering the negative effect on household SES particularly when children are under five years of age.

Key words: Household, socio-economic status, socio-demographic factors, women, poverty

2.2 Introduction

Worldwide, women are associated with household's low socio-economic status (SES). The concept of associating women and low SES is widespread (Chant and Sweetman, 2012; Dutt *et al.*, 2016; Semali, 2016; Tillmar, 2016; Kapunda, 2018). Literature shows

that in comparison to men, women as well as households headed by females are poorer implying that SES of those households is low (Cawthorne 2008; Kabeer, 2015; Magombeyi and Odhiambo, 2017; Lesetedi, 2018; Magombeyi and Odhiambo, 2019). It is worth noting that even the more recent studies which assessed SES of women and their households have not disapproved the former concept relating women and poor SES. In Sub-Saharan Africa, including Tanzania, women's SES shows similar trend that poverty is higher among women than their male counterparts (National Bureau of Statistics and Macro, 2011; Kehler, 2013). Poor household SES can be reflected by poor standard of living which is characterized by squalid surroundings, high maternal and child/infant mortality rates, low life expectancy, low per capita income, poor quality housing, inadequate clothing, utilization of poor technology, environmental degradation, unemployment, rural-urban migration and poor means of communication, to mention a few (Ryan *et al.,* 2006).

Factors relating women with low SES include poor access to formal education and attainment of skills which consequently affect their productivity, limited acquisition of income generation skills as well as female headship. In Tanzania, the findings of the Household Budget Survey 2017/18 indicate that poverty is associated with the sex of the household head, whereby out of the 26% FHHs, 27.4% are poor by basic poverty measurement (URT, 2019). However, other researchers have reported the 'non-return' gap of education attainment on improved SES through particularly in agriculture if untrained workers are used on the farm or if the attained education does not relate with the main economic activity (Javed *et al.,* 2008; Kurosaki, 2009; Himaz and Aturupane, 2011; Awan *et al.,* 2011; Ogundari and Aromolaran, 2014). Since these factors have shown to impact on women's SES, it develops a sense of curiosity to understand similar characteristics that affect household SES in Tanzanian rural households.

Socio-demographic factors refer to variables or attributes that are used to describe a person or a population. They include age, sex, education, migration background and ethnicity, religious affiliation, marital status, household characteristics, occupation and income. Others are gender, geographic location of respondent's religion as well as numerous other variables of interest (Purdie *et al.,* 2002; Huff and Tingley, 2015). Previous investigators have provided different opinions regarding the relationship between individual socio-demographic factors and SES. Some have demonstrated that demographic factors do not relate with SES (Pressman, 2003). Some of the available literature proposes different demographic factors to affect SES differently and through different mechanisms (URT, 1998; Awan *et al.,* 2011; URT, 2018a; URT, 2018b).

Reports illustrate that there is relationship between women specific demographic and poverty (UNESCO, 2000; Kabeer 2003; Awan *et al.,* 2011; Leavens, 2011; Chant, 2012; URT, 2018; URT, 2019a), but not with household SES. For example, it is suggested that poor access to education results into having lower levels of education, skills and knowledge as well as the capacity to acquire information (UNESCO, 2011; URT, 2018b; URT, 2019b), hence limited acquisition of income generation skills resulting to poor SES. Household headship results into being single bread earners, being constrained on socio economic mobility due to cultural, legal and labour market barriers (Kabeer, 1988; Kabeer, 2003c; Chant, 2004; Milazzo and Van de Walle, 2015), thus lower productivity due to less labour input, less training and poor access to information about new technologies (DeGraff and Bilsborrow, 1993).

Literature shows that changing population and individual demographics can shape the trajectories of economic development in households, societies and countries through the emergence of new opportunities and challenges (Birdsall *et al.,* 2001; Williamson, 2001;

Lee, 2003; Bloom and Finlay, 2009; Sinding, 2009; Dao, 2012). It is therefore notable that women related factors that affect SES are multiple and complex. Knowledge on the complex interrelationships between socio-demographics in relation to economic development in society is important for transforming development strategies. This is because socio-demographic factors as well as economic processes and outcomes not only vary from one society to another, but also, change with time (Breuer and Wicker, 2008). The variation in opinions regarding socio-demographic factors in relations to SES suggests the importance to establish the relationship that exists between the two kinds of variables with specific socio-economic groups. In this line of thought, it is critically important to understand the socio-demographic characteristics of the population so as to timely devise appropriate strategies for improving rural household SES.

The government of Tanzania has made effort to improve the living standards of its people and improved livelihoods of individuals, families and communities are mostly reflected in the contexts of socio-economic development, poverty reduction and economic growth as documented in different national policies and strategies. These strategies include the national Five-Year Development Plan (FYDP) 2016/2017-2020/2021 which incorporated in its framework the National Strategy for Growth and Reduction of Poverty (NSGRP)/ MKUKUTA I and II (URT, 2005, 2015, URT, 2016). Specifically, Government though the FYDP intends to attain higher economic growth through different strategies that include to emphasize industrialization and openness to regional and global trade than previously. The strategy requires concerted efforts to build and reorganize domestic productive capacities and at the same time ensuring a conducive environment for doing business and investment (URT, 2016).

Despite good plans of rising SES of Tanzanians, the problem of poor SES still exists at different levels. More than a half of the rural population are poor (World Bank Group, 2016). With reference to the 2017-18 National Household Survey in Tanzania (URT, 2019), 80% of the rural population is in the three lowest wealth quintiles. In contrast, 88% of the urban population belongs to the two highest wealth quintiles. This implies that only a small proportion (20%) of rural Tanzanian households is in the two higher quintiles compared to the urban households (URT, 2019). Based on head count ratio, more than a half (55%) of households in Morogoro District, where this study was conducted, is poor (Lusambo, 2016).

Women, who constitute majority of the work force in agriculture, up to 54% and actively involved in household economy, are constrained in production and closely related to low SES. Factors that affect women's SES are not confined to FHHs, they also affect other households (Ellis, 2007; Ferreira and Ravallion, 2009; De Weerdt, 2010; Chant, 2012; FAO, 2014). Studies that seek to explain how women related factors associate with household SES apart of household headship are scarce (McCoy *et al*., 2014). Therefore, it can be noted that factors that affect women's SES are known. But the way women's socio-demographic factors relate to SES of households in rural areas of Tanzania, irrespective of the sex of household head, is not clearly known. This study, therefore, sought to investigate the linkages that exist between women's socio-demographic factors and SES of households in Tanzanian rural context. Specifically, the study aimed to explore the association between selected women socio-demographic factors (age, education level, marital status, ward of residence, sex of household head, number of household members/family size and the age composition of households) with SES.

Understanding the socio-demographic factors that constrain women's economic contribution is important because women constitute majority [more than half (54%)] of the productive force in agricultural sector in Tanzania, which is the main economic activity in rural areas and the main contributor to the national GDP (Leavens, 2011; Palacios-Lopez and Lopez, 2014). It is envisaged that, findings from this study will be used by policy makers and development planners in coming up with strategies to support government's efforts of improving the living standards of Tanzanians as shown in the Second Five-Year Development Plan (FYDP II) of 2016/17-2020/21(URT, 2016). The global Sustainable Development Goals (SDGs 1 and 8) and National Development Strategy (FYDP II) target to ensure that women's production potential is fully utilized so as to realize the planned socio-economic growth targets. Therefore, findings from this study guide interventions focusing to include women in economic productions consequently raise household SES.

This study is based on the Gender Poverty Gap theory (Pressman, 2002), which is part of the feminization of poverty theories that analyzed, among other things, the demographic, household and human capital factors in relation to SES. According to the Gender Poverty Gap theory, the theorist argues that demographic factors that include education level of household members; occupation where adults in the family are employed, age distribution of family members, household size, ethnicity and race, and the marital status of the family or household head had no empirical relationship with poor SES among women (Pressman, 2002). The theorist insists that neither age nor education can explain much the gender poverty gap; instead, the theorist links the poverty gap with human capital. Human capital refers to skills, knowledge and experience processed by an individual or population viewed in terms of their value or cost to organization or country (Pressman, 2003). Based on theory, the current study hypothesized (null hypothesis) that women's socio-demographic factors have no significant relationship with the household SES in rural settings.

2.3 Methodology

2.3.1 Description of study area

The study was conducted in Morogoro District (Fig. 2.1) whereby six villages were randomly selected from three administrative wards in the district. The villages were Kinonko and Maseyu from Gwata ward, Madamu and Kibwaya from Mkuyuni ward as well as Tandai and Ludewa from Kinole ward. The area was chosen purposively because it consisted of high proportion of households with low SES. Based on head count, more than a half (55%) of households in Morogoro District were regarded as poor (Lusambo, 2016; Lusambo *et al.,* 2016). This data is supported by the fact that 56% of households of Morogoro region falls between the lowest and the middle wealth quintiles (National Bureau of Statistics and Macro (2011). In addition, it is reported that 80% of rural households falls in 3 lowest wealth quintiles (URT, 2019).

Morogoro District is one of the seven districts of Morogoro region in Tanzania. Other districts are Gairo, Kilombero, Kilosa, Morogoro Urban, Mvomero and Ulanga. The main economic activity for people residing in Morogoro District is crop farming. Gwata ward is located along the Dar es Salaam – Morogoro highway and thus readily accessible by tarmac road. This was categorized as easily accessible. On the other hand, other study wards (Mkuyuni and Kinole) can be accessed by rough road; these were categorized as less accessible. Kinole is 50.8Km and Mkuyuni is 27.2Km from Morogoro town where tarmac road/highway can be accessed. Importantly, Ludewa village and some parts of Tandai village can difficultly be accessed by car due to poor roads. The study included two villages from each of the selected wards. While road accessibility was considered for categorizing the wards as more accessible and less accessible, other social cultural factors were assumed to be similar across the study wards. This is because the area is dominated by the same ethnic group i.e. Waluguru (URT, 1997). The social cultural factors include

attitudes, child rearing, wealth, religion, buying habits, education level, and family size and structure (Thornton *et al.*, 2011).

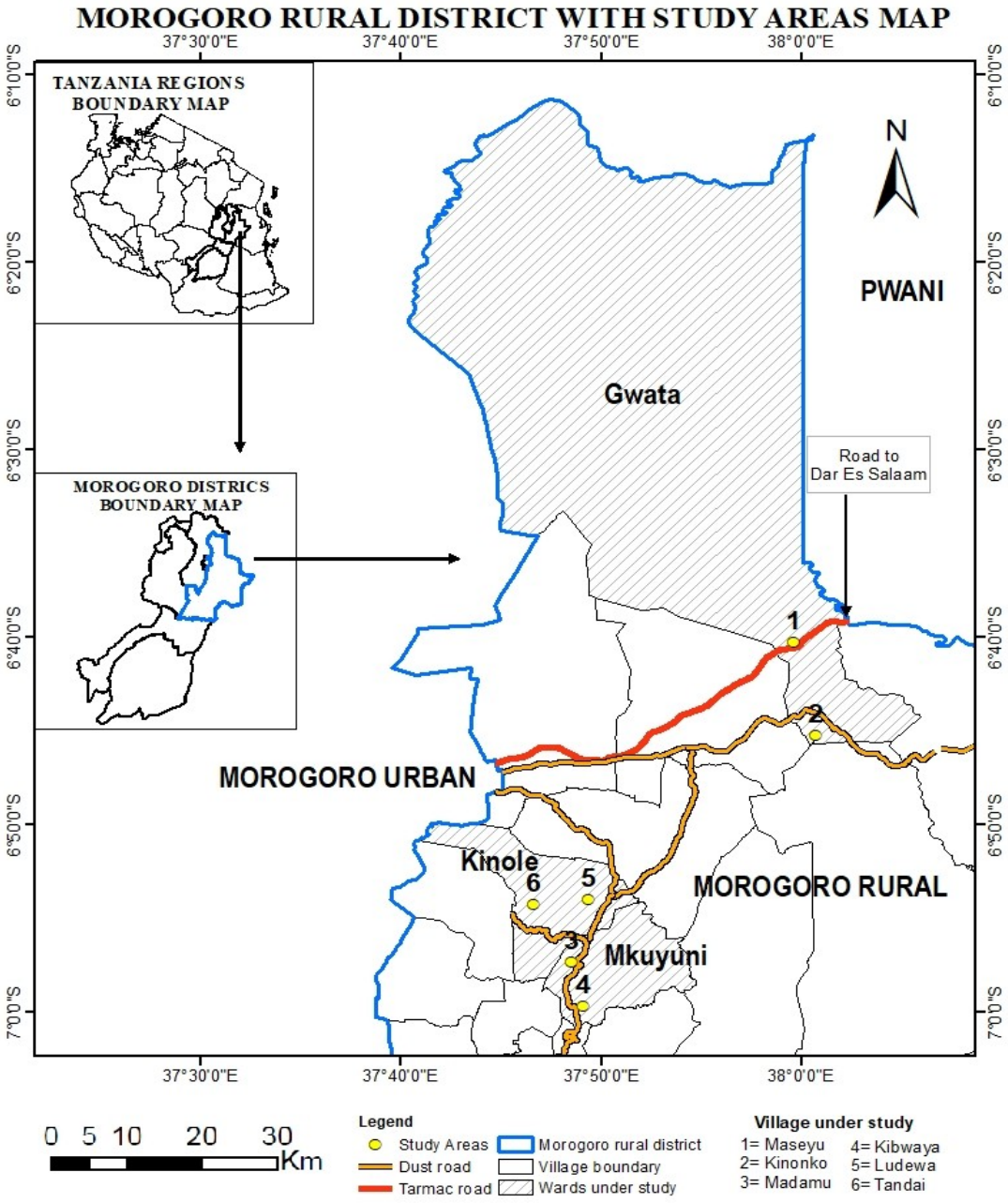


Figure 2.1: Map showing the study areas

2.3.2 Study design

This was a cross-sectional study whereby the design was preferred over others because of its convenience in collecting data, which is done at one point in time thus cost effective but it provides quality data (Kothari, 2004).

2.3.3 Study population, inclusion and exclusion criteria

This study focused on women of reproductive age who were between 15 and 49 years old (National Bureau of Statistics and Macro, 2011). Reproductive age was important to capture information about composition of under five children in households. Furthermore, 15 years and above is considered the work age in Tanzania (NBS, 2017), hence important for analyzing factors relating to SES. Respondents were from either female or male-headed households. The ultimate units of analysis were households of respondents' residents. Therefore, gender, age, and area of residence were the basis for selection of respondents. Women from both male and female households were included because the study intended to investigate among other things, the relationship between sex of household head and household SES. Women were liable to exclusion if did not consent to participate in the study.

2.3.4 Sample size and sampling procedure

A multistage sampling was used. While study district and wards were purposively selected, villages were selected randomly by listing all the villages in the study ward, assigning them numbers and using small pieces papers with the assigned numbers, two papers were picked after thorough mixing. The picked pieces indicated the villages to be included in the study. From village registers, purposive sampling was used to select women with required characteristics and generate a list that formed a sampling frame. Village registers were used in order to avoid selection bias. The required characteristics were women of reproductive age (15-49) years with at least two children. The reproductive age was adopted from the Tanzania Demographic and Health Survey (2010) (National Bureau of Statistics and Macro, 2011). From the lists, all women who were heads of households were selected. These were all purposively included in the study

because literature shows that they are few, not more than 25% in population (National Bureau of Statistics and Macro, 2011).

Women from male-headed households were randomly sampled whereby everyone was assigned a number and using small pieces of papers with the assigned numbers, the required sample was picked randomly after thorough mixing of the pieces. In total, 627 women were interviewed but after data cleaning, 542 (323 women from male headed households and 219 women who were heads of households i.e from (FHHs) qualified for analysis. In addition to women's data, women who were heads of households provided data of their households and those from male headed households provided data concerning themselves and the households in which they were coming from. It was important to include women from both male and female-headed households since the study intended to explore among other things, the relationship between sex of household head and SES as part of household structure.

2.3.5 Tools for data collection and their pretesting

Data collection involved the use of structured questionnaire (Appendix 1) in collecting primary data through interviews. Focus Group Discussions (FGDs) were guided by a pre-determined FGD guide (Appendix 2). The questionnaire was pre-tested to 10 women to find out whether respondents could understand the questions in the same way thus give the intended data. This process tested validity of the questionnaire. In addition, SPSS software was used before pre-testing to the field. SPSS tests correlation between each question in the questionnaire and its total value (Mohajan, 2017). If Significance <0.05, the question/instrument is valid. If Significance >0.05, the question/instrument is not valid hence it is deleted/removed. This method was previously used by other scholars (Collins, 2003; Azzarri *et al.,* 2006). Correlation of study questions was 0.03.

2.3.6 Data collection methods

Both quantitative and qualitative data were collected. Data collection methods included face-to-face interviews with women respondents, FGDs and observations. While a structured questionnaire was used to guide interviews with respondents, a focus group guide was used for FGDs. Data were collected about respondent's age, education level, marital status and household structure. Data were also collected about household assets and housing characteristics in order to generate household SES. Observation was mostly used to verify the information provided about owned assets. Observation was important to support further processing of asset related data for example during assigning scores which presents estimated weight of the assets. The scores enabled differentiating the asset and finally categorising SES.

Three focus groups each consisting of 6-8 women were involved in qualitative data collection. In total, 21 women participated in FGDs. Each participant of FGDs should have ever been a leader of women example leader of women's social or economic groups, leader in village Government or member of any community committees. Leadership position was important to make sure that participants of FGDs had interacted with women and study community hence had knowledge about study issues. Each group consisting of 6-8 women was formed from one village of each participating ward. Discussions continued until when no new information or themes were observed in the data collected. This took about 1.30 hours.

2.3.7 Study variables

2.3.7.1 Explanatory variables

The independent variables included: respondent's age, education level, marital status and the woman's place (ward) of residence. Others were sex of household head, household

size and age of household members. Important variable definitions are presented in Table 2.4. The age of a respondent was recorded as continuous variable, but was categorized as 18 – 24 years (youth), 25 – 34 years (middle age) and 35-49 as an adult. Categorization of age was important because this study intended to explore the women's age in relation to household SES. The age (years) range was adopted from the Tanzania Demographic and Health Survey 2010 (National Bureau of Statistics and Macro, 2011). Education level referred to attainment of primary, secondary or higher education according to education system in Tanzania. This was also predefined in the Tanzania Demographic and Health Survey (URT, 2016). A household is defined as a unit composed of one or more persons living together under the same roof and eating from the same pot and or making common provision for food and other living arrangements (Lesetedi, 2018). Household characteristics included sex of household head, household size and age of household members.

2.3.7.2 Outcome variables: Socio-economic status

The outcome variable of this study was household socio-economic status (SES), measured by asset possession and housing characteristics as described in the Tanzania Demographic and Health Survey 2010 (National Bureau of Statistics and Macro, 2011) and as adopted by other scholars (Jeckoniah *et al.*, 2014). The SES was defined based on wealth index generated from house ownership and material used to build the house as well as the toilet facility (Vyas and Kumaranayake, 2006). Wealth index is calculated using easy to collect data on a household's ownership of selected assets, such as televisions and bicycles, materials used for housing construction; and types of water access and sanitation facilities (Vyas and Kumaranayake, 2006). According to National Bureau of Statistics and Macro (2011), the availability of durable consumer goods is a good indicator of a household's socioeconomic status. Moreover, particular goods have specific benefits such as having

access to a radio or a television exposes household member to innovative ideas; a refrigerator prolongs the wholesomeness of foods; and a means of transportation allows greater access to many services away from the local area.

Therefore, SES is one of the most important variables in social economic development and it plays a significant role in planning and implementation of developmental programs (Bradley and Corwyn, 2002; Abraham, 2016). In this study, Principal Component Analysis (PCA) was used to generate SES categories based on information collected about household assets. The information included ownership of a house and material used to build the house and the toilet facility. Also, possession of assets included a motorbike, radio, bicycle, generator and solar energy facility.

2.3.8 PCA tests for suitability and selection of items

In this study, PCA was chosen as the appropriate method for generating household SES as previously used by other scholars (Vyas and Kumaranayake, 2006; National Bureau of Statistics and Macro, 2011; Jeckoniah *et al.,* 2014). Before using PCA method, various tests are done checking to make sure that the data to be analysed fulfil key assumptions required for PCA. The tests are explained in the following section.

2.3.8.1 Sampling adequacy and test for correlations

Test for sampling adequacy

In order to produce reliable result, PCA requires large enough sample sizes. There are a few methods to detect sampling adequacy. One of the methods is the Kaiser-Meyer-Olkin (KMO). Test for sampling adequacy showed that Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.688. It is recommended that high values of KMO (close to 1.0) are preferable (IBM Knowledge Centre, 2019).

Test for correlations

Battlett's test of sphericity was used to test correlation between variables. It was found that the correlation was 0.111; few correlations above 0.3 are not recommended (Beaumont, 2012). All the items used were checked if they correlate sufficiently. While communalities above 0.4 are recommended (Loewen and Gonulal, 2015), it was found that all items selected to determine SES in this study correlated with all other items with exception of living in own or rented house which had correlation coefficient of 0.376 (Table 2.1).

Table 2.1: PCA Extraction Method: Correlation with all other items

	Communalities	
Asset /Characteristics	**Initial**	**Extraction**
Own a house	1.000	.376
Household floor	1.000	.560
House wall	1.000	.563
House roof	1.000	.528
Toilet roof	1.000	.736
Toilet wall	1.000	.796
Ownership-car	1.000	.828
Ownership-motor bike	1.000	.547
Ownership-TV	1.000	.631
Ownership-solar panel	1.000	.713
Ownership- a bicycle	1.000	.727
Ownership-generator	1.000	.641

2.3.8.2 Selection of key items

Selection of items was based on eigenvalues. As recommended by Kaiser (1960), and adopted by other scholars Xhafaraj (2013), factors with eigenvalues equal or greater than 1 were retained (Table 2.2). Based on the eigenvalues, 4 components were retained which were identified as toilet roof, toilet wall, ownership of a car and ownership of solar panel (Table 2.3). This concept of retaining important variables was also used by Xhafaraj (2013).

Table 2.2: PCA Extraction Method: Selection of items based on eigenvalues

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.893	24.106	24.106	2.893	24.106	24.106
2	1.669	13.911	38.017	1.669	13.911	38.017
3	1.300	10.832	48.849	1.300	10.832	48.849
4	1.144	9.532	58.382	1.144	9.532	58.382
5	.917	7.640	66.022			
6	.820	6.830	72.852			
7	.732	6.098	78.950			
8	.629	5.243	84.193			
9	.554	4.614	88.807			
10	.483	4.027	92.834			
11	.441	3.678	96.511			
12	.419	3.489	100.000			

Table 2.3: PCA Extraction Method: Selected items

Components	Initial	Extraction
Toilet roof	1.000	.744
Toilet wall	1.000	.751
Ownership of a car	1.000	.686
Ownership of a solar panel	1.000	.571

Using the factor scores from the first principle component, as weight, a dependent variable can be constructed for each household. This dependent variable can be regarded as the household asset score, and the higher the household asset score, the higher the implied SES of that household (Xhafaraj, 2013). According to Azzarri *et al*. (2006) and Kolenikov and Angeles (2009), PCA was used to generate wealth scores which were categorised into two categories of household SES as Low and Medium-High. The results of SES are shown in Table 2.7 in the subsequent section. Similar procedure was previously used by Vyas and Kumaranayake (2006).

2.3.9 Statistical data analysis

Data analysis was performed using SPSS software version 22. The measures of central tendency (means and/or medians) were used to summarize continuous data while frequencies and percentages were used for categorical variables. Logistic regression analysis was used to measure the association between the categorical dependent variable and explanatory variables. The independent variables were individual demographic factors and household characteristics. Odds ratio (ORs) with 95% confidence interval was estimated for the study variables. A p-value of <0.05 was considered to be the cut-off point for statistical significance. In logistic regression, the odds ratio (OR) represents the constant effect of a predictor X on the likelihood that one outcome will occur. It is a measure of association between an explanatory and an outcome variable. For example, an OR of 1.2 means there is a 20% increase in the odds of an outcome with a given explanatory variable (Burgess and CrP CHD Genetics Collaboration, 2013). Adjusted OR means that controls for other predictor variables in a model. Based on the nature of the dependent variable (dichotomous) a binary logistic regression model was used to predict the likelihood for a household to attain a certain socio-economic status (SES). The model is appropriate to predict dichotomous categorical outcomes (Pallant, 2010 and Field, 2013 cited in Lyatuu and Urassa, 2014).

Based on results of PCA on categories of SES (Low, Medium and High) with proportion of households 42.7%, 40.1% and 17.2% respectively (Table 2.4), it was important to merge the “High” with Medium category so as to make relatively big proportion in each category that could provide meaningful results in associating SES and explanatory variables. This process resulted in two categories of outcome variable [Low and Medium-High], which determined the choice of appropriate statistical analysis model (Binary logistic regression).

The model is presented below:

Logit (pi) = log (pi/1-pi) = $b_0 + b_1X_1 + b_2 X_2 + \ldots + b_kX_k$

Where:

Logit (pi) = natural log of the odds of an event occurring (dependant variable) i.e. the probability of households to attain certain SES, (Low, Medium-High). pi = prob (event), that is the probability that the event will occur 1-pi = prob (non-event), that is the probability that the event will not occur. b_0 = constant of the equation b_1 to bk = coefficients of the independent (predictor, response) variables k = number of independent variables X_1 to Xi = independent variables entered in the model as listed below:

X_1 = Age of respondent (years), X_2 = Marital status of respondent, X_3= Education level of respondent, X_4 =Ward of residence, X_5 = Household with children aged <5 years, X_6 = Household with children aged ≥5 years, X_7 = Sex of household head, X_8 = Household size

Table 2.5: Definition of key variables according to this study

Variable	Definition	Level of Measurement (Binary level)
Age*****	A number of years a person has lived.	(≤35 or >35) years of age
Marital status	Situation of respondent with regard to whether she had ever married or never married	Never married or ever married
Education level*****	Refers to attainment education according to education system in Tanzania categorised as primary or secondary school/ higher education	Up to primary or Sec school or higher
Sex	Biological characteristic of being male or female.	Male or female

Key:

*****Age: 35 years of age was a cut off point because after this age, women could have gained confidence thus sufficiently interact with social and economic groups in the village (FGDs)

*****Education: Up to primary: This category includes those who did not attain formal education.

Content analysis was used to analyze qualitative data. This involves reading the text or notes recorded during discussions and organizing the data according guiding questions. Themes were then outlined and used to explain the findings. The themes differed depending on the study objective. Triangulation of information was used to make sure that the information reported was not bias. The method is recommended by Renner and Taylor-Powell (2003).

2.4 Results and Discussion

2.4.1 Socio-demographic characteristics of respondents

Demographic characteristics of study respondents are presented in Table 2.5. A total of 542 questionnaires were analyzed. The age of respondents ranged from 18 to 49 years with a mean age of 33.6 (SD±7.9). Majority of respondents were within the category of 25 and 35 years. Since this study involved women of reproductive age with at least two children, the findings imply that most of the women in the study area bear children within this age range. More than a half of the respondents (56.4%) had attained primary school education and about forty percent (40.6%) of respondents had no formal education. Based on FGDs in Maseyu village, reasons for high illiteracy rate among women were gender discrimination, poverty and cultural beliefs.

The proportion of respondents who had not received formal education is above the national illiteracy rate of 22% in 2010 and 18.0% for 2012. The highest proportion of the population who had never been to school in 2012 was reported in Tabora (42% for females and 34% for males). The lowest proportions of household members who had never attended school were in Kilimanjaro (10% for females and 4% for males) and Dar es Salaam (11% for females and 4% for males (National Bureau of Statistics and Macro, 2011). The findings are in agreement with previous studies conducted in Tanzania and

elsewhere indicating high level of illiteracy in sub Saharan Africa (Tabutin *et al.,* 2004; Jogwu, 2010; Mtega, 2012; Mellat *et al.,* 2014).

Through FGDs, it was noted that the main reason for non-attainment of basic education for women in previous years were gender discrimination, poverty and cultural beliefs. whereby it was not a priority to educate girls. One of participants of the FGDs had the following to say;

> *"During our schooling age, girls were not given priority for schooling. For example, I liked schooling but my parents did not support me so I did not attain formal education"* (FGDs, Halima, Maseyu village-Gwata ward, 30/12/2017).

This is supported by other scholars such as Rehema *et al*. (2014) and Mushi and Mwakasangula (2008) who report that the barriers of attaining education for women include poverty and preference for boys in attaining education, early marriages and poor gender division of labour. The authors maintain further that girls were normally caregivers and assistants to their mothers for doing household chores; and sometimes work as a substitute when the mother is not around. In addition, through FGDs it was revealed that the matrilineal system to which the study population belongs contributed to the challenge of education to girls in the sense that it was preference for girls to get married early so as to get children thus extend the clan (FGDs). Therefore, just after onset of puberty, girls were trained to be good wives and mothers (Mushi and Mwakasangula, 2008 and Rehema, *et al.,* 2014).

It was noted further that community members have realized the current change whereby there is emphasis on education for all, males and females. The change has resulted to increase for enrolment of girls in schools. For example, the current report from the

Government indicates that for the year 2018, the Net enrolment rate (NER) for boys was 94.7% and that for girls is 96.1% revealing gender parity in primary education enrolment (URT, 2019). Based on the same source, NER is the ratio of children of official school age who are enrolled in school to the population of the corresponding official school age.

About a third of the participants (29.2%) were previously married but they were widowed, separated or divorced at the time of the survey. FGDs showed that instability of marriage was attributed with gender-based violence, early marriage, and poverty. More than a half of the respondents (56.5%) came from Kinole ward and the rest came from Mkuyuni and Gwata wards. Majority of the respondents (60.7%) came from households consisting of five (5) or less persons. The rest proportion consisted of more than five persons. The observed composition of households complies with the data from the Tanzania Demographic and Health Survey of 2010 that 39% of households in Tanzania Mainland rural consisted of 6 or more members (National Bureau of Statistics and Macro, 2011).

Data on household composition shows that almost sixty percent (59.6%) of the respondents came from male-headed households. Of the 542 respondents 314 or 57.9% were from households with under-fives (<5 years), whereas 72.9% of those households had only one under five child. Four hundred and eighty respondents came from households consisting of children aged between 5 and 14 years whereby nearly three quarters (71.5%) of the households consisted of 1-2 children and the rest of the households had 3 children or more. The composition proportions imply highly involvement in care activities since many households are composed of under five children and those aged 5-14 years, the group which is mainly schooling.

Table 2.6: Socio-demographic characteristics of respondents

Characteristics	Frequency	(%)
Age category (years)		
18 – 24	62	11.4
25 – 35	275	50.7
36 – 49	205	37.9
*Mean (SD); Range	33.6 (7.9); 18-49	
Education level		
No formal education	220	40.6
Primary school	306	56.4
Secondary school or higher	16	3.0
Marital status		
Never married (Single)	56	10.3
Married/cohabiting	328	60.5
Divorced, widow, separated	158	29.2
Ward of residence		
Gwata	105	19.4
Kinole	306	56.5
Mkuyuni	131	24.2
Household size		
5 or less	329	60.7
More than 5	213	39.3
Median (IQR)*** HH size	5 (4 – 6)	
Sex of household head (n=542)		
Male	323	59.6
Female	219	40.4
HH composition by age (years)		
Under five (n=314)		
1 Child	229	72.9
2 or more children	85	27.1
5 – 14 years (n=480)		
1 – 2 children	343	71.5
3 or more children	137	28.5
15 years and above (n=452)		
1 – 3 persons	425	78.4

*SD=Standard deviation; Key: **HH = Household ***IQR=Interquartile range

2.4.2 Socio-economic and housing characteristics of respondents

Socio-economic characteristics of respondents are summarized in Table 2.6. Majority of respondents (99.3%) depend on agriculture as the main economic activity while only 2.2% depend on livestock keeping. The remaining respondents (0.9%) depend on

business/trading. Proportions of activities reported in Table 2.4 overlap in a way that, some respondents are engaged in more than one economic activity. Most of the respondents (85.4%) live in their own houses, the rest live in either rented or relatives' homes. Very few respondents owned assets such as car (0.4%), generator (0.9%) or solar panel (0.9%).

Eighty eight percent (88.3%) of the houses had earthen floors whereas those constructed with cement or concrete floors were only 11.7%. Regarding materials used to make house walls, 80.1% were constructed with mud while 19.3% were constructed using bricks. More than half (54.4%) of respondents' houses were roofed with iron sheets. More than sixty percent (61.7%) had their toilet buildings made of mud walls and 46.8% thatched roofs while 38.4% were not roofed. Most respondents (61.5%) reported to possess none of the assessed assets (Table 2.4). Except for radio, other durable goods such as bicycle, solar energy facility and motorcycles were possessed by small proportions of respondents This is in line with the National (Tanzania) Bureau of Statistics and Macro (2011).

Table 2.7: Socio-economic characteristics of respondents' residence

Characteristics	Frequency	(%)
Economic activity* (n=538)		
Crop cultivation	534	99.3
Livestock keeping	12	2.2
Business	5	0.9
Asset ownership (n=534)		
House ownership		
Own	456	85.4
Don't own	78	14.6
HH possessions (n=538)		
Car	2	0.4
Motor cycle	12	2.2
Radio	118	21.9
Bicycle	53	9.8
Generator	5	0.9
Solar panel	12	2.2
TV	5	0.9
Possess none of the above	331	61.5
Housing characteristics(n=538)		
Type of the house floor (n=539)		
Cement	63	11.7
Earth floor	476	88.3
Type of the house walls(n=538)		
Concrete/burnt bricks	104	19.3
Mud bricks	434	80.1
Type of the house roof (n=540)		
Iron sheet	294	54.4
Thatch roofing	246	45.6
Type of the toilet wall (n=538)		
Burnt bricks	35	6.5
Mud	332	61.7
Grass	149	27.5
No toilet	22	4.1
Type of the toilet roof (n=537)		
Iron sheet	47	8.8
Thatch/plastic sheets	262	48.8
Unroofed	206	38.4
Not applicable	22	4.1

*Variable with multiple responses

Using PCA, the above assets and housing characteristics were used to generate SES categories as shown in Table 2.7. The SES is categorized as Low, Medium and High. It can be noted that a small proportion of households (17.2%) fallen into higher SES category and the remaining, almost equal proportions (42.7% and 40.1%) fallen into low and medium category respectively. Characteristics of the socio-economic groups' in the three categories are presented in Appendix 5.

Table 2.8: Proportions of households in SES categories

SES categories	SES dichotomy	Minimum score	Maximum score	Households (%)
Low	Low	-1.9382	-0.38846	42.7
Medium	Medium-High	-0.30564	1.031175	40.1
High		1.13529	4.194799	17.2

2.4.3 Proportions of respondents per variable in household SES categories

Distribution proportions of respondents in categories of household SES based on particular study variable are shown in Table 2.8. However, description of the distribution is based on statistical analysis in Table 2.9

Table 2.9: Proportions of respondents per socio-demographic variable in household SES (n=542)

Variable	Low		Medium-High	
	No	%	No	%
All Participants	242	44.7	300	55.4
Age of respondent (years)				
≤35	162	48.1	175	51.9
>35	80	39.0	125	61.0
Marital status				
Never married	21.0	37.5	35.0	62.5
Ever married	221	45.5	265	54.5
Education level				
Up to primary	238	45.3	288	54.8
Secondary school or higher	4	25.0	12	75.0
Ward of residence				
Kinole or Mkuyuni	221	50.6	216	49.4
Gwata	21	20.0	84	80.0
HH with children aged <5 years*				
Do not have	74	39.2	115	60.8
Have	168	47.6	185	52.4
HH with children aged ≥5 years				
Do not have	34	40.5	50	59.5
Have	208	45.4	250	54.6
Sex of household head				
Male	147	45.5	176	54.5
Female	95	43.4	124	56.6
Household size				
5 or less	143	43.5	186	56.5
More than 5	99	46.5	114	53.5

2.4.4 Association between socio-demographic factors and household SES

Socio-demographic factors that included age of respondent, marital status, education level and ward of residence as well as household characteristics were associated with household SES (Table 2.9). Binary logistic regression results showed that women older than 35 years had higher likelihood of being in the medium to high household SES category compared to women who were younger than 35 years [OR1.26 (95%CI1.82-2.94), $p<0.05$]. Contrary to the hypothesis that socio-demographic characteristics have no relationship with the household SES in rural settings, women older than 35 years were more likely to belong to the better household SES. While this finding contradicts with the Gender Poverty Gap theory, the results were in line with Brown and Hirschl (2010) who reported that households headed by youth were more likely to be poor.

The age gap in economic wellbeing was attributed with demographic and social changes (Pew Research Centre, 2011). The long-term changes included delayed entry into the labour market and delays in marriage, the two markers of adulthood traditionally linked to income growth and wealth accumulation. Another factor was unemployment; it was noted that unemployment rates for young adults were higher in young adults than for the oldest adults (11.7% compared with 6.7%). In Tanzanian rural context, employment is mainly in agriculture whereby most of rural residents are engaged in subsistence farming. As far as this study is concerned, young women were likely to come from young households which difficultly access to means of productions including land, therefore apart from agriculture, there is a need to promote alternative income generating activities particularly for young women.

According to Food and Agriculture Organization (FAO), low SES of rural population can be improved by making agriculture more inclusive, sustainable and productive (FAO,

2018). For example, reports show that globally, 60% of employed women work in the agricultural sector (FAO, 2018). Based on this, it is suggested that policies to improve SES in rural areas must be gender-equitable, gender-sensitive and strengthen rural women's economic empowerment. Moreover, a slogan embedded in strategies by FAO for improving wellbeing of rural populations is to advocate "leave no one behind" (FAO of the United Nations, 2020), mentioning rural women and the youths as special groups for inclusion in the strategy. In promoting improvement of SES among rural populations, FAO has prioritized in identifying opportunities along the value chain, exploring farm and off farm employment opportunities, innovation, private-public partnerships and skills mix development. In implementing this, age group participation is emphasized whereby youths aged 15 to 17 years are given priority.

Other researchers relate higher ages with opportunity of getting time to form and maintain social networks that supports economic productions. It is proposed that the age around 40's is associated with forming and maintaining social networks, which is important for accessing production resources (Ajrouch *et al.,* 2005). However, such opportunities or production resources can be made available to women aged below 35 years to increase their productivity. This could increase the ability of households to save and accumulate assets, thus contribute to improve SES of their households (Ajrouch *et al.,* 2005; Pawasutipaisit and Townsend 2011). A study done before in the same district (Morogoro-Tanzania) showed that women diversification and involvement in non-farm economic activities enhances women's productivity (Lyimo-Macha and Mdoe, 2002). This emphasize that enhancing women access to economic opportunities speeds up rising household's SES in rural areas.

Living in Gwata ward, which was more accessible by road compared to the other study wards was associated with being in the medium to high SES category [OR4.08(95%CI2.40-6.94), p<0.01]. Findings show that residing in Gwata ward was slightly more than four times likely to attain higher (medium-high) SES compared to Kinole or Mkuyuni. Gwata ward is located along the Dar es Salaam-Morogoro highway (tarmac road) and most of the women who participated in this study could be accessed by road compared to those from Kinole and Mkuyuni wards. Other wards which participated in the study were Mkuyuni and Kinole. The latter wards are accessed by rough road and some their areas like Ludewa village can difficultly be accessed by car due to poor road. Easy access to the main road made easy engagement of respondents in income generating activities since they were able to exploit market opportunities for their products at surrounding towns like Morogoro, Dar es Salaam, Iringa, etc. Among the study respondents, higher proportion of respondents from Gwata in addition to engaging in farming, they were trading compared to respondents from other areas. It was noted that 23.8% of respondents from Gwata and 6% from Kinole and Mkuyuni were engaged in trading.

Similarly, a study conducted in Malaysia showed that the impact of roads varied within an area and it was considerably greater when roads provided communities with access to a major urban centre compared to a small town (Windle and Cramb, 1997). It is also suggested that employment opportunities also increase when rural areas are better connected to secondary towns. This is because the demand of those towns can strengthen connections between different segments of agricultural value chains, such as production, storage, processing and packaging, transport, and marketing (FAO of the United Nations, 2018). All these are avenues for women to participate actively in socio-economic development.

This argument explains the reason why Gwata ward was highly related to higher household SES compared to other wards, since it is linked to Dar es Salaam, the major city. Another study conducted in the Morogoro Rural and Kilosa Districts showed that women in the area can engage in non-farm income generating activities such as farm laborers, making and selling mats, brewing and selling of local beers, selling buns, food crops marketing, running small shops in the localities and running small restaurants (Lyimo-Macha and Mdoe, 2002).

Trading and diversity of income generating activities is more likely to provide economic opportunities for women particularly in rural areas thus increase their earning since formal employments are rare. Likewise, based on the study done in Kilombero, Tanzania, report that engagement in income generation may be a route out of poverty among rural households; implying that rural residents can increase SES of their households (Msinde *et al.,* 2016). Therefore, improved road accessibility enhances participation of women in economic activities hence contribute to growth of household SES. Other studies have reported road accessibility to improve communities through increased awareness, recognition and access to poverty reduction opportunities (Kwigizile *et al.,* 2011). Economic opportunities include access to market, which are important for selling various products including agricultural produces. In line with these findings, it is suggested that much of the benefits from improved roads would benefit poor households (Jacoby, 2000). During FGD, a woman said;

> *"Although we are in need of money, we cannot transport our agricultural products to markets due to poor roads in our localities. Likewise, business people cannot come to our village to buy our products"* (FGDs, Fatuma, Ludewa village-Kinole ward, 01/01/2018).

Households with under five (5) years children were less likely to be in higher SES [OR 0.34 (95%CI 1.033-2.502), p< 0.05]. The finding that being with under five years children relates with less likelihood to attain higher SES was in line with other scholars (Blackden and Wodon, 2006; Kuhhirt and Ludwig, 2012). These authors argue that households with young children are associated with more care tasks that deny women time to engage in productive activities, in other words, they end up being victims of the motherhood wage penalty. This is likely to cause poor productivity hence poor household SES. According to Scholz and Seshadri (2007), having children can affect many microeconomic behaviors such as labour supply or expenditure decisions. Having under five children also suggests that it may be young households which have not yet accumulated assets.

Marital status and household headship were not related to household SES. This finding was not in congruence with what other studies reported. It was proposed that marriage was a source of financial security, particularly for women (Gallagher and Waite, 2000). Study findings also contradict with findings by Chant and Cawthorne (2008) that FHHs are poorer. A likely explanation of the finding is that results on marital status showed that 90% of respondents had entered marital union although during the study there were many respondents who were divorced, widowed or separated. It is only 10.3% of them who were never married. Since SES was measured by asset accumulation, there might be an illusion of household characteristics, as far as wealth accumulation is concerned, since there is a possibility to have included some assets that were purchased during existence of marriage. Based on this study, it is suggested to other interested scholars that in future studies, in order to establish the real economic situation of FHHs or MHHs, selection of respondents should include those who had never entered marital union so as to have a clear distinction between household categories.

The level of school education did not show significant association with household SES in the current study. Education being one of the demographic factors under contention by Pressman (2003), the finding from this study supported the hypothesis stating that women's socio-demographic characteristics in rural settings have no significant relationship with the rural household's SES. The finding was contrary to a number of previous scholarly reports that had shown that attaining education is correlated with attaining better household SES (UNESCO, 2000; Hofferth *et al.*, 2001; Javed *et al.*, 2008; World Bank, 2010; Awan *et al.*, 2011; World Bank, 2014). Despite the results being contradicting with some scholars, there are various arguments by other researchers supporting results from this study. Previous scholars have reported on the gap between education and SES particularly in agriculture. This gap is reported in various ways including lack of responsiveness of SES to education or non-return' gap of education attainment on improved SES through agriculture (Kurosaki, 2001; Kenn, 2016).

Explaining the gap between education and household SES, Kurosaki (2001) has reported that wages to the farm-workers, involving unskilled, manual work on the farm are not responsive to education attainment in relation to SES. Similarly, scholars have reported on the 'non-return' gap of education attainment on improved SES through agriculture. Studies in Africa and Asia report the absence of effect of basic education on the improvements in household SES (Kenn, 2016). An association between education and better SES has been reported when household bread earners have attained tertiary (vocational), competence-based education (Glewwe, 1991; Javed *et al.*, 2008; Kurosaki, 2009; Awan *et al.*, 2011; Himaz and Aturupane, 2011; Ogundari and Aromolaran, 2014). Based on the study conducted in Iran, it is suggested that education contributing to rural development must be practical, applied, problem-posing, and focused on functional specialization (Aref, 2011); which is not the case for respondents of this study.

Therefore, plausible explanation for lack of association between education and household SES in this study is based on the fact that, first, majority of respondents (56.4%) attained primary school education 40% had not attained formal education at all. As consequence, respondents had no skills that could make significant difference in production thus contribute significantly to improve SES of households. Second, the attained education did match with economic activities carried in study area. Such situation is known as qualification mismatch (Kenn, 2016). The author reports that mismatch have no positive impact on production hence SES. Likewise, based on the level of education of respondents, it was likely to have no positive impact on economic production due to lack of production skills. Qualification mismatch is reported to be most pronounced in the sub-Saharan African countries (Kenn, 2016). A study concerning qualification mismatch was conducted in Asia and the analysis is extended to other countries (Chua and Chun, 2015).

Almost all, 99.3% of respondents mainly depended on crop farming, mainly utilizing primitive tools such as hand hoes in farming. It was just a small proportion of respondents (23% in Gwata ward and 6% in Mkuyuni and Kinole ward) that was engaged in other economic activities such as casual labour in farming, trading and traditional domestic livestock keeping. However, these economic activities could not make distinction of SES. Therefore, in order to unleash women's potential for economic development as strategized in the Tanzania FYDP II 2016/17-2020/21, an emphasis should be put on practical skills. This includes attainment of tertiary and vocational education as well as equipping rural women with production skills through agricultural extension services consequently increases their productivity hence improving SES in households.

Household size had no association with SES. Several studies have reported ambiguities when relating household size and SES since trends vary depending on the methodology

used to test the relationship (Kamuzora and Mkanta, 2000; Mwisomba and Kiilu, 2002). For example, when SES is measured at per capita basis, larger households are more prone to lower household SES than smaller households (Kamuzora and Mkanta, 2000). However, on the other hand, a positive correlation between household SES and household size has been reported in Kilimanjaro region of Tanzania such that larger-sized households tended to be less poor than others (National Bureau of Statistics and Macro, 2011). It is argued that contrary to relations between household size and household SES are possible especially when there are many children dependents and elderly people in the family (URT, 1998).

Table 2.10: Socio-demographic factors associated with household SES

Variable	**β**	**S. E**	**aOR**	**P-Value**	**95% C. I**	
					Lower	**Upper**
Age of respondent (years)						
≤35						
>35	-0.201	0.21	1.26	0.028*	1.82	2.94
Marital status						
Never married						
Ever married	0.014	0.336	1.01	0.981	0.52	1.96
Education level						
Up to primary						
Se school or higher	-0.839	0.608	2.33	0.167	0.7	7.69
Ward of residence						
Kinole or Mkuyuni						
Gwata	-1.408	0.27	4.08	0.000**	2.4	6.94
HH with children aged <5 years*****						
Do not have						
Have	0.308	0.204	0.34	0.035*	1.033	2.502
HH with children aged ≥5 years						
Do not have						
Have	0.085	0.259	1.105	0.737	0.618	1.974
Sex of household head						
Male						
Female	0.038	0.21	0.97	0.876	0.64	1.47

			2			
Household size						
5 or less						
More than 5	0.264	0.20 8	0.75	0.188	0.49	1.15

* Significant at p<0.05; ** Significant at p<0.01; aOR = adjusted Odds Ratio; C.I. = Confidence Interval; **β** = Beta coefficient; S.E = Standard Error

2.5 Conclusions and Recommendations

This study provides data on the relationship between women socio-demographic factors and household's SES in rural settings. It tests the null hypothesis that socio-demographic factors have no relationship with household SES in rural settings. Binary logistic regression analyses revealed that being older than 35 years and living in an area that is easily accessible by road (Gwata ward) were associated with higher household SES (p<0.05) and p<0.01 respectively). Being with children under five years was associated with low likelihood to attain higher SES (p<0.05). Other variables such as marital status, level of education, sex of household head, having children above five years of age and household size had no significant association with household SES.

Contrarily to the Gender Poverty Gap theory, this study concludes that some socio-demographic factors particularly the age of a woman and road accessibility have positive relationship with household SES in rural areas such that being aged older than 35 years and living in easily accessible area increase the likelihood to belong to the household with higher SES. Therefore, the study recommends to the Government and non-Government development agencies to strengthen economic empowerment to young women particularly those aged 35 years and below in order to increase their ability to contribute to improving SES of their families. This can be achieved through training them on income generating activities, facilitating access to capital including local mobilization of production resources such as forming economic groups through which they can economically support each other or guarantee each other for support. This will increase

their participation to farm and off farm economic activities consequently increase contribution to improving SES of households of their residence.

Concerning road accessibility, the study recommends improving the roads by paving them and improving feeder roads hence accessibility, connectivity and transportation thus promote engagement of women to a diverse of farm and off-farm economic activities that can improve SES of households. The study concluded further that being with under five years children influence negatively household SES. Therefore, this study recommends that development partners should sensitize rural communities about gender shearing of responsibility such that male partners and other household members assist women to take care young children so that they (women) increase their participation in economic activities which eventually enhance their contribution to household SES.

2.6 References

Abraham, E. M. (2016). Determinants of household socio-economic status in an urban setting in Ghana. *Ghana Journal of Development Studies* 13: 97-114.

Aref, A. (2011). Perceived impact of education on poverty reduction in rural areas of Iran. *Life Science Journal* 8(2): 498-501.

Awan, M. S., Malik, N., Sarwar, H. and Waqas, M. (2011). Impact of education on poverty reduction.

Azzarri, C., Carletto, G., Davis, B. and Zezza, A. (2006) Monitoring poverty without consumption data: an application using the Albania panel survey. *Eastern European Economics* 44: 59-82.

Beaumont, R. (2012). An introduction to principal component analysis & factor analysis using SPSS 19 and R (psych package). *Factor Analysis and Principal Component Analysis (PCA)* 24(8-9).

Beidelman, T. O. (2017). *The Matrilineal Peoples of Eastern Tanzania (Zaramo, Luguru, Kaguru, Ngulu): East Central Africa Part XVI*. Routledge. [https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=matrilineal+in+morogoro&btnG] site visited on 14/07/2019.

Benesty, J., Chen, J., Huang, Y., and Cohen, I. (2009). Pearson correlation coefficient. In *Noise reduction in speech processing* (pp. 1-4). Springer, Berlin, Heidelberg.

Birdsall, N., Kelley, A. C., Sinding, S. W. and Sinding, S. (2001). Population matters: demographic change, economic growth, and poverty in the developing world. Oxford University Press, London.

Blackden, C. M. and Wodon, Q. (2006). Gender, time use, and poverty in sub-Saharan Africa (73 Edn) World Bank Working Paper No 73. Washington DC.

Bloom, D. E. and Finlay, J. E. (2009). Demographic change and economic growth in Asia. *Asian Economic Policy Review* 4: 45-64.

Bradley, R. H., and Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology* 53(1): 371-399.

Brown, D. L., and Hirschl, T. A. (2010). *Household Poverty in Rural and Metropolitan-Core Areas of the United States1*. *Rural Sociology* 60(1): 44–66.

Burgess, S., and CrP CHD Genetics Collaboration. (2013). Identifying the odds ratio estimated by a two-stage instrumental variable analysis with a logistic regression model. *Statistics in Medicine* 32(27): 4726-4747.

Cawthorne A (2008). The straight facts on women in poverty. *Centre for American Progress* 8: 1-3.

Chant S. (2012). Feminization of poverty. The Wiley and Blackwell Encyclopaedia of Globalization, London. 3pp.

Chant, S. (2004). Dangerous Equations? How Female Headed Households Became the Poorest of the Poor: Causes, Consequences and Cautions. *IDS Bulletin* 35: 19-26.

Chant, S. and Sweetman, C. (2012). Fixing women or fixing the world? 'Smart economics', efficiency approaches, and gender equality in development. *Gender and Development* 20: 517-529.

Chua, K., and Chun, N. (2015). In search of a better match: Qualification mismatches in developing Asia. *Unpublished*.

Collins M. (2003). Head-driven statistical models for natural language parsing. *Computational Linguistics* 29: 589-637.

Dao, M. Q. (2012). Population and economic growth in developing countries. *International Journal of Academic Research in Business and Social Sciences* 2: 6.

DeGraff, D. S. and Bilsborrow, R. E. (1993). Female-headed households and family welfare in rural Ecuador. *Journal of Population Economics* 6: 317-336.

Dingen R. (2000). A guide to integrated rural accessibility planning in Malawi. ILO/ASIST, Harare.

Ellis, A. (2007). *Gender and economic growth in Tanzania: Creating opportunities for women*. World Bank Publications. 140pp.

Ferreira, F. and Ravallion, M. (2009). Poverty and inequality: The global context. The Oxford Handbook of Economic Inequality, Oxford: Oxford University Press. 599-636pp.

Food and Agriculture Organization of the United Nations (2018). Ending Extreme Poverty in Rural Areas (2018) [http://www.fao.org/3/CA1908EN/ca1908en.pdf] site visited on 20/09/2020.

Food and Agriculture Organization of the United Nations (2020). Policy Support and Governance Gateway; Rural Poverty Reduction [http://www.fao.org/policy-support/policy-themes/rural-poverty-reduction/en/] site visited on 20/09/2020.

Gallagher, M. and Waite, L. (2000). *The Case for Marriage*. Random House. New York. 111-118pp.

Glewwe, P. (1991). Investigating the determinants of household welfare in Cote d'Ivoire. *Journal of Development Economics* 35: 307-337.

Himaz, R. and Aturupane, H. (2011). Education and household welfare in Sri Lanka from 1985 to 2006. Economics series working papers 527. Oxford.

Himaz, R. and Aturupane, H. (2011). Education and household welfare in Sri Lanka from 1985 to 2006. Economics series working papers, 527pp.

Hong, E. P., and Park, J. W. (2012). Sample size and statistical power calculation in genetic association studies. *Genomics and Informatics* 10(2): 117.

Hofferth, S. L., Reid, L. and Mott, F. L. (2001). The effects of early childbearing on schooling over time. Family planning perspectives. pp 259-267.

Huff, C. and Tingley, D. (2015). Who are these people? Evaluating the demographic characteristics and political preferences of MTurk survey respondents. *Research and Politics* 2: 2053168015604648.

IBM Knowledge Centre (2019). Factor Analysis Scores [https://www.ibm.com/support/knowledgecenter/en/SSLVMB_24.0.0/spss/base/idh_fact_sco.html#idh_fact_sco] site visited on 20/11/2019.

Jacoby, H. G. (2000). Access to Markets and the Benefits of Rural Roads. The Economic Journal, 110(465), 713–737.

Javed, Z. H., Khilji, B. A. and Mujahid, M. (2008). Impact of education on socio-economic status of villagers' life: A case study of Shrien Wala village of Faisalabad district. Pakistan Economic and Social Review. pp133-146.

Jeckoniah, J. N., Nombo, C. N. and Mdoe, N. S. Y. (2014). Socio-economic status and women empowerment in rural Tanzania: a case of onion value-chain in Simanjiro district. *Tanzania Journal of Development Studies* 14 (1 and 2): 65-76.

Jogwu, C. O. (2010). Adult illiteracy: The root of African underdevelopment. *Education* 130: 490-499.

Kabeer, N. (1988). *Subordination and struggle: Women in Bangladesh*. New Left Review, 95pp.

Kabeer, N. (2003). Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A handbook for policy-makers and other stakeholders. Commonwealth Secretariat.

Kabeer, N. (2003c). *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals:* A handbook for policy-makers and other stakeholders Commonwealth Secretariat. International Development Centre, 201pp.

Kabeer, N. (2015). Gender, poverty, and inequality: a brief history of feminist contributions in the field of international development. *Gender and Development* 23: 189-205.

Kaiser, H. F. (1991). Coefficient alpha for a principal component and the Kaiser-Guttman rule. *Psychological Reports* 68(3): 855-858.

Kamuzora, C. L. and Mkanta, W. (2000). Poverty and household/family size in Tanzania: multiple responses to population pressure? Research on Poverty Alleviation, Report no 004.

Kamuzora, C. L. and Mkanta, W., (2000). Poverty and household/family size in Tanzania: multiple responses to population pressure? [https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/ 1794/ 00.4_Research_Report_004.pdf?sequence=1] sited on 12/7/2018.

Kapunda, S. M. (2018). Gender inequality, poverty and food insecurity in Tanzania. Gender, family and work in Tanzania. Routledge, pp220-236.

Kehler J. (2013). Women and poverty: the South African experience. *Journal of International Women's Studies* 3: 41-53.

Kenn, G. C. (2016). Education, Skills, and Decent Work in Low and Middle Income countries: Trends and Results from an Adult Skills Survey. *Education for people and planet: creating sustainable futures for all*.

Kolenikov, S. and Angeles, G. (2009). Socioeconomic status measurement with discrete proxy variables: Is principal component analysis a reliable answer? *Review of Income and Wealth* 55: 128-165.

Kothari, C. R. (2004). *Research Methodology: Methods and Techniques*. New Age International, Delhi, 401pp.

Krueger, D. C., Mellat Parast, M. and Adams, S. (2014). Six Sigma implementation: a qualitative case study using grounded theory. *Production Planning and Control* 25: 873-889.

Kuhhirt, M. and Ludwig, V. (2012). Domestic work and the wage penalty for motherhood in West Germany. *Journal of Marriage and Family* 74: 186-200.

Kurosaki, T. (2009). Vulnerability in Pakistan, 2001-2004. Background paper for the Pakistan Poverty Assessment Project, World Bank, Washington DC, 55pp.

Kurosaki, T. (2009). Vulnerability in Pakistan, 2001-2004. Background paper for the Pakistan Poverty Assessment Project, the World Bank.

Kwigizile, E., Chilongola, J. and Msuya J. (2011). The impact of road accessibility of rural villages on recognition of poverty reduction opportunities. *African Journal of Marketing Management* 3: 22-31.

Laerd, S. (2015). Principal components analysis (PCA) using SPSS Statistics [https://statistics.laerd.com/spss-tutorials/principal-components-analysis-pca-using-spss-statistics.php] site visited on 19/11/2019.

Lamont, M. and Small, M. L. (2006). How culture matters for poverty: Thickening our understanding. David Harris and Ann Lin (eds.). The Colours of Poverty New York: Russell Sage Foundation.

Lanjouw, P., Quizon, J. and Sparrow, R. (2001). Non-agricultural earnings in peri-urban areas of Tanzania: evidence from household survey data. *Food Policy* 26: 385-403.

Leavens, M. K. (2011). Gender and agriculture in Tanzania. Evans School Policy Analysis and Research (EPAR) Brief No. 134, University of Washington, Seattle.

Lee, R. (2003). The demographic transition: three centuries of fundamental change. *Journal of Economic Perspectives* 17: 167-190.

Lesetedi, G. N. (2018). A Theoretical Perspective on Women and Poverty in Botswana. *Journal of International Women's Studies* 19: 193-208.

Loewen, S., and Gonulal, T. (2015). Exploratory factor analysis and principal components analysis. In: *Advancing quantitative methods in second language research*. Routledge. pp. 182-212.

Lusambo, L. P. (2016). Households' income poverty and inequalities in Tanzania: analysis of empirical evidence of methodological challenges. *Journal of Ecosystem and Ecography* 2016: 1-6.

Lyatuu, P. M. and Urassa, J. K. (2014). Land Access and Associated Factors in Densely and Sparsely Populated Areas: Mvomero District, Tanzania.

Lyimo-Macha J. and Mdoe N. (2002). Gender and rural poverty in Tanzania: Case of selected villages in Morogoro rural and Kilosa districts. LADDER Working Paper No.18. Morogoro.

Magombeyi, M. T. and Odhiambo, N. M. (2017). Foreign direct investment and poverty reduction. *Comparative Economic Research* 20: 73-89.

Magombeyi, M. T., Odhiambo, N. M. (2019). Poverty alleviation policies in Tanzania: Progress and challenges. *Euro Economica* 38(1).

Milazzo, A. and Van de Walle, D. (2015). Women left behind? Poverty and headship in Africa. The World Bank.

Mohajan, H. K. (2017). Two criteria for good measurements in research: Validity and reliability. *Annals of Spiru Haret University. Economic Series*, *17*(4), 59-82

Msinde, J., Urassa, J. K. and Nathan, I. (2016). Off-farm employment and income poverty in favourable agro-climatic areas of Tanzania: Evidence from Kilombero Valley [http://www.suaire.suanet.ac.tz:8080/xmlui/handle/_123456789/2094] site visited on 17/12/2019.

Mtega W. P. (2012). Access to and usage of information among rural communities: A case study of Kilosa District Morogoro Region in Tanzania. *Partnership: The Canadian Journal of Library and Information Practice and Research* 7(1).

Mu, Ren and Dominique van de Walle (2007). Rural roads and poor area development in Vietnam. World Bank Policy Research Working Paper 4340, August.

Mushi, V. A., and Mwakasangula, E. (2008). *Strategies to Enhance Girls' Enrolment and Participation in Secondary Education: A Case of Morogoro Municipality in Tanzania*. Mzumbe University.

Mwisomba, S. T. and Kiilu, B. H. R. (2002). Demographic factors, household composition, employment and household welfare. AfricaPortal.

National Bureau of Statistics (NBS) (Tanzania) and ICF Macro, 2011. Tanzania Demographic and Health Survey 2010. Dar es Salaam, Tanzania: NBS and ICF Macro

NBS, (2017). Women and Men in Tanzania Facts and Figures 2017 [https://www.nbs.go.tz/nbs/takwimu/WomenAndMen/women_and_men_booklet.pdf] sited on 17/12/2019.

Ogundari, K. and Aromolaran, A. B. (2014). Impact of education on household welfare in Nigeria. *International Economic Journal* 28: 345-364.

Palacios-Lopez, A. and Lopez, R. (2014). Gender differences in agricultural productivity: the role of market imperfections. Department of Agricultural and Resource Economics, the University of Maryland. Baltimore.

Pallant, J., and Manual, S. S. (2010). A step by step guide to data analysis using SPSS. *Berkshire UK: McGraw-Hill Education*.

Pawasutipaisit, A. and Townsend, R. M. (2011). Wealth accumulation and factors accounting for success. *Journal of Econometrics* 161: 56-81.

Pomfret, J. (2006). Chinese lessons: Five classmates and the story of the new China. Macmillan, London. 570pp.

Pressman, S. (2002). Explaining the gender poverty gap in developed and transitional economies. *Journal of Economic Issues* 36: 17-40.

Pressman, S. (2003) Feminist explanations for the feminization of poverty. *Journal of Economic Issues* 37: 353-361.

Purdie, D. M., Dunne, M. P., Boyle, F. M., Cook, M. D. and Najman, J. M. (2002). Health and demographic characteristics of respondents in an Australian national sexuality survey: comparison with population norms. *Journal of Epidemiology and Community Health* 56: 748-753.

Rehema, M., Verhan, B., Emmanuel, M., and Douglas, M. (2014). Effects of initiation rituals to primary and secondary school girls in Morogoro rural district. *International Journal of Innovation and Scientific Research* 6(1): 9-17.

Ryan R. M., Fauth, R. C. and Brooks-Gunn, J. (2006). *Childhood Poverty: Implications for School Readiness and Early Childhood Education*. American Psychological Association. 750 First Street NE, Washington, DC, pp 223-346.

Sahn, D. E. and Stifel, D. C. (2003). Urban–rural inequality in living standards in Africa. *Journal of African Economies* 12: 564-597.

Schmidt, L. and Sevak, P. (2006). Gender, marriage, and asset accumulation in the United States. *Feminist Economics* 12: 139-166

Scholz, J. K., and Seshadri, A. (2007). Children and household wealth. Michigan Retirement Research Centre Research Paper No. WP, 158pp.

Semali, L. M. (2016).Women in development mobilize grassroots enterprises to reduce household poverty. *International Journal of Civic Engagement and Social Change (IJCESC)* 3: 28-49.

Tabutin, D., Schoumaker, B. and Rabenoro, M. (2004). The Demography of Sub-Saharan Africa from the 1950s to the 2000s. *Population* 59: 455-555.

Tijdens, K. G. (2002). Gender roles and labour use strategies: Women's part-time work in the European Union. *Feminist Economics* 8: 71-99.

Tillmar, M. (2016). Gendering of commercial justice–experience of self-employed women in urban Tanzania. *Journal of Enterprising Communities: People and Places in the Global Economy* 10: 101-122.

UNESCO (2000a). Focusing Resources on Effective School Health: a FRESH start to enhancing the quality and equity of education. World Bank. Washington DC, USA.

UNESCO P. (2000b). The Dakar Framework for Action: Education for All: Meeting Our Collective Commitments: Including Six Regional Frameworks for Action. UNESCO, Washington DC, USA.

URT (1998). The National Poverty Eradication Strategy. United Republic of Tanzania, Vice-President's Office, Dar es Salaam.

URT (2015). Tanzania Livestock Modernization Initiative [https://livestocklivelihood sandhealth.org/wp-content/uploads/2015/07/Tanzania_Livestock_ Modernization_Initiative_July_2015.pdf] site visited on 10/10/2020.

URT (2016). National Five-Year Development Plan 2016/17-2020/21. Ministry of Finance and Planning. Dar es Salaam, Tanzania. Pp 293.

URT (2018a). The Economic Survey 2017. Ministry of Finance and Planning. Dodoma, Tanzania. pp 223.

URT (2018b). Women and Men: Facts and Figures. National Bureau of Statistics. Dar es Salaam, Tanzania. pp 62.

URT (2019). Education Sector Performance Report (2018/2019) [https://www.globalpartnership.org/sites/default/files/document/file/2020-05-Tanzania%20Mainland-ESP-IR_0.pdf] site visited on 06/09/2020.

URT (2019a). Household Budget Survey 2017-18: Key indicators Report. 2019a. Dodoma, Tanzania, National Bureau of Statistics and Ministry of Finance and Planning.

URT (2019b). Tanzania in Figures 2018. National Bureau of Statistics. Dodoma, Tanzania.

Van der Lippe, T. (2001). The effect of individual and institutional constraints on hours of paid work of women. Women's employment in a comparative perspective. New York: Aldine de Gruyter. S. pp221-243.

Velicer, W. F., Eaton, C. A., and Fava, J. L. (2000). Construct explication through factor or component analysis: A review and evaluation of alternative procedures for determining the number of factors or components. *Problems and solutions in human assessment*, 41-71.

Vyas, S. and Kumaranayake, L. (2006). Constructing socio-economic status indices: how to use principal components analysis. *Health Policy and Planning* 21: 459-468.

Williamson, J. G. (2001). Demographic change, economic growth, and inequality. Population Matters: Demographic Change, Economic Growth, and Poverty in the Developing World. pp 106-136.

World Bank (2010). Gender and Economic Growth in Tanzania: Creating Opportunities for Women. Washington DC, USA: The International Bank for Reconstruction and Development. The World Bank

World Bank (2014). Tanzania - Big Results Now in Education Program Project. World Bank Group. Washington, DC, USA.

World Bank Group (2016). World development report 2016: digital dividends. World Bank Publications, Washington, DC, USA.

Xhafaraj, E. (2013). The Principal Component Analysis and Cluster Analysis as a Tool for the Estimation of Poverty, Albanian Case Study.

Angstrom, I. (2002). Women, wives and land rights in Africa: Situating gender beyond the household in the debate over land policy and changing tenure systems. *Oxford Development Studies* 30: 21-40.

CHAPTER THREE

The Relationship between Women's Reproductive Factors and Household Socio-economic Status in Morogoro District, Tanzania

Edith Kwigizile[1], Michael J. Mahande[2] and John Msuya[3]

[1]Department of Development Studies, College of Social Sciences and Humanities, Sokoine University of Agriculture, Morogoro, Tanzania.

[2]Department of Epidemiology and Biostatistics, Kilimanjaro Christian Medical University College, Moshi, Tanzania

[3]Department of Food Technology, Nutrition and Consumer Sciences, Sokoine University of Agriculture, Morogoro, Tanzania

Email of correspondences: edithkwigizile@yahoo.co.uk

Publication status: Published: *Journal of African Studies and Development*, *12*(2), 52-60.

Proceedings of SUA Scientific Conference (April, 2019); 450-463pp.

3.1 Abstract

Households in Tanzanian rural areas are characterized by poor socio-economic status. It is known that women play an important role in household economy. However, the relationship between women's reproductive factors and SES of households in rural populations of Tanzania irrespective of sex of household head, are not clearly reported. This study aimed at examining the associations that exist between selected reproductive factors and household SES among households consisting of women of reproductive age in a rural setting. Six villages were selected randomly from three wards in Morogoro District, Tanzania, whereby a total of 542 respondents consisting of women from male

and female-headed households their questionnaires qualified for analysis. Data analyses were performed using Statistical Package for Social Sciences computer software. While Principal Component Analysis (PCA) was used to generate household's SES, binary logistic regression model was used to estimate relationship of study variables. The number of children a woman wished to have had negative association with SES ($p<0.05$) whereby wishing to have more than 5 children was associated with less likelihood to attain higher (medium to high) SES. The mean age at first pregnancy was 18.5 years with 56.5% of respondents becoming pregnant for the first time at ≤ 18 years. The age at first pregnancy had significant positive association with SES whereby being pregnant at the age of more than 19 years increases the chance of attaining better (Medium-High) SES ($p<0.05$) compared with those conceiving at 18 years or younger. This concludes that women's desire for relatively many children (more than 5) and early pregnancies (18 years or less) do constrain attainment of better SES. Findings emphasize the need for promoting reproductive health education particularly family planning and advocacy against early pregnancies to rural communities to improve household SES.

Key words: Women, household SES, reproductive factors

3.2 Introduction

Worldwide, the roles performed by women remains a concern for development actors (World Bank, 2010; MoHCDGEC, 2015). Women perform multiple roles in the communities that include productive, reproductive and community management (World Bank, 2010; McFerson, 2010; National Bureau of Statistics and Macro, 2011; MoHCDGEC and MoH, 2015). Reproductive role constitutes a set of activities related to the creation and sustaining the family or household (Komatsu *et al.,* 2015). It includes not only biological reproduction but also physical roles such as care and maintenance of

family members (Bibler and Zuckerman, 2013). Maintaining a family is related to a variety of activities that include preparation of meals, laundry, cleaning, household maintenance, personal care and domestic work such as fetching water and firewood, caring for children or adults and shopping (Komatsu *et al.,* 2015). Reproductive responsibilities performed by women overlap with economically productive years (Boudet *et al.,* 2018), hence becoming important in socio-economic development. This challenge is more in developing countries where early involvement in reproductive matters such as early pregnancy and childbearing are widespread (Greene and Merrick, 2008). The reproductive matters appear to be facing the same challenges in Tanzania (National Bureau of Statistics and Macro, 2011; URT, 2019).

Reproductive factors such as early childbearing, maternal mortality/morbidity, and unintended/untimely pregnancy, have negative effects on overall health of women (Gribble and Haffey, 2008). In addition, these factors can affect education and household well-being (Greene and Merrick, 2008; Bradshaw *et al.,* 2013). Timing for pregnancy and childbearing is also important in socio-economic development since it interferes with economic activities of an individual. According to the 2010 Tanzania Demographic and Health Survey, teenage pregnancy is a major health concern since it is associated with higher morbidity and mortality for both the mother and child (National Bureau of Statistics and Macro, 2011; URT, 2019). However, reproductive factors such as fertility is related with a number of factors, that include the age at first marriage, perceived ideal number of children, place of residence, literacy status, religion, mass media exposure, use of family planning, household headship, and experience of child death (Adhikari, 2010).

Poor reproductive health outcomes such as early childbearing, maternal mortality/morbidity, and unintended/untimely pregnancy have negative effects on overall

health of a woman (Gribble and Haffey, 2008; Bradshaw *et al.,* 2013) and, under certain circumstances, on education and household well-being (Greene and Merrick (2008). Literature shows that women continued inability to control their own fertility means that childbirth limits their ability to engage in productive activities (Bradshaw *et al.,* 2013). Most of the available literature relates reproductive factors and women's poor SES (Pressman, 2002; Ellis and Mdoe, 2003; Gould and Ojanen, 2003; Chant, 2003; Pressman, 2003; Demombynes and Hoogeveen, 2004; Budlender, 2005; Chant, 2006; Katapa, 2006; Blackden and Wodon, 2006c; Cawthorne, 2008a; Ferreira and Ravallion, 2009; Atkinson and Lugo, 2010; Leavens, 2011). Nevertheless, other reports show that the factors affecting women have effect on household where a woman lives (Ellis, 2007; De Weerdt, 2010; Chant, 2012; FAO, 2014).

It has been noted from previous researchers that fertility and poverty are positively related such that fertility increases the probability of being poor (Mussa, 2014). Reports show that Total Fertility Rate (TFR) in Tanzania has remained relatively high at 5.4 children per woman in the 15-49 childbearing age group. The TFR was 6.1 in rural areas compared to 3.7 in urban areas (URT, 2016). The TFR in Tanzania is higher than in other countries in the region such as Kenya and Rwanda (4.6), as well as in other sub-Saharan African countries (URT, 2016). Literature has related these factors and socio-economic development of women (Cawthone, 2008; Gribble and Haffey, 2008), however, the effect of such factors is not limited to women and their households only, they can affect any household where a woman lives (Ellis, 2007; Ferreira and Ravallion, 2009; De Weerdt, 2010; Chant, 2012; FAO, 2014). Hence, it is important to understand how reproductive factors relate to poor SES.

Education has strong influence on fertility whereby low level of education for women account for high fertility rate especially in rural area (Levine *et al.,* 2001; Adhikari, 2010;

URT, 2016). High fertility may slow efforts of improving SES. At the household level, large number of children limits capacity to reduce poverty. Fertility can be reduced by empowering women through education and employment support, as well as with family planning services (World Bank Group, 2015). Fertility control is one of the key factors affecting women's career development and labour productivity (Rwebangira, 1996).

Despite taking reproductive responsibilities with all the related challenges around, women remain key players in socio-economic development particularly in rural areas. Women play an important role in Tanzania's economy for being more active in agriculture, which accounts for 82% of the labour force (Leavens, 2011; FAO, 2014; MoHCDGEC, 2015). In the agriculture sector, women constitute majority (52-54% versus 48% for men) of the labour force (Leavens and Anderson, 2011). In other sectors of production, also, in 'petty' trade, they constitute 55% versus 45% (FAO, 2014; MoHCDGEC, 2015). In general, the overall labour force participation rate (including the informal sector) of women is at 80.7%, which is higher than that of men (79.6 %) (URT, 2002; 2019). Therefore, the participation of women in socio economic development is quite substantial and important.

Regardless of women's higher contribution to the labour force in economic productions, they are associated with poor SES (Chant, 2012; Bradshaw *et al.,* 2019). Literature shows that women are related to poor SES because of low levels of education (URT, 1998; UNESCO, 2000; Awan *et al.*, 2011; URT, 2018), headship of households (Kabeer, 2003; Chant, 2004; Leavens, 2011) and requirement to perform multiple roles (Moser, 2012; MoHCDGEC and MoH, 2015; MoFP-PED and NBS, 2019). Performing multiple roles, mainly non-productive roles, by women is related to poor household SES through deprivation of time for participation in economic activities (Kes and Swaminathan, 2006a; Blackden and Wodon, 2006; Antonopoulos, 2008; Ferrant *et al.,* 2014). Therefore, factors

that constrain women's productivity are likely to affect the economic growth not only to women as individuals, but also as a household, community and nation as a whole.

The Government of Tanzania and other development agencies have made effort to remove women's constraints however some areas still need interventions. For example, the Government of Tanzania has achieved some progress with regard to counteracting women's economic barriers but acknowledges that some drawbacks still persist. This is reflected in women's productivity whereby their production is low. For example, the yields per hectare in agriculture are still lower on land worked primarily by women compared with that worked by men (URT, 2016; URT, 2018a). It is high time to address issues constraining women productivity that consequently retard their contribution improving SES of their households (URT, 2016; URT, 2018b).

The socio-economic status of majority of households in Tanzania especially in rural areas are is low. According to the 2015/16 National Household Survey, 80% of the rural population is in the three lowest wealth quintiles compared to 12% households of the urban (URT, 2018a). This implies that only few households of the rural community (20%) are in the two higher quintiles. Based on head count ration, 55% of households in Morogoro rural are poor (Lusambo, 2016). Enabling conditions for full engagement of productive workforce in agricultural production and other production segments, especially women, will have greatly addressed the challenges of poverty in households. Therefore, considering the importance of women in Tanzania's economy, especially agriculture (Leavens and Anderson, 2011), it is impossible to realize significant socio-economic growth without considering women's contribution in the national development strategies through unlocking barriers to their participation in economic production.

It is reported that involvement in reproductive activities affect women's SES (Pressman, 2003; Blackden and Wodon, 2006; Cawthorne, 2008), but specific factors that relate with SES of households containing women in rural areas of Tanzania are not clearly known. Scant literature exists to explain how reproductive factors that include a number of children per woman, age at first pregnancy, unplanned pregnancies and birth interval relate to SES of households containing woman despite of the sex of the household head in rural households. Data exist in general terms that parenthood affects women's productivity (Pressman, 2003). Therefore, it is from this point of view, this study intended to examine the relationship between selected women reproductive factors and SES in Morogoro District, Tanzania. Specifically, the study intended to (i) determine the association between the number of children per woman and SES, (ii) analyze the link between the age at first pregnancy and SES, (iii) assess the occurrence of unplanned pregnancies in the study area and (iv) examine the relationship between the birth interval and SES.

The importance of this study emanated from the fact that participation of women in socio economic development is inevitable if higher SES is to be attained since they provide more than a half of the work force particularly in agriculture (Leavens, 2011; Palacios-Lopez *et al.,* 2015). This means that their contribution on economic development is important in order to realize positive change in development not only in their households but also in the whole community. Moreover, the government of Tanzania intends to improve SES of its people as demonstrated in the development plans formulated that include the framework of the second national FYDP 2016/2017-2020/2021). The plan states clearly that interventions to ensure gender balance are needed to unleash women's potentials to contribute to the envisaged social economic transformation; and more importantly as a matter of human rights (URT, 2016). Hence, findings from this study

provide valuable information concerning the reproductive factors in relation to SES in rural context. The study enable the government agencies and other development partners such as Non-Governmental Organizations (NGOs) and Community Based Organizations (CBOs) to design well-informed interventions for improving living standards of rural residents. Above all, ending all forms of poverty with consideration of different social groups is one of the sustainable global development agenda (Sachs, 2012); and economic transformation is the main theme of development in Tanzania (URT, 2016). Based on this, the study provides scientific evidence for the government to ensure existence of policies that enhance contribution of women to socio-economic development.

This study is based on explanation for the feminization of poverty theory which argues that participation of women in reproductive responsibilities affect women's SES since the responsibilities take away the time that women could spend for productive work. The study intended to explore the associations that exist between selected reproductive factors and household SES among households consisting of women of reproductive age in a rural area hence identify specific reproductive factors that relate with SES of households in rural areas where poor SES is persistent. Based on the guiding theory, the study hypothesized (null hypothesis) that in Morogoro district, women's reproductive factors are not associated with the corresponding household's SES.

3.3 Methodology

3.3.1 Description of the study area

The study was conducted in Morogoro District because of the high prevalence of poverty in the area. Based on head count measure, 55% of households in Morogoro District are considered as poor (Lusambo, 2016). This is supported by the national data that 80% of the rural population fall in the three lowest wealth quintiles (URT, 2019). In addition, the district was selected to represent rural areas because of the existing data that fertility is

higher in rural areas compared to urban area (URT, 2018). This indicates existence of potential reproductive issues in rural areas. Six villages were selected randomly from three wards and included in the study. The villages and respective wards were Kinonko and Maseyu villages from Gwata ward; Madamu and Kibwaya villages from Mkuyuni ward as well as Tandai and Ludewa villages from Kinole ward.

3.3.2 Study design

This was a cross sectional study design meaning that data were collected once in the study area (Bryman and Bell, 2015). This design was suitable since it can usually be conducted to estimate the prevalence of the outcome of interest for a given population and provide description of a population or a subgroup within the population with respect to an outcome (Levin, 2006). The design was therefore considered suitable because it provides quality data, it is convenient, cost effective and it takes little time (Kothari, 2004).

3.3.3 Estimation of sample size

Estimation of the minimum required sample size was important to make sure that the sample size used is within the recommended sample size for statistical analysis. Hence, the minimum sample size was calculated by considering the standard normal deviation set at 95% confidence level (1.96) and 55% as the estimated prevalence of poverty in the study population (Cochran,1963); and using the formula: $n = z^2 ((p)(1-p))/e^2$; where ‘z’ = 1.96 for 95% CI, ‘p’ is expected true proportion (55%) and ‘e’ is the desired precision (0.05), the minimum sample size was estimated to be 380 respondents to achieve the desired statistical power. However, in order to increase statistical power and precision, 65% of the calculated minimum sample was added to the minimum sample, hence 627 women were included in the study (Tanaka, 1987). The more the data the more the information hence the estimate is more precise. As the sample size increases, the confidence in estimate increases, uncertainty decreases hence greater precision is attained

(Hong and Park, 2012). In addition, this takes care dropped questionnaires in data cleaning process.

3.3.4 Study population and sampling procedure

The study population was women of reproductive age. The reproductive age was adopted from the Tanzania Demographic and Health Survey 2010; that is between 15 and 49 years (National Bureau of Statistics and Macro, 2011). In addition, women should have at least two children. The chosen number of children was important because the study intended to compute among other things, the birth interval as one of the study variables. To get respondents, in consultation with village leaders, women with required characteristics were selected among registered residents in the study villages and used to form a sampling frame. From the sampling frame, 627 women were sampled. While women heads of households were purposively selected all of them to be included in the study because they are few, women from MHHs were selected randomly to obtain the desired number. After data cleaning, 542 respondents qualify for analysis (219 women heads of households and 323 women from MHHs. The unit of analysis was households in which respondents were coming from.

3.3.5 Inclusion and exclusion criteria

Four characteristics namely age, area of residence and number of children were set as entry criteria for study participants. The study included women of reproductive age (15-49 years old) residing in the study area (rural area), who had at least two children. Only women registered in study village register were considered to ensure that only residents were included. Women were liable to exclusion if had less than two children or if did not consent to participate in the study.

3.3.6 Principal components analysis tests for suitability

This study used principal component analysis (PCA) to form socio-economic groups as previously used by other scholars (Vyas and Kumaranayake, 2006; National Bureau of Statistics and Macro, 2011; Jeckoniah *et al.,* 2014). Important tests for suitability were conducted to ascertain the method. The sample size of this study was 542 women representing 542 households whereby the sample size of 150 cases is recommended for using PCA (Laerd, 2015). The tests for variables showed that Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.688. According to IBM Knowledge Centre (2019), it is recommended that high values of KMO (close to 1.0) are preferable, and the results of the factor analysis may not be suitable if the value is less than 0.50. Factors with eigenvalues equal or greater than 1 were retained. Battlett's test of sphericity was used to test the level of correlation in the sample. According to Beaumont (2012) and Xhafaraj (2013), the correlation should not be above 0.3. The correlation in this study was 0.011.

3.3.7 Definition of study variables

3.3.7.1 Outcome variables

The dependent variable for this study was household SES (wealth index) computed from housing characteristics and asset possession using the PCA. Household characteristics that are ownership of the house, material used to build the house and the toilet facility were also used to determine the outcome variable (household SES) as previously described (National Bureau of Statistics and Macro, 2011). Another indicator was possession of any of the following assets: motorbike, radio, bicycle, generator and solar power equipment as recommended by other studies (Filmer and Pritchett, 2001; Sahn and Stifel, 2003; Rutstein and Johnson, 2004; Azzarri *et al.,* 2006). PCA was used to generate wealth scores and the scores were then classified using cluster analysis as described in previous studies (Vyas and Kumaranayake, 2006).

Cluster analysis attempts to group the most similar cases in one group while maximizing difference between groups. By using this technique, it was possible to create the dependent variable (household SES) by categorizing wealth scores. Five (5) even wealth quintiles were generated, the quintiles were further classified into two categories of household SES as Low (1st and 2nd quintiles) and Middle-High (3rd- 5th quintile) as recommended by others (Azzarri *et al.,* 2006; Kolenikov and Angeles, 2009). The information concerning household assets was obtained from the sampled women.

3.3.7.2 Explanatory variables and their definitions

The explanatory variables were the selected reproductive parameters. They included number of biological children of the study respondents, birth interval, and number of unplanned pregnancies a participant had experienced as well as the age when a participant conceived for the first time. For this study, birth interval refers to the interval between the last two consecutive live births (Koenig *et al.,* 1990; National Bureau of Statistics and Macro, 2011). On the other hand, unplanned or unintended pregnancies are terms used interchangeably which refer to pregnancies that are reported to have been either unwanted (i.e., they occurred when no more children were desired) or mistimed i.e. they occurred earlier or later than desired (Santelli *et al.,* 2003). The sampled women provided individual data about the number of their biological children, birth interval, and the number of unplanned pregnancies they had experienced as well as the age when they conceived for the first time.

3.3.8 Data collection tool and pre-testing the questionnaire

Data on all study respondents were obtained using a structured questionnaire (Appendix 1). Validity and reliability of the questionnaire were determined by pre-testing it on ten

respondents before the actual study and these respondents were excluded during actual data collection and analysis. SPSS tests correlation between each question in the questionnaire (Mohajan, 2017). If Significance <0.05, the question/instrument is valid. If Significance >0.05, the question/instrument is not valid hence it is deleted/removed. This method was previously used by other scholars (Collins, 2003; Azzarri *et al.*, 2006). Correlation of study questions was 0.03. This method was previously used by other scholars (Azzarri *et al.*, 2006; Collins, 2003). After the pre-test, necessary adjustments were made in the phrasing of some questions. The questionnaire was organized into three sections to enable capturing information about reproductive factors and household SES as well as demographic factors important for description of the study population and control variables for the relationship between reproductive factors and SES. Focus group guide questions were used to collect qualitative data though FGDs. The focus group discussion guide (Appendix 2) was designed to capture information about issues that either needed supplementary explanation or that were not familiar to normal respondents. Such issues included reasons for low level of education among women, instability of marriages, teenage pregnancies and occurrence of unplanned pregnancies among women in the study area.

3.3.9 Data collection and methods

Different methods were employed in collecting data concerning the study respondents and the corresponding households. Interviews and FGDs were used to collect data. Structured questionnaire was used to collect primary data about socio-demographics of respondents (age, education, marital status, household size and household composition). Quantitative data were also collected about reproductive factors i.e. number of children, birth interval, unplanned pregnancy and age at first pregnancy. In addition, data were collected about housing characteristics, toilet facility and assets owned by the household that were used to construct household SES.

Interviews were conducted at respondent's residents in order to allow observing some issues like household assets. FGDs were used to collect qualitative data to supplement quantitative data. A total of the twenty-one (21) women constituted three FG each with 6-8 women. The criteria for selecting participants of FGDs were to be a woman who had ever been a leader of women's groups or held any other leadership position in study community. This aimed at involving participants with ample information about study issues. Discussions were conducted to saturation when no new opinions were coming up (Walker, 2012). This took about 1.30 hours.

3.3.10 Statistical and qualitative data analysis

3.3.10.1 Quantitative data

After data entry, data cleaning was done. Data were compiled and analyzed using SPSS v22.0 software (IBM SPSS Inc., Armonk, NY, USA). Continuous data was analyzed and presented as measures of central tendency (means and/or medians with SD and inter quartile range (IQR), frequencies and percentages. Descriptive data of categorical variables was presented in the form of numbers and percentages. Binary logistic regression model was applied to perform multivariable analyses in order to test associations and the effect of each explanatory (independent) variable on the outcome variable after accounting for the effect of other explanatory variables. Demographic factors that were assumed to affect the association between reproductive factors and household SES were used as control variables in the analysis model. These are age, marital status, education and ward of residence of respondent. Others were age of children, sex of household head and the number of household members. Odds ratios (ORs) with 95% Confidence Interval (95%CI) for reproductive factors associated with household SES were estimated. A p-value of <0.05 was considered to be the cut-off for statistical significance. In logistic regression, the odds ratio (OR) is a measure of association between an explanatory and an outcome variable. It represents the constant

effect of a predictor X on the likelihood that one outcome will occur. For instance, an OR of 1.2 means there is a 20% increase in the odds of an outcome with a given explanatory variable (Burgess and CrP CHD Genetics Collaboration, 2013).

3.3.10.2 Qualitative data

Based on recommendation by Renner and Taylor-Powell (2003), content analysis procedure was used to analyze qualitative data. Field notes were reviewed and data were categorized based on guiding questions. Themes were outlined based on categories to indicate different opinions about research issues. Important points were illustrated by quotes.

3.4 Results and Discussion

3.4.1 Socio-demographic characteristics

Demographic and household characteristics of the respondents are shown in Table 3.1.

The findings showed that the age range of participants was between 18 and 49 years, with a mean age of 33.6 (SD= 7.9) years. The category of between 25 and 35 years formed majority (50.7%) of respondents. This implies that most of the women of the study community bear children within this age range. About a third (29.2%) was widowed, separated or divorced. Through FGDs, divorce and separation of couples were attributed with gender-based violence, early marriage, and poverty. One participant of the FGDs had the following to say;

> *"Some youths get married at young age, while are already in marriage, they realise that there is a lot of responsibilities to raise a family, thus particularly for male partners, they start to behave in unbecoming manner towards their spouses, which result to breakage of marriages"* (FGDs, Maua, Maseyu village-Gwata ward, 30/12/2017).

In this study, 40.6% of women had not attained formal education. This proportion shows a considerable rate of illiteracy among women in the study area. The observed illiteracy rate was high compared to the average national illiteracy rate of 22% and 18% in 2010 and in

2012, respectively whereby 42% of women had no formal education in Tabora (National Bureau of Statistics and Macro, 2011). The level of education has been reported as an important factor with impact on reproductive matters and SES issues.

Table 3.1: Socio-demographic characteristics of respondents

Characteristics	**Frequency (n)**	**(%)**
Age category (years) (n=542)		
18 – 24	62	11.4
25 – 35	275	50.7
36 – 49	205	37.9
Mean (SD*, Range) Age (years)	33.6 (7.9, 18-49)	
Education level (n=542)		
No formal education	220	40.6
Primary school	306	56.4
Secondary school or higher	16	3.0
Marital status (n=542)		
Never married (Single)	56	10.3
Married/cohabiting	328	60.5
Divorced, widow, separated	158	29.2
Household size (No of persons) (n=442)		
Less than 4	75	13.8
4 – 6	257	65.9
More than 6	110	20.3
Median (IQR**) number of HH members	5 (4 – 6)	
HH*** composition by age (years)		
No. of HHs with <5yrs (n=314):		
Number of children		
1 child	229	72.9
2 or more	85	27.1
HHs with 5 – 14 yrs (n=480):		
Number of children		
1 – 2	343	71.5
3 or more	137	28.5
No. of HHs with ≥15 yrs. (n=542):		
Number of persons		
1 – 3	425	78.4
4 or more	117	21.6

*SD=Standard deviation); **IQR=Interquartile range; ***HH=Household

Education empowers women by increasing their autonomy and understanding of family planning issues which often results into bearing fewer children (Levine *et al.*, 2001). Most of the respondents (72.9%) came from households consisted of at least one child aged below 5 years and 72.5% of the respondents came from households consisting of children

between 5-14 years. This implies that the selected women were appropriate for this study because they were real involved in reproductive issues.

3.4.2 Descriptive statistics of reproductive factors of respondents

Table 3.2 presents reproductive factors of study respondents. More than half of respondents (52.6%) had 2-3 children. The median (IQR) number of children per woman participating in the study was 3 (2-5). Almost one fifth of them (19%) desired to have more than 6 children. The desired number of children for each woman was in line with findings from the Tanzania Demographic and Health Survey 2012 (URT, 2012), which reported a total fertility rate (TFR) in rural Tanzanian women aged 15-49 years to be 6.1 compared to 3.7 in urban areas (URT, 2016). The mean age at first pregnancy was 18.5 (SD=3.2; Range=12-35), with 56.5% and 43.5% of respondents becoming pregnant for the first time at ≤ 18 and ≥ 19 years, respectively. FGDs results showed that the reasons for conceiving at young age included getting marriage at that age, poverty, family instability resulting to separation of couples. The separation results into leaving the children with no care of the parents thus children particularly girls mothers' responsibilities to take care the family especially the young and involve in sexual relationship early. Unfortunately, according to FGDs, the culture associated with matrilineal system encourages getting children at young age thus extend the clan.

Table 3.2: Reproductive factors of respondents

Reproductive Characteristic	n	%
Median (IQR*) number of children	3 (2-5)	
Number of children		
2 – 3	285	52.6
4 – 5	230	42.4
6 – 10	27	5.0
Median number of children desired (n=524)	6 (5 – 6)	
Number of children desired		
2 – 3	29	5.4
4 – 5	410	75.6
≥ 6	103	19.0
Interval of last two births (in years) (n = 498)		
< 2	137	27.5
2 – 3	268	53.8
≥ 4	93	18.7
Unplanned pregnancy		
Not experienced	393	72.5
Experienced	149	27.5
Mean (SD**, Range) age at first pregnancy (years)	18.5 (3.2, 12-35)	
Age at first pregnancy (Years)		
≤ 18	306	56.5
≥ 19	236	43.5
Consent for first pregnancy (n = 535)		
Not consented	126	23.6
Consented	409	76.4
No consent 1st pregnancy, reason (n = 126)		
Got married	52	41.3
Ignorance of contraceptives	38	30.2
Lack of income generating activity	34	27.0
Raped	2	1.6

*Interquartile range (IQR); **Standard deviation (SD); Age, marital status, education and ward of residence were used as control factors

About one third (27.5%) of the study women had experienced unplanned pregnancies. The contributing factors for unplanned pregnancies included lack of family planning education particularly for male partners hence not supporting their wives in birth control and poor family planning services in the study area (FGDs). Majority of respondents (76.4%) consented for first pregnancy while the rest of the women did not consent for first pregnancy. Reasons for conception included getting married (41.3%), ignorance of birth-control methods (30.2%), lack of income generating activity and being raped (1.6%).

3.4.3 Proportions of respondents per variable in household SES categories

Distribution proportions of respondents in categories of household SES based on study variable in shown in Table 3.3. However, the distribution is described based on statistical analysis in Table 3.4.

Table 3.3: Proportions of respondents per variable in household SES (n=542)

Variable	Variable category	Household SES			
		Low		Medium-High	
		No	%	No	%
Age of respondent (years)*	≤35	162	48.1	175	51.9
	>35	80	39.0	125	61.0
Marital status*	Never married	21.0	37.5	35.0	62.5
	Ever married	221	45.5	265	54.5
Education level*	Up to primary	238	45.3	288	54.8
	≥Secondary school	4	25.0	12	75.0
Ward of residence*	Kinole/Mkuyuni	221	50.6	216	49.4
	Gwata	21	20.0	84	80.0
HH with children aged <5 years*	No	74	39.2	115	60.8
	Yes	168	47.6	185	52.4
HH with children aged ≥5 years*	No	34	40.5	50	59.5
	Yes	208	45.4	250	54.6
Sex of household head*	Male	147	45.5	176	54.5
	Female	95	43.4	124	56.6
Household size*	5 or less	143	43.5	186	56.5
	More than 5	99	46.5	114	53.5
Maximum number of children desired	5 or less	97	38.3	156	61.7
	More than 5	136	50.2	135	49.8
Number of children	3 or less	121	42.5	164	57.5
	More than 3	121	47.1	136	52.9
Interval of last two births (years)	Less than 2	18	52.9	16	47.1
	2 or more	214	45.9	252	54.1
Unplanned pregnancy (ies)	No	175	44.5	218	55.5
	Yes	67	45.0	82	55.0
Age at first pregnancy (years)	18 or younger	150	49.0	156	51.0
	19 or older	92	39.0	144	61.0

3.4.4 Association between reproductive factors and household SES

Five explanatory variables that were contemplated to influence the outcome variable (household SES) were subjected to association analysis. The explanatory variables were

namely: the actual number of children per woman, maximum number of children a woman desired to have, interval of last two births, unplanned pregnancies and the age of a woman at first pregnancy. In this analysis for association between reproductive factors and household SES, socio-demographic factors which were assumed to influence results were used as control variables (Table 3.4). Based on results as shown in Table 3.4, out of these variables, three variables did not show significant relationships with the outcome variable. Two variables, i.e. maximum number of children a woman desired to have and the age at first pregnancy showed significant association with the outcome variable.

Binary logistic regression showed a significant negative relationship between the number of children and SES. Respondents who wished to have relatively large number of children (more than 5 children) were less likely to belong to higher (medium-high) household SES by 69% [OR 0.310; 95%CI :(1.17-2.06), p = 0.02]. This is contrary to the hypothesis stating that women's reproductive factors are not associated with the corresponding household SES. However, the finding was in line with the findings by Lantana (1997) who reported a negative relationship between the number of children and SES in Burkina Faso. The negative relationship has previously been proposed to operate through early pregnancy hence early parenthood and close spacing of children which compromise economic productivity (Peterson, 1987; Budig and England, 2001; Cawthorne, 2008).

Women who conceived while 19 years of age or older, were almost eighty percent (76%) more likely to be in the higher (medium-high) SES category compared to those who conceive for the first time at the age of 18 years or younger [OR 1.76; 95% CI: (1.48-3.83), $p<0.05$]. Nevertheless, findings show that majority of women (56.5%) conceived at the age of 18 years or less. This is likely to compromise productivity of the respondents hence negatively influence their contribution to household SES. Nevertheless, the actual number of children did not show significant relationship with SES of households. Partly,

this is explained by intergenerational wealth flows proposed by Caldwell (2005). The author suggested that for most people in most societies, alternative ways of maintaining savings from the earlier to the later stage of the life cycle was available only when large scale investment in children's education was possible. However, this study did not analyze the extent to which parents invested in their children's education to see if it was a reason for lack of relationship.

Age at first pregnancy showed a significant positive association with household SES. Respondents who had their first pregnancy at the age of 19 years or above were more likely to be in the better (medium-high) household SES category ($p<0.05$). Teenage pregnancies and motherhood have been reported to be interlocked with low SES through discontinued education, reduced employment opportunities, un-stable marriages, low incomes and heightened health and developmental risks (Rindfuss *et al.,* 1984). Moreover, previous researchers report that early pregnancy and early parenthood compromise economic productivity (Peterson, 1987; Budig and England, 2001; Cawthorne, 2008) resulting to poor SES. FGDs attributed teenage pregnancies to early marriages as well as poverty and family instability that forces girls to take responsibility of caring families. During FGD, one of the participants narrated that;

> "*Instability of marriages subject girls to responsibilities which forces them to enter relationships with men intending to get financial support for taking care their youngsters. This occurs when parents separate for whatever reason*". "(FGDs, Zaina, Maseyu village-Gwata ward, 30/12/2017).

Cultural believes associated with matrilineal societies, to which the study community belongs, was reported to encourage early pregnancies by believing that getting children for a girl was important in ensuring perpetuation of the clan.

According to the 2010 Tanzania Demographic and Health Survey, teenage pregnancy is a major health concern because of its association with higher morbidity and mortality for both the mother and child (National Bureau of Statistics and Macro, 2011; URT, 2019), all of them being counter-productive. Nevertheless, findings from this study show that more than a half of study participants (56.5%) had their first conception at age 18 or below, reflecting the predominance of early (teenage) pregnancies and motherhood in the study area. Reasons for getting pregnancy at such age were mentioned as getting marriage, ignorance of contraceptive and lack of income generating activity. Findings from this study therefore explain the high degree of vulnerability of the study community, especially women, to poverty through childhood pregnancies and motherhood as previously suggested elsewhere (Hofferth *et al.,* 2001; Varga, 2003; Jaiyeoba, 2009). During FGD, a woman said:

> *"I was married early at young age of 17 years because there was no important program going on for me; consequently, I conceived at that age"*(FGDs, Rukia, Kibwaya village-Mkuyuni ward, 29/12/2017).

Birth intervals and unplanned pregnancy had no significant relationship with SES. This supported the hypothesis that women's reproductive factors are not associated with the corresponding household SES. Most of the study women had their last two births spaced at most 36 months apart. This birth interval is in accordance with the WHO recommendation of 2-3 years (World Health Organization, 2005). The health benefits of longer birth intervals of at least 2 years apart have been reported by several studies (Morley, 1977; Setty-Venugopal and Upadhyay, 2002; Marston, 2006; National Bureau of Statistics and Macro, 2011). The absence of any associations could be because almost all (99.3%) the respondents were employed in mainly the same economic activity (agriculture) which is

informal employment with no clear regulations related to economic consequence as far as birth intervals and unplanned pregnancies are concerned.

Table 3.4: Reproductive factors associated with household SES (n=542)

Variable	Variable category	β	S. E	aOR	P-Value	95% C.I.	
						Lower	Upper
Age of respondent (years)*	≤35						
	>35	-0.182	0.233	1.58	0.043	1.01	2.46
Marital status*	Never married						
	Ever married	-0.267	0.382	1.21	0.596	0.60	2.41
Education level*	Up to primary						
	≥Secondary school	-0.594	0.644	1.62	0.451	0.46	5.65
Ward of residence*	Kinole/Mkuyuni						
	Gwata	-1.375	0.281	3.94	0.000	2.30	6.75
HH with children aged <5 years*	Do not have						
	Have	0.468	0.221	0.341	0.035	1.033	2.502
HH with children aged ≥5 years*	Do not have						
	Have	0.132	0.285	1.105	0.737	0.618	1.974
Sex of household head*	Male						
	Female	-0.043	0.231	0.859	0.52	0.541	1.364
Household size*	5 or less						
	More than 5	0.043	0.229	1.203	0.526	0.68	2.126
Maximum number of children desired	5 or less						
	More than 5	0.36	0.210	0.310	0.021**	1.17	2.06
Actual Number of children	3 or less						
	More than 3	0.041	0.201	0.78	0.260	0.51	1.20
Interval of last two births (years)	Less than 2						
	2 or more	-0.073	0.393	1.07	0.851	0.51	2.26
Unplanned	Not experienced						

pregnancy (ies)							
	Experienced	0.067	0.224	0.95	0.809	0.62	1.45
Age at first pregnancy (years)	18 or younger						
	19 or older	-0.241	0.205	1.76	0.025**	1.48	3.83

*Control variables for association between reproductive factors and SES; aOR = adjusted Odds Ratio; C.I. = Confidence Interval; Significant at P <0.05; **β** = Beta coefficient; S.E = Standard Error

3.5 Conclusions and Recommendations

This study examined the association between selected women reproductive factors and household SES in rural settings. It intended to test the null hypothesis that in Morogoro District, women's reproductive factors are not associated with the corresponding household SES. Binary logistic regression revealed that the number of children desired by a woman and the age at first pregnancy had association with household SES ($p<0.05$) in both cases. Desire for larger number of children impacted negatively household SES such that women who wished to have relatively many children (more than 5) were less likely to belong to higher (medium – high) SES. In line with the guiding theory (the Feminist explanations for the Feminization of Poverty), this study concluded that the desire for many children restrain households from achieving higher SES. Therefore, the study recommends developing stakeholders to strengthen family planning education among community members so as to allow planning for optimal number of children while considering consequence on socio-economic development at household level and community at large.

Likewise, this study confirmed that conceiving at the age of 19 years or older increases the likelihood to attain better SES compared to conceiving while younger, at the age 18 years or below. Therefore, it is concluded that early pregnancies restrict households from

attaining higher SES. The study recommended that the Government and non-Government development agencies should promote reproductive health education in Morogoro District discouraging early conception. This can be achieved through community sensitization and campaigns. Particular emphasis should be given to discouraging early pregnancies and motherhood as part of reproductive health interventions. The interventions should be specifically designed to suit women with low level of education as it was observed in the study area so that the intended messages are received effectively.

3.6 References

Adhikari, R. (2010). Demographic, socio-economic, and cultural factors affecting fertility differentials in Nepal. *BMC Pregnancy and Childbirth* 10(1): 1-19.

Antonopoulos, R., (2008). The unpaid care work-paid work connection. [https://www. econstor.eu/handle/10419/31491] site visited on 14/2/2019.

Atkinson, A. B. and Lugo, M. A. (2010). Growth, poverty and distribution in Tanzania [http://eprints.lse.ac.uk/36376/1/Growth_poverty_and_distribution_in_Tanzania.pd] site visited on 11/07/2019.

Awan, M. S., Malik, N., Sarwar, H. and Waqas, M. (2011). Impact of education on poverty reduction (No. 31826). University Library of Munich, Germany.

Azzarri, C., Carletto, G., Davis, B. and Zezza, A. (2006). Monitoring poverty without consumption data: an application using the Albania panel survey. *Eastern European Economics* 44(1): 59-82.

Beaumont, R. (2012). An introduction to principal component analysis & factor analysis using SPSS 19 and R (psych package). *Factor Analysis and Principal Component Analysis (PCA)* 24(8-9).

Benesty, J., Chen, J., Huang, Y., and Cohen, I. (2009). Pearson correlation coefficient. In *Noise reduction in speech processing* (pp. 1-4). Springer, Berlin, Heidelberg.

Bibler, S. and Zuckerman, E. (2013). The Care Connection: The World Bank and women's unpaid care work in select sub-Saharan African countries (No. 2013/131). WIDER Working Paper [http://hdl.handle.net/10419/93728] sited on 17/11/2019.

Blackden, C. M. and Wodon, Q. (2006). Gender, time use, and poverty in sub-Saharan Africa (73 Edn) World Bank Working Paper No 73. Washington DC. 152pp.

Bradshaw, S., Chant, S. and Linneker, B. (2019). Challenges and changes in gendered poverty: the feminization, de-feminization, and re-feminization of poverty in Latin America. *Feminist Economics* 25: 119-144.

Bradshaw, S., Castellino, J. and Diop, B. (2013). Women's role in economic development: overcoming the constraints, prepared for the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda. Project Report. The United Nations.

Bryman, A. and Bell, E. (2015). *Business Research Methods*. Oxford University Press, USA. 525pp.

Budig, M. J. and England, P. (2001). The wage penalty for motherhood. *American Sociological Review* 66(2): 204-225.

Budlender, D. (2005). Women and poverty. *Agenda* 19: 30-36.

Caldwell, J. C. (2005). On net intergenerational wealth flows: an update. *Population and Development Review* 31(4): 721-740.

Campbell, A. A. (1968). The role of family planning in the reduction of poverty. *Journal of Marriage and the Family* 1968: 236-245.

Cawthorne, A. (2008). The straight facts on women in poverty. *Centre for American Progress* 8: 1-3.

Chant, S. (2004). Dangerous Equations? How Female Headed Households Became the Poorest of the Poor: Causes, Consequences and Cautions. *IDS Bulletin* 35: 19-26.

Chant, S. (2006). Re-thinking the 'feminization of poverty in relation to aggregate gender indices. *Journal of Human Development* 7: 201-220.

Chant, S. (2012). The disappearing of 'Smart economics'? The World Development Report 2012 on Gender Equality: Some concerns about the preparatory process and the prospects for paradigm change. *Global Social Policy* 12: 198-218.

Chant, S., (2003). Female household headship and the feminization of poverty: facts, fictions and forward strategies. [http://eprints.lse.ac.uk/archive/00000574] site visited on 15/2/2019.

Cochran, W. G. (1963). *Sampling Techniques*, 2nd Ed., New York: John Wiley and Sons, Inc. 5pp.

Collins M. (2003). Head-driven statistical models for natural language parsing. *Computational Linguistics* 29: 589-637.

De Weerdt, J. (2010). Moving out of poverty in Tanzania: Evidence from Kagera. *The Journal of Development Studies* 46: 331-349.

Demombynes, G. and Hoogeveen, J. (2004). Growth, Inequality, and Simulated Poverty Paths for Tanzania, 1992-2002. The World Bank.

Ellis, A. (2007). *Gender and economic growth in Tanzania: Creating opportunities for women*. World Bank Publications. 140pp.

FAO (2014). Tanzania Country Profile: Gender Inequalities in Rural Employment in Tanzania Mainland, an Overview. Rome, Italy: Food and Agriculture Organization.

Ferrant, G. I., Pesando, L. M. and Nowacka, K. (2014). Unpaid Care Work: The missing link in the analysis of gender gaps in labour outcomes. Issues Paper, OECD Development Centre. [www.oecd.org/dev/developmentgender/unpaidcare work.pdf] site visited on 12/10/2017.

Ferreira, F. and Ravallion, M. (2009). *Poverty and Inequality: The Global Context*. The Oxford Handbook of Economic Inequality, Oxford: Oxford University Press. pp599-636.

Gould, J. and Ojanen, J. (2003). Merging in the circle: The politics of Tanzania's poverty reduction strategy Institute of Development Studies, University of Helsinki.

Greene, M. E. and Merrick, T. (2005). Poverty reduction: Does reproductive health matter? (33399 Edn) World Bank. 54pp.

Gribble, J. and Haffey, J. (2008). Reproductive health in sub-Saharan Africa. Population Reference Bureau. 8pp.

Guilkey, D. K., and Rindfuss, R. R. (1987). Logistic regression multivariate life tables: A communicable approach. *Sociological Methods and Research* 16(2): 276-300.

Hofferth, S. L., Reid, L. and Mott, F. L. (2001). The effects of early childbearing on schooling over time. Family Planning Perspectives. 259-267pp.

IBM Knowledge Centre, (2019). Factor Analysis Extraction [https://www.ibm.com/ support/knowledgecenter/en/SSLVMB_24.0.0/spss/base/idh_fact_ext.html] site visited on 20/11/2019.

Jaiyeoba, A. O. (2009). Perceived impact of universal basic education on national development in Nigeria. *International Journal of African and African-American Studies* 6: 113-120.

Jeckoniah, J. N., Nombo, C. N. and Mdoe, N. S. Y. (2014). Socio-economic status and women empowerment in rural Tanzania: a case of onion value-chain in

Simanjiro district. *Tanzania Journal of Development Studies* 14 (1 and 2): 65-76.

Kabeer, N. (2003). Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A handbook for policy-makers and other stakeholders Commonwealth Secretariat.

Kaiser, H. F. (1991). Coefficient alpha for a principal component and the Kaiser-Guttman rule. *Psychological Reports* 68(3): 855-858.

Katapa, R. S. (2006). A comparison of female-and male-headed households in Tanzania and poverty implications. *Journal of Biosocial Science* 38: 327-339.

Kes, A. and Swaminathan, H. (2006). Gender and time poverty in sub-Saharan Africa. Gender, Time Use, and Poverty in Sub-Saharan Africa. pp13-38.

Koenig, M. A., Phillips, J. F., Campbell, O. M. and D'Souza, S. (1990). Birth intervals and childhood mortality in rural Bangladesh. *Demography* 27: 251-265.

Kolenikov, S. and Angeles, G. (2009). Socioeconomic status measurement with discrete proxy variables: Is principal component analysis a reliable answer? *Review of Income and Wealth* 55(1): 128-165.

Komatsu, H., Malapit, H. J. and Theis, S. (2015). How does women's time in reproductive work and agriculture affect maternal and child nutrition? Evidence from Bangladesh, Cambodia, Ghana, Mozambique, and Nepal. (No. 1486). International Food Policy Research Institute (IFPRI).

Krueger, R. A., Casey, M. A., Donner, J., Kirsch, S. and Maack, J. N. (2001). Social analysis: selected tools and techniques. Social Development Paper. 36pp.

La Du, T. J. and Tanaka, J. S. (1989). Influence of sample size, estimation method, and model specification on goodness-of-fit assessments in structural equation models. *Journal of Applied Psychology* 74(4): 625-633.

Laerd, S. (2015). Principal components analysis (PCA) using SPSS Statistics [https://statistics.laerd.com/spss-tutorials/principal-components-analysis-pca-using-spss-statistics.php] site visited on 19/11/2019.

Leavens, M. K. and Anderson, C. L. (2011). *Gender and Agriculture in Tanzania EPAR Brief* (Vol. 134). Seattle, USA: Evans School Policy Analysis and Research, University of Washington.

Levin, K. A. (2006). Study design III: Cross-sectional studies. *Evidence-based Dentistry* 7(1): 1-24.

Levine, J. A., Pollack, H., and Comfort, M. E. (2001). Academic and behavioural outcomes among the children of young mothers. *Journal of Marriage and Family* 63(2): 355-369.

Lusambo, L. P. (2016). Households' income poverty and inequalities in Tanzania: Analysis of empirical evidence of methodological challenges'. *Journal of Cosy's Ecograph* 6(2): 183-193.

Marston, C. (2006). Report of a WHO Technical Consultation on Birth Spacing Geneva Switzerland 13-15 June 2005.

McFerson, H. M. (2010). Poverty among women in Sub-Saharan Africa: A review of selected issues. *Journal of International Women's Studies* 11: 50-72.

McIntyre, P. and World Health Organization (2006). Pregnant adolescents: delivering on global promises of hope. WHO Press, World Health Organization, Geneva.

MoHCDGEC (2015). NBS, Office of the Chief Government Statistician, and ICF. Demographic and health survey and malaria indicator survey (TDHS-MIS), 16pp.

MoHCDGEC, T. and MoH, Z. (2015). Tanzania National Bureau of Statistics, Zanzibar Office of Chief Government Statistician, and ICF. (2016). Tanzania demographic and health survey and malaria indicator survey 2015-2016.

Morley, D. (1977). Biosocial advantages of an adequate birth interval. *Journal of Biosocial Science* 9: 69-81.

Moser, C. O. (2012). *Gender Planning and Development.* Theory, practice and training Routledge Publishers. Washington, DC. 298pp.

Mussa, R. (2014). Impact of fertility on objective and subjective poverty in Malawi. Development Studies Research. *An Open Access Journal* 1(1): 202-222.

National Bureau of Statistics (2018). Women and Men; Facts and Figures. [https://www.nbs.go.tz/nbs/takwimu/WomenAndMen/women_and_men_booklet.pdf] site visited on 17/02/2019.

National Bureau of Statistics (NBS) [Tanzania] and ICF Macro. (2011). Tanzania Demographic and Health Survey 2010. Dar es Salaam, Tanzania: NBS and ICF Macro.

Palacios-Lopez, A., Christiaensen, L. and Kilic, T. (2015). How much of the labour in African agriculture is provided by women? The World Bank.

Peterson, J. (1987). The feminization of poverty. *Journal of Economic* 21: 329-337.

Pressman, S. (2002). Explaining the gender poverty gap in developed and transitional economies. *Journal of Economic* 36: 17-40.

Pressman, S. (2003). Feminist explanations for the feminization of poverty. *Journal of Economic* 37: 353-361.

Renner, M., and Taylor-Powell, E. (2003). Analyzing qualitative data. *Programme Development & Evaluation, University of Wisconsin-Extension Cooperative Extension,* pp1-10.

Rindfuss, R. R., St. John, C. and Bumpass, L. L. (1984). Education and the timing of motherhood: Disentangling causation. *Journal of Marriage and Family* 46(4): 981-984.

Rutstein, S. O. and Johnson K. (2004). The DHS wealth index. DHS comparative reports no. 6. Calverton: ORC Macro.

Rwebangira, M. K. (1996). The legal status of women and poverty in Tanzania (100 Edn) Nordic Africa Institute.

Sachs, J. D. (2012). From millennium development goals to sustainable development goals. *The Lancet* 379: 2206-2211.

Sahn, D. E. and Stifel, D. C. (2003). Urban–rural inequality in living standards in Africa. *Journal of African Economies* 12: 564-597.

Santelli, J., Rochat, R., Hatfield, É., Timajchy, K., Gilbert, B. C., Curtis, K., Cabral, R., Hirsch, J. S. and Schieve, L. (2003). The measurement and meaning of unintended pregnancy. *Perspectives on Sexual and Reproductive Health* 35: 94-101.

UNESCO (2000). Focusing Resources on Effective School Health: a FRESH start to enhancing the quality and equity of education. Washington DC, USA: World Bank.

United Republic of Tanzania (1998). *The National Poverty Eradication Strategy*. Government Printer. Dar es Salaam, Tanzania. 56pp.

URT (2016). National Five-Year Development Plan 2016/17-2020/21. Dar es Salaam, Tanzania: Ministry of Finance and Planning.

URT (2018a). The Economic Survey 2017. Dodoma, Tanzania: Ministry of Finance and Planning.

URT (2018b). Women and Men: Facts and Figures. Dar es Salaam, Tanzania: National Bureau of Statistics.

URT (2019). Household Budget Survey 2017-18: Key indicators Report. Dodoma, Tanzania: National Bureau of Statistics and Ministry of Finance and Planning.

Varga, C. A. (2003). How gender roles influence sexual and reproductive health among South African adolescents. *Studies in Family Planning* 34: 160-172.

Vyas, S. and Kumaranayake, L. (2006). Constructing socio-economic status indices: how to use principal components analysis. Health Policy and Planning

Walker, J. L. (2012). Research column. The Use of Saturation in Qualitative Research. *Canadian Journal of Cardiovascular Nursing* 22(2).

World Bank (2010). Gender and Economic Growth in Tanzania: Creating Opportunities for Women. Washington DC, USA: The International Bank for Reconstruction and Development. The World Bank.

World Bank (2010). Gender and Economic Growth in Tanzania: Creating Opportunities for Women. Washington DC, USA: The International Bank for Reconstruction and Development. The World Bank.

World Bank Group (2015). Tanzania Mainland Poverty Assessment. Washington, DC 20433, USA: World Bank, 1818 H Street NW.

Xhafaraj, E. (2013). The Principal Component Analysis and Claster Analysis as a Tool for the Estimation of Poverty, Albanian Case Study.

CHAPTER FOUR

Time Spent by Women and Men in Households on Economic and Family Care Activities during Productive Hours in Morogoro District, Tanzania

Edith Kwigizile[1*], John Msuya[2] and Michael J. Mahande[3]

[1]Department of Development Studies, College of Social Sciences and Humanities, Sokoine University of Agriculture, Morogoro, Tanzania

[2]Department of Food Technology, Nutrition and Consumer Sciences, Sokoine University of Agriculture,

[3]Department of Epidemiology and Biostatistics, Kilimanjaro Christian Medical University College, Moshi, Tanzania

Email for correspondences: edithkwigizile@yahoo.co.uk

4.1 Abstract

Low socio-economic status is a common phenomenon in rural Tanzania. Though women constitute substantial proportion in agriculture and their role in household economy is important, it is known that they spend more time in reproductive especially family care work. The extent to which family care activities consumes potential economic productive time is not clearly reported. Likewise, contributing factors that extend the time spent by women in family care activities are not clearly documented. This study examined the time spent by women and men in households on economic and family care activities in Morogoro District, Tanzania. The study focused on economic productive hours as defined by study community. Factors related to time expenditure in family care activities were studied. The study involved 323 randomly selected married or cohabited women aged 15-

49 years, who were living with male partner during the study. Three hundred twenty three (323) spouses/male partners of the selected women were interviewed specifically to provide data on the time that men spend in productive and family care activities to enable establish the difference in time expenditure between men and women within the same living environment. The study was conducted in six randomly selected villages from three wards. Quantitative and supplementary qualitative data were collected using a structured questionnaire and focus group discussions respectively. Analysis of data was achieved by using SPSS v22. While Student's t-test was used to analyze quantitative data, content analysis was used to analyze qualitative data. Student's t-test showed that the time spent by women and men in productive and care activities differ significantly ($p<0.01$). It was also shown that compared to men, women spend 2.23 hours less per day in economic production. Conversely, women spend 1.20 hours more in family care and maintenance activities as well 2.12 hours more in child nursing activities in a day. In addition, majority (64.8%) of the women spend 3 hours or more for obtaining Maternal and Child Health (MCH) services per single visit. The study concluded that compared to men, women spend less time in production and more time for family care activities during economic productive hours. The time that women spend in family care activities is lengthened by poor access to social services. Child care services were scarce resulting to overlapping of economic and childcare activities for women. The study recommends to development agencies to focus on reducing the time that women spend in family care activities by improving technology and access to social services to easy performing household and care activities consequently increase time spent in production. Women should be empowered economically to enable them or their respective households afford to hire childcare assistants or service once deemed necessary.

Key words: Production, reproduction, women, time, Morogoro, Tanzania

4.2 Introduction

The differential division of labour among men and women is a global concern since it impacts on the socio-economic status of men and women. Many studies have been conducted to describe gender differences in terms of time spent on productive and reproductive activities. An important rationale for most studies has been the existing viewpoint that women take multiple responsibilities and spend more time in reproductive work compared to men, which compromise their economic productivity (Cawthorne, 2008). Anti-poverty approaches concerned with women in development have shown existence of increased hours and intensity of work among women (Jackson, 1996 cited in Chant (2012). Spending more time in reproductive work particularly family care activities for women is a characteristic of both developing and developed countries. It is argued that 'unpaid' care, which constitutes most of reproductive responsibilities, is a global issue affecting women regardless of their education levels and income or the level of development of their countries. In Africa, Tanzania inclusive, gender time allocation in activities takes a similar trend whereby women spend more time on non-productive activities compared to men (Feinstein *et al.,* 2010; Komatsu *et al.,* 2015).

Despite the ambiguities that have existed in categorizing day to day activities, it is generally acceptable that productive or economic, market or paid activities reflect activities associated with payment (Blackden and Wodon, 2006; Kes and Swaminathan, 2006; Antonopoulos, 2008). Reproductive, non-economic, or unpaid activities are those that are not associated with any direct payments. Family care giving ranges from assistance with daily activities including health care. Some scholars suggest that most of care activities are termed as physical reproductive roles and they include care and maintenance of the present and future work force (male partner, infants, school-going and non-working children and other dependent household members) (Galtry, 2000; Bibler and

Zuckerman, 2013). Care work for the family and the community is essential to human life and to the social and economic foundations of all economies. It enables the “productive” economy to function as it supports the well-being of the workforce, children, older persons and people with disabilities, and subsidizes the monetized economy.

Gender time distribution in different activities varies across different regions, cultures and socio-economic classes. It is reported that in Tanzania the burden of unpaid labour is large in households due to undeveloped domestic technology (Leavens, 2011). Consequently, women spend significant time performing domestic tasks, and especially in transport that is related to domestic responsibilities (Leavens and Anderson, 2011). Due to these many responsibilities, time burdens are widely identified as a major constraint on women’s enterprise and income improvement. In general, a number of factors influence the amount of time that one spends in performing a particular activity. The factors include the age and gender composition of household members, seasonal and farm systems, ease of access to water and fuel, availability of infrastructure, and distance to key economic and social services such as schools, health centres, financial institutions, and markets (Blackden and Wodon, 2006). Other factors affecting gender time distribution in activities are the level of knowledge about particular activity, access to assets that can simplify performing the tasks, availability of assistance in performing tasks and ability to outsource the activities (Komatsu *et al.*, 2015).

African women must often work long hours performing domestic chores and collecting water and wood, apart from their paid or unpaid work in the fields or other labour market activities (Bardasi and Wodon, 2010). Literature shows that outsourcing activities is not an affordable or realistic option for most women hence their household’s daily wellbeing depends on them to carry out these activities (Ferrant *et al.*, 2014). In case of assistance to

perform household chores, mostly, women are assisted by girls children, the situation which imply women undertake care giving activities since they are at young age (Mushi and Mwakasungula, 2008). Previous reports suggest that mothers with children less than five years of age would be working more hours in economic productions if suitable and affordable childcare facilities were available in the community (Kuhhirt and Ludwig, 2012).

Gender gap in housework time has been getting narrow and narrow over time. For example, from the 1960 cohort to the 1975, gender gap in housework time has been narrowed by 40% cohort. However, life-course factors driving change in housework time still hold potential for further gender convergence (Skopek and Leopold, 2019). Gender convergence means blurring of sex roles in modern society; men and women increasingly express similar attitudes about balancing home life and work. Gender segregation in domestic work is quite persistent over time. Although men have increased their contributions disproportionately to non-routine domestic work, women still do the bulk of routine housework and caring for family members (Kan *et al.,* 2011). In developing countries, Tanzania inclusive, particularly in rural areas where incomes are low, it is rare to higher assistant for housework. Due to low technology for performing domestic work, performing domestic activities remain a concern particularly when thinking of the time devoted to domestic and care work.

Based on literature above, it is evident that many studies have been conducted concerning gender division of labour and time expenditure in different activities, reporting disproportional expenditure of time between men and women (Shirley and Wallace, 2004; Cawthorne, 2008; Feinstein *et al.,* 2010). Literature shows that the gender gap in allocating time in un-paid activities ranged from two hours to almost five hours per day

but in general, around the world, women spent two to ten times more time on unpaid care work than men (Antonopoulos, 2008). Although gender convergence in roles has currently been observed, still there is potential for further gender convergence (Skopek and Leopold, 2019). Therefore, while planning for full utilization of women's economic potential for improving SES and wellbeing of Tanzanians as planned by Tanzanian Government (URT, 2016), it is important to examine how women's time is allocated in productive and non- productive work and the associated factors.

Non-productive work counteracts women's productivity hence it is associated with their poor SES. According to Pressman (2003), women and their households are more likely to be poor than men because they spend most of their time in care giving activities for their children and other household work hence they earn low since they spend less time in economic productive work. Previous researchers have established that factors that lead to women's poor SES are not confined to women, they can affect other households (Ferreira and Ravallion, 2009; De Weerdt, 2010; Chant, 2012; FAO, 2014). In addition, women are key players of productions especially in rural households. They play an important role in Tanzania's economy for being more active in agriculture, which accounts for 82% of the labour force (FAO, 2014; MoHCDGEC, 2015) and they constitute majority (54%) of agricultural force (Leavens and Anderson, 2011).

Households with low SES characterize rural population whereby 80% of rural is categorized as poor compared to 12% households in urban areas (URT, 2016). With specific to the study area, based on head count ratio, 55% of households in Morogoro rural are poor (Lusambo, 2016). Women who constitute majority (54%) of the work force in agriculture (Lavens and Anderson, 2011), the main economic activity of the rural population, are time constrained in production. Partly, the constraint of production is

related with performing un-paid activities especially those related to reproduction and care responsibilities (Blackden and Wodon, 2006; Cawthorne, 2008). Although factors that affect women's SES and their households are known, it is not reported how women's care giving responsibilities affect SES of households in rural areas of Tanzania regardless sex of the household head. Particularly, the extent to which women spend time in care activities during economic productive hours is not clearly reported.

Available studies report about the length of time that women spend in reproductive and care activities without neither specifying hours potential for economic nor mentioning factors that prolong performing care activities. In most of the studies, researchers have either used 24 hours' time a day while others the time framework is not clearly stated (Komatsu *et al.*, 2015; Leavens and Anderson, 2011). Therefore, this study intended to compare time spent by women and men on households' economic and care activities. Specifically, the study intended to (i) compared time spent by men and women for economic productive work (ii) determine the amount of time spent by men and women on family care and maintenance work, (iii) determined time spent by women and men in child nursing.

The Government of Tanzania intends to unleash women's potential in production so as to achieve its plans of the FYDP 2016/2017-2020/2021 (URT, 2016). Therefore, this study is important because if women are assisted in performing care activities or supported to shorten the time that is spent for performing these important care giving activities, more of their time may be used for production thus contributing to improving SES. Responsibilities such as preparation of food, washing clothes, looking after children, educating children, child nursing and sitting with a baby and breast-feeding care for the sick and the like are important for welfare of families and community as whole. Likewise,

increasing production time for women is equally important for household's SES. Therefore, understanding time allocation in productive and care activities as well as identifying factors influencing time allocation is an important guide for interventions intending to increase productivity of women. This study was guided by a theoretical argument that care-giving responsibilities for children and households take away the time that could be spent by women for economic productions (Pressman, 2003). The study hypothesized that time spent by women in household's productive and care activities in rural areas during economic production hours does not differ significantly from that of men.

4.3 Methodology

4.3.1 The study area

This study was conducted in Morogoro District, a prototype rural community in Tanzania. The district was selected purposively due to its known prevalence of poverty, whereby 55% of the households are regarded as poor (Lusambo, 2016). This is supported by the national data that 80% of the rural population are in the 3 lowest wealth quintiles (URT, 2019). Three wards in the study district, Gwata, Mkuyuni and Kinole were purposively selected. From the three wards, six villages were randomly selected to participate in the study. The six study villages were Kinonko and Maseyu from Gwata ward, Madamu and Kibwaya from Mkuyuni ward and Tandai and Ludewa from Kinole ward.

4.3.2 Study design

This study adopted a cross sectional design. The rational for choosing a cross sectional study design was its suitability and the nature of data to be collected (Bryman and Bell, 2018). In addition, this design requires relatively short time and it is cost effective.

4.3.3 Study population inclusion criteria

This study included women aged between 18 and 49 years residing in the study villages. This was within a reproductive age (15-49 years) according to the Tanzania Demographic Health Survey (National Bureau of Statistics and Macro, 2011). Reproductive age was important to allow obtaining data about both productive and care giving activities including childcare activities. Only 323 women from MHHs were considered for this particular study objective. This is because spouses/male partners of these women were in involved in providing data about time which those males spend in productive and care activities thus enable to make comparison of time with that of females and draw up inference. Women included in the study were those with at least two children. This setup allowed not only to capture data concerning realistic family care activities played by women and men within the same environment, but also observation of some practices such as child care during production time was possible.

4.3.4 Sample size and sampling procedure

Multistage sampling was used whereby 627 sampled women were sampled for interview from six randomly selected villages of three participating wards. While women from FHHs were useful for other objectives of the study, this objective three (3) was based on women respondents from MHHs only. After data cleaning, 542 questionnaires responding to 542 women (323 women from MHHs and 219 women from FHHs) qualified for analysis. Therefore, the questionnaires considered for analysis were those which were sufficiently filled with data required from women and their spouses or m male partner (men). For this particular objective, only 323 questionnaires corresponding to 323 women respondents from MHHs were used for analysis because hey consisted information of spouses or male partners of women respondents. It was important to involve male and

female from the same households in order to explore study variables under the same living environment.

4.3.5 Study variables and definitions of categories

In the current study, input variables were; the time spent (in hours) by men and women in productive and reproductive activities, the time spent by women for attendance to ANC and MCH clinics, productive time lost during pregnancy and after delivery as well as access to child assistance. The study community was the basis for identifying the roles and categorizing them. Estimation of time for productive and reproductive activities was considered as the potential time for economic production that is between 6.00 am and 6.00 pm as defined by the study community. Economic productive work included activities which are the main economic activities in the study area, including agriculture, business/trading, mining, bee keeping, fishing, casual labour and animal husbandry. Reproductive or economic work was divided into three categories. Category one included household and family care and maintenance activities such as cooking for children and family, washing clothes and looking after the children. Category two included the time spent on child nursing such as baby-sitting and breast feeding. Category three included activities directly related to biological reproductive responsibilities such as attendance to ANC and MCH services.

It is important to note that the activities performed by women at different stages of their life cycle were identified by the community as follows: Women are responsible for productive activities that mostly include agriculture in totality, business/trading, casual labour, and animal husbandry as the case may be. In addition, women are responsible for reproductive work such as family care and maintenance (food preparation, washing clothes, looking after children, educating children, fetching some water, cleaning house

environment and collection firewood). While pregnant and with under five years children, in addition to the above activities, a woman has to attend Mother and Child Health (MCH), performs child nursing, sitting with a baby and breast-feeding.

4.3.6 Data collection tools and methods

Data collection involved the use of structured, close ended questionnaire through face to face interviews (Appendix 1). The questionnaire used in this study was developed by the investigators, whereby its validity and reliability were also determined. It was first piloted on ten respondents before the actual study and these respondents were excluded during actual data collection and analysis. Pretesting was important to ensure that questions are understood in the same way and provides the desired data. Therefore, after pretesting, the questionnaire was considered suitable for data collection. This method was previously used by other scholars (Collins, 2003; Azzarri *et al.*, 2006).

Data collection was achieved by using questionnaire for quantitative data and Focus Group Discussions (FGDs) guide for qualitative data (Appendix 2). While women responded to all the questions, their spouse/male partner were interviewed specifically to provide data about the time that they spend in productive and reproductive work only. For both women respondents and their spouse/male partner, time measurement was done as described by previous scholars (Komatsu *et al.,* 2015) whereby a record was taken for activities conducted consecutively in four days hence the average time was considered as usual time that a person spends for that particular activity.

Three groups each consisting of 6-8 women were involved in FGDs. One FGD was formed from one of the participating villages in each ward. The group size was based on recommendations of previous scholars i.e. between 6-12 individuals per group (Azzarri *et*

al., 2006; Ritchie *et al.*, 2013). The selected group participants were women who had held leadership positions either during the time of study or in the past. The requirement for leadership experience among FGD participants was meant to involve women who had ample information about the study population. Leadership positions included leaders in village Government, leaders of women social and economic groups and members of various village committees. Leaders of study villages assisted to identify participants of FGDs with the set criteria. Field notes were taken during discussion and important quotes were recorded. The FGDs intended to complement information obtained from interviews and to clarify some issues that needed more information.

4.3.7 Data analysis

4.3.7.1 Analysis of quantitative data

Quantitative data collected by questionnaires was analyzed using SPSS v22 software (IBM SPSS Armonk, NY, and USA). Descriptive data of categorical variables are presented in the form of numbers and percentages organized into Tables. Measures of central tendency (medians and means) are reported as tables and in text. Comparison of time spent by men and women in productive and reproductive activities was performed using Student's t-test. This test compares the mean values for the two groups to tell if they are different from each other. The Student's t-test also tells how significant the differences are; and if those differences could have happened by just chance. For each study issue, non-responses were excluded in the analysis.

4.3.7.2 Analysis of qualitative data

Content analysis was adopted whereby a systematic process for analysis was followed which involved reviewing the field notes and preparing summary for information from individual focus groups. This approach has also been used by others (Morgan, 1993;

Renner and Taylor-Powell, 2003). Themes allied to the guiding questions were identified and recorded indicating distinct opinions about the research issues. Few quotes were used to illustrate important points.

4.4 Results and Discussion

4.4.1 Socio-demographic characteristics of study participants

Demographic characteristics of study respondents are presented in Table 4.1. Out of 323 women involved in the study, 53.3% had attained primary school education and about a half (43.3%) had not obtained any formal school education. The findings were within the recorded data by the Tanzania Demographic and Health Survey 2010, whereby the highest proportion of the population who have never been to school was found in Tabora (42% for females and 34% for males) and Dodoma (40% for females and 33% for males) (National Bureau of Statistics and Macro, 2011). The main reason for the observed high illiteracy rate as reported in FGDs was gender discrimination in the past whereby girls were not provided with the basic opportunity and support to obtain education as compared to boys. Previous studies suggest that education is important in providing exposure to individuals to a variety of experiences, viewpoints, creativity and innovative thinking in planning of daily activities (Thiessen and Nickerson, 1999; Bynner and Parsons, 2002). Based on this argument, the reported illiteracy in the study area is likely to influence on time management by the study community members. About one fifth (15.8%) had children who were below five years old, more than one third (35.6%) of the women had children of between 5-14 years of age.

4.4.2 Time spent by men and women in different activities

The time spent by men and women in economic productive activities, reproductive and child nursing care activities during 12 hours of daytime were analyzed for comparison purposes (Table 4.2). Results show that, on average, women spend 2.23 hours less per day

in economic production activities compared to men. Also, the study found that women spend 2.8 more hours per day compared to men in family care and maintenance work as well as child nursing care. In all cases, the mean time spent by men and women for the three types of activities (economic production, family care and maintenance as well as child nursing care) was statistically different ($p<0.01$).

Table 4.1: Socio-demographic characteristics of respondents

Characteristics	Frequency	(%)
Education level of women respondents (n=323)		
No formal education	140	43.3
Primary school	172	53.3
Secondary school or higher	11	3.4
Education level of respondents' spouses/ males partner(n=323)		
No formal education	75	23.2
Primary school	206	63.8
Secondary school or higher	42	13
Marital status		
Married	299	92.6
Cohabiting	24	7.4
Household size		
Less than 4	7	2.2
4 – 6	228	70.6
More than 6	88	27.2
Median (IQR) number of HH members	6 (4 – 7)	
Age groups in households (years)		
Under 5	274	15.8
5 – 14	616	35.6
15 or older	841	48.6
Average household density 5.4		

Findings about the expenditure of time between men and women were contrarily to the hypothesis stating that time spent by women in household's productive and family care activities in rural areas during economic production hours does not differ significantly from that of men. Contrary, in comparison to men, women spend more time in family care and maintenance activities as well as child nursing activities (p-value < 0.01). This observation was not surprising since in many African and Asian communities, family care and maintenance as well as child care activities are regarded as, by large, a female

responsibility (Blair and Lighter, 1991; Hundley, 2000). Above all, biologically, women provide intimate care especially for babies, such as breast-feeding. Similar findings were previously reported in Bangladesh, Cambodia, Ghana, Mozabique and Nepal (Komatsu *et al.*, 2015).

Literature shows the involvement of women in care activities especially domestic works impede their (women's) overall processes of development. For example, it has been reported that women leave studies to undertake domestic labour, while men do so to enter paid labour (Godoy, 2004). Women start performing care activities since they are young and the responsibilities increase at parenthood stages. For example, it is reported that girls are normally caregivers and assistants to their mothers for doing household chores; and sometimes work as a substitute when the mother is not around (Mushi and Mwakasangula, 2008; Rehema *et al*., 2014).

Findings from FGDs showed that the amount of time spent by women in performing care activities was lengthened by a number of factors most of which are related to poor social services. Scarcity of nearby sources of water for domestic use, absence of electricity as power source, lack of reliable assistance for child care, absence of technologically improved cooking stoves and scarcity of cheap alternative sources of domestic power (firewood) were among the factors that contributed to intensive time expenditure on family care activities among women. Findings from this study are in line with previous findings by other scholars that gender time distribution in activities is affected by factors that include the status of access to social services such as availability of water, fuel and to improved domestic technology (Harvey and Taylor, 2000; Bittman *et al.,* 2004; Blackden and Wodon, 2006; Johnston *et al.,* 2015). During FGDs a woman said;

> *"The day you decide to collect tape water for family use, you cannot go to shamba or do any other thing which is productive because you spend most of the day hours for collecting clean water. This is because of long distance to the source of water and long que for obtaining some water"* (FGDs, Catherine, Maseyu village-Gwata ward, 30/12/2017).

Moreover, findings showed that women lacked assistance for childcare which women feel that is important especially during performing production work. According to FGDs, childcare assistance services are un-available in the study area. Majority of women are undertaking productive work mostly farming in parallel with child care. During FGDs, a woman from Kibwaya village pointed out that women take care of their children while performing other duties.

> ..*"Women usually take care of their children while farming or doing any other activity" (*FGDs, Mwanahawa, Kibwaya village-Mkuyuni ward, 29/12/2017)

Such finding was reported in other parts of the world (Belanger and Stone, 2008). The study has shown that the large majority of respondents either could not afford hiring a maid or stay with a close person to assist with childcare. The ideology that childcare is a woman's responsibility is deeply rooted in the study area perhaps because majority of rural women do not have formal employment. They are mainly engaged in agricultural activities making it easy to manipulate their time to accommodate both childcare and economic productive activities simultaneously. However, the consequences of this practice are far reaching affecting both the mother's work efficiency and the child's health and education. An important challenge remains to enable women spend more time in productive activities in rural Tanzanian where more than a half (54%) of the labour force relies on women.

Table 4.2: Time spent per day by men and women for economic and care activities (n=323)

Mean time spent on different activities†	n	Mean	SD	Mean diff.	95% CI	p-value
Economic productive work						
Women	323	6.31	2.16	-2.23	-1.51, 0.95	<0.001
Men	323	7.54	2.44			
Care and maintenance work						
Women	251	3.02	1.77	1.20	0.93, 1.47	<0.001
Men	251	1.82	1.94			
Child nursing						
Women	275	3.89	3.73	2.12	1.69, 2.55	<0.001
Men	275	1.78	1.63			

†Average time in hours spent in 12 hours of daytime for four consecutive days of a week

4.4.3 Ability of women to work during pregnancy and after delivery

Results in Table 4.3 show that based on the first and last pregnancy, only about one fifth (20.1 or 21.2%) of the study participants could not work at all for more than two months when pregnant. Nevertheless, after delivery, majority of women (57.4%) were unable to work for more than two months. Moreover, almost similar proportion (57.4%) could not work all after delivery due to among other things, poor health conditions that include body weakness, back/waist pain, stomach-ache, headache and frequent fever. This was not strange since it is common for physical function of a woman to decrease when pregnant. Literature shows that physical function can decline from a mean score of 95.2 prior to pregnancy to 58.1 during the third trimester (Haas, 2005). The prevalence of depressive symptoms rose from 11.7% prior to pregnancy to 25.2% during the third trimester, and then decline to 14.2% during the postpartum period. It can therefore be noted that reproductive responsibilities that include care activities consumes substantial time of a woman.

Table 4.3: Amount of productive time lost during pregnancy and after delivery

Ability to work	Time (Months)	Frequency	%
Unable to work at all during first pregnancy (n=279):	Less than 1	69	24.7
	1 - 2	154	55.2
	More than 2	56	20.1
Unable to work at all during last pregnancy (n=278):	Less than 1	67	24.1
	1 - 2	152	54.7
	More than 2	59	21.2
Unable to work at all after delivery of last born (n=277):	Less than 1	18	6.55
	1 - 2	100	36.1
	More than 2	159	57.4

4.4.4 Time spent to attend ANC and MCH services

Results presented in Table 4.4 show that majority of the women spend 3 hours or more for a single visit to the ANC during pregnancy and MCH clinics for up to five years after delivery. Factors that extend the time that women spend for attending clinic services were reported as inadequate health workers at the clinic centres and inadequate commitment of care providers to attend their clients (FGDs). When pregnant, women attend ANC and MCH clinics more than five times on average (5.4) and make about sixty visits (once every month) until the child is about five years old (4.8 years).

The importance of attaining ANC and MCH services for the mother and children cannot be argued. However, it is important to find out how these services can be effective hence allow women to use their time effectively too. In the study area, it was found that almost all women (> 95%) had to make more than 4 ANC visits and about 60 (57.7 visits on average) to MCH clinics until the child is about 5 years old (4.8 years). This is in line with the recommended attendance to ANCs of between 4-10 visits and up to 60 MCH visits until the child is 5 years old (Simkhada *et al.,* 2008). In the present study, majority of women (64.8%) spend three (3) or more hours for each ANC/MCH visit. The implication for this is that, for any single pregnancy and child care to the age of 5 years, a woman spends a significant amount of time to obtain ANC and MCH services.

Although the ANC and MCH services are unarguably indispensable, the concern remains whether there are factors which unnecessarily extend the time spent in acquiring these services. In the FGDs, participants opined that the small number of care providers in ANC and MCH clinics and poor commitment of the health service providers at the MCH facilities contribute to unnecessary increase of the time that women spend at ANC and MCH centres. A woman from Ludewa village narrated that;

> *"We stay long at the MCH clinic because most of the time service providers at the clinic are busy with personal issues"* (FGDs, Amina,, Ludewa village-Kinole ward, 01/01/2018).

These findings underscore the urgency for improved quality of health care delivery systems particularly in rural settings. Speeding up delivery of such services is important to reduce the time that women spend on reproductive responsibilities which are important, not on to families but also to the community at large. This is in consideration that women need a period of time to rest during pregnancy and after delivery. For example, after delivery, more than a half of the participants (52.2-54.7%) stayed for about 1-2 months without working at all during the first and last pregnancy respectively.

Table 4.4: Results showing the time spent to attend ANC and MCH services

Factor	Response	Frequency	%
Time spent on MCH* clinics (hours) (n=321):	Mean (SD**, Range)	1.7 (0.5, 1 - 2)	
	Less than 3	113	35.2
	3 or more	208	64.8
Number of ANC*** visits when pregnant (n=320):	Mean (SD, Range)	5.4 (1.2, 2 - 8)	
	Less than 4	16	5.0
	4 or more	304	95.0
Maximum age of taking child to MCH clinic (years) (n=321)	Mean (SD, Range)	4.8 (0.8, 1 - 6)	
	Less than 5	17	5.3
	5 or more	304	94.7

*MCH= Maternal and Child Health service; **SD= Standard deviation ***ANC= Antenatal Clinic

4.4.5 Common health problems experienced by women after delivery

Participating women were asked to explain their knowledge and experiences regarding their health status after delivery. Results show that after delivery, many women encounter health problems that hinder their engagement in production. The main health problems experienced by women (and related percentages) are shown in Figure 4.1. Most of the women are affected by general body weakness (46%) and back/waist pain (21.6%). Other health problems affect less than 13% of the study participants.

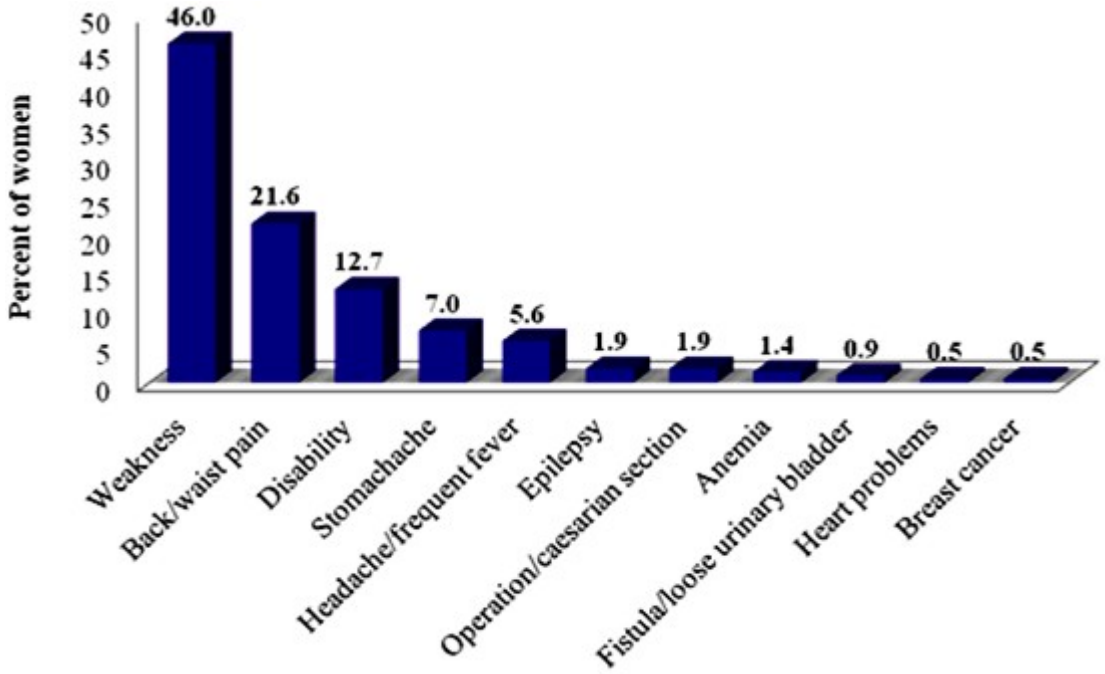


Figure 4.1: Health problems experienced by women after delivery

4.4.6 Women access to childcare assistance and services

Among the 323 respondents, 310 (96.0%) answered to the question on whether they were assisted to care for their children for the last two young children. Of these, only 11 (3.4%) acknowledged to have received reliable assistance for care of the last two children. Of the 11 respondents who received assistance, all of them reported to have received assistance from relatives. When asked if the assistance was timely, 8(72.7%) agreed on the timeliness of the assistance. The major reason for not getting assistance was reported to be

financial constraints to pay for the service; other reasons are shown in Figure 4.2. Respondents who got assistance were asked if a male or female extended the assistance. Out of the 11 respondents, 7(63.7%) responded to the question. Of these 5 (71.4%) were assisted by a female with mean (SD, range) age of 35.6 (33.6, 5-80) years while 2 (28.6%) were assisted by a male with mean (SD, range) age of 11.5 (2.1, 10-13) years.

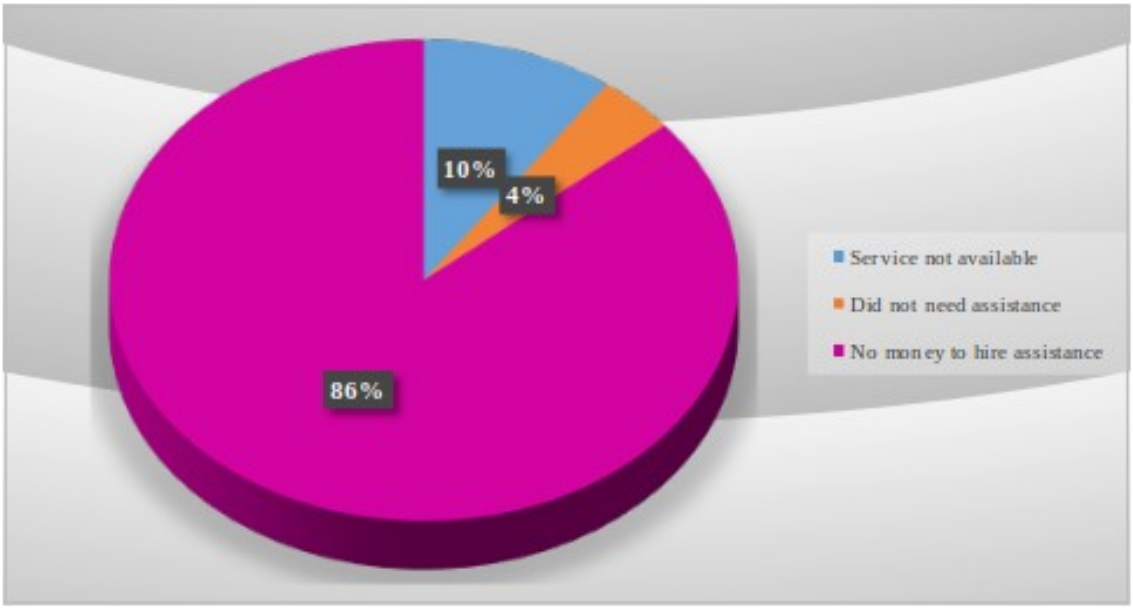


Figure 4.2: Constraints for getting child care assistance

4.5 Conclusions and Recommendations

This study examined the time spent by women and men in households on economic and care activities in Morogoro District, Tanzania. The time was measured within economic productive hours (6.00am-6.0pm) as defined by the study community. Student's t-test revealed statistical difference between the time spent by women and that spent by men in productive and family care activities in the study community. It was found that women spend less time in economic production compared to men ($p<0.01$). Contrary, women spend more time in family care work compared to men ($p < 0.01$). Factors that contribute to extending the time that women spend in care activities included poor access to clean water, lack of electricity and poor technology especially for cooking. It was noted that

women spend 3 hour or more per visit to MCH clinic for themselves when pregnant and for their under five children until children are about five (4.8) years. Factors reported to contribute to increasing the time that women spend for MCH clinic services included small number of clinics staff and poor commitment towards work. Child care services were scarce, only 3.4% were able to get reliable child care services mainly because majority (86.1%) of respondents could not afford or asked for money to pay assistants.

The study therefore concluded that the time spent by women and men in productive and family care activities during economic productive hours differ significantly, women spending less time in economic production and more time in family care activities. Because the time spent by women in care activities was lengthened by poor social services, the study recommends to the Government and non-Governmental development institutions to plan for interventions focusing to reduce the time that women spend in care activities. This can be achieved by improving access to social services that include clean water, electricity and affordable technology especially for cooking. Improving technology for cooking may include construction of improved stoves that are more efficient in cooking, that save time and reduce the quantity of fire wood required per household.

The study also concludes that women spend a substantial time for attaining ANC and MCH services for themselves when pregnant and for their under five children. Given the importance of such service, the Ministry of Health, Community Development, Gender, Elderly and Children is urged to plan for interventions targeting to reduce the time that women spend for attaining ANC and MCH clinic per visit. This can be achieved through ensuring easy access to MCH clinics for rural women and effective performance of clinic staff, which altogether reduce time for obtaining the services. It was also concluded that child care services were scarce in study area resulting to overlapping of child care

productive activities. The study recommends empowering women economically to enable them or household afford to hire the assistants once deemed necessary.

4.6 References

Antonopoulos, R. (2008). The unpaid care work-paid work connection. [https://www. econstor.eu/handle/10419/31491] site visited on 14/2/2019.

Azzarri, C., Carletto, G., Davis, B. and Zezza, A. (2006). Monitoring poverty without consumption data: an application using the Albania panel survey. *Eastern European Economics* 44: 59-82.

Bardasi, E. and Wodon, Q. (2010). Working Long Hours and Having No Choice: Time Poverty in Guinea. *Feminist Economics* 16(3): 45–78.

Belanger, K. and Stone, W. (2008). The social service divide: Service availability and accessibility in rural versus urban counties and impact on child welfare outcomes. *Child Welfare* 87(4): 101-115.

Benesty, J., Chen, J., Huang, Y. and Cohen, I. (2009). Pearson correlation coefficient. In *Noise reduction in speech processing*. Springer, Berlin, Heidelberg. pp 1-4.

Bibler, S. and Zuckerman, E. (2013). The Care Connection: The World Bank and women's unpaid care work in select sub-Saharan African countries (No. 2013/131). WIDER Working Paper.

Bittman, M., Rice, J. M. and Wajcman, J. (2004). Appliances and their impact: the ownership of domestic technology and time spent on household work. *The British Journal of Sociology* 55: 401-423.

Blackden, C. M. and Wodon, Q. (2006). Gender, time use, and poverty in sub-Saharan Africa (73 Edn) World Bank Working Paper No 73. Washington DC.

Blair, S. L. and Lichter, D. T. (1991). Measuring the division of household labour: Gender segregation of housework among American couples. *Journal of Family Issues* 12: 91-113.

Bryman, A. and Bell, E. (2015). Business research methods Oxford University Press, NY City. USA. 640pp.

Budig, M. J. and England, P. (2001). The wage penalty for motherhood. American Sociological Review. pp204-225.

Bynner, J. and Parsons, S. (2002). Social exclusion and the transition from school to work: The case of young people not in education, employment, or training (NEET). *Journal of Vocational Behaviour* 60: 289-309.

Cawthorne, A. (2008). The straight facts on women in poverty. *Centre for American Progress* 8: 1-3.

Chant, S. (2012). The disappearing of smart economics: The World Development Report 2012 on Gender Equality: Some concerns about the preparatory process and the prospects for paradigm change. *Global Social Policy* 12: 198-218.

Collins M. (2003). Head-driven statistical models for natural language parsing. *Computational Linguistics* 29: 589-637.

Coverman, S. (1983). Gender, domestic labour time, and wage inequality. *American Sociological Review* 1983: 623-637.

De Weerdt, J. (2010). Moving out of poverty in Tanzania: Evidence from Kagera. *The Journal of Development Studies* 46: 331-349.

FAO (2014). Tanzania Country Profile: Gender Inequalities in Rural Employment in Tanzania Mainland, an Overview. Rome, Italy: Food and Agriculture Organization.

Feinstein, S., Feinstein, R. and Sabrow, S. (2010). Gender inequality in the division of household labour in Tanzania. *African Sociological Review* 14(2): 98-109.

Ferrant, G. I., Pesando, L. M. and Nowacka, K. (2014). Unpaid Care Work: The missing link in the analysis of gender gaps in labour outcomes. Issues Paper, OECD Development Centre, [www.oecd.org/dev/developmentgender/ unpaid care_ work.pdf] site visited on 12/02/2019.

Ferreira, F. and Ravallion, M. (2009). Poverty and inequality: The global context. The Oxford Handbook of Economic Inequality, Oxford: Oxford University Press [https://blogs.commons.georgetown.edu/economicsofpoverty/files/2015/12/ Poverty-and-inequality-global_Chapter-24.pdf] site visited on 17/12/2019.

Galtry, J. (2000). Extending the 'bright line' feminism, breastfeeding, and the workplace in the United States. *Gender and Society* 14: 295-317.

Godoy, L. (2004). Understanding poverty from a gender perspective (52 Edn) United Nations Publications. Geneva.11pp.

Haas, J. S., Jackson, R. A., Fuentes-Afflick, E., Stewart, A. L., Dean, M. L., Brawarsky, P., and Escobar, G. J. (2005). Changes in the health status of women during and after pregnancy. *Journal of General Internal Medicine* 20(1): 45-51.

Harvey, A. S. and Taylor, M. E. (2000). Time use. *Designing Household Survey Questionnaires for Developing Countries: Lessons* 15: 249-272.

Hundley, G. (2000). Male/female earnings differences in self-employment: The effects of marriage, children, and the household division of labour. *ILR Review* 54: 95-114.

Jolly, S., Griffith, K. A., DeCastro, R., Stewart, A., Ubel, P. and Jagsi, R. (2014). Gender differences in time spent on parenting and domestic responsibilities by high-achieving young physician-researchers. *Annals of Internal Medicine* 160: 344-353.

Kan, M. Y., Sullivan, O., and Gershuny, J. (2011). Gender convergence in domestic work: Discerning the effects of interactional and institutional barriers from large-scale data. *Sociology* 45(2): 234-251.

Kes, A. and Swaminathan, H. (2006). Gender and time poverty in sub-Saharan Africa." In; Blackden, C. M. and Wodon, Q. (eds.), *Gender, Time Use and Poverty in Sub-Saharan Africa.* Working Paper No. 73. World Bank, Washington, DC.

Komatsu, H., Malapit, H. J. and Theis, S. (2015). How does women's time in reproductive work and agriculture affect maternal and child nutrition? Evidence from Bangladesh, Cambodia, Ghana, Mozambique, and Nepal. (No. 1486). International Food Policy Research Institute (IFPRI).

Krueger, R. A., Donner, J., Kirsch, S. and Maack, J. N. (2001). Designing and Conducting Focus Group Interviews. [http://citeseerx.ist.psu.edu/viewdoc/ summary? doi=10.1.1.116.5134] site visited 12/06/2018.

Kuhhirt, M. and Ludwig, V. (2012). Domestic work and the wage penalty for motherhood in West Germany. *Journal of Marriage and Family* 74: 186-200.

Leavens, M. K. and Anderson, C. L. (2011). Gender and Agriculture in Tanzania. EPAR Brief No. 134. Seattle, USA: Evans School Policy Analysis and Research, University of Washington. 40pp.

Lusambo, L. P. (2016). Households' income poverty and inequalities in Tanzania: Analysis of empirical evidence of methodological challenges'. *Journal of Ecosys Ecograph* 6(2): 183-193.

MoHCDGEC, T. and MoH, Z. (2015). Tanzania National Bureau of Statistics, Zanzibar Office of Chief Government Statistician, and ICF. (2016). Tanzania demographic and health survey and malaria indicator survey 2015-2016.

Morgan, D. L. (1993). Qualitative content analysis: a guide to paths not taken. *Qualitative Health Research* 3(1): 112-121.

Mushi, V. A., and Mwakasangula, E. (2008). *Strategies to Enhance Girls' Enrolment and Participation in Secondary Education: A Case of Morogoro Municipality in Tanzania*. Mzumbe University. 23pp.

National Bureau of Statistics (NBS) [Tanzania] and ICF Macro. (2011). Tanzania Demographic and Health Survey 2010. Dar es Salaam, Tanzania: NBS and ICF Macro.

Palacios-Lopez, A., Christiaensen, L. and Kilic, T. (2015). How much of the labour in African agriculture is provided by women? World Bank Publications. Washington DC. [agris.fao.org ›] site visited on 12/09/2019.

Pressman, S. (2003). Feminist explanations for the feminization of poverty. *Journal of Economic Issues* 37: 353-361.

Rabiee, F. (2004). Focus-group interview and data analysis. *Proceedings of the Nutrition Society* 63: 655-660.

Rehema, M., Verhan, B., Emmanuel, M., and Douglas, M. (2014). Effects of initiation rituals to primary and secondary school girls in Morogoro rural district. *International Journal of Innovation and Scientific Research* 6(1): 9-17.

Renner, M. and Taylor-Powell, E. (2003). Analyzing qualitative data. *Programme Development and Evaluation, University of Wisconsin-Extension Cooperative Extension*. pp1-10.

Ritchie, J., Lewis, J., Nicholls, C. M. and Ormston, R. (2013). *Qualitative Research Practice: A Guide for Social Science Students and Researchers.* Sage Publications. London. 449pp.

Sachs, J. D. (2012). From millennium development goals to sustainable development goals. *The Lancet* 379: 2206-2211.

Shirley, C. and Wallace, M. (2004). Domestic work, family characteristics, and earnings. *The Sociological Quarterly* 45: 663-690.

Simkhada, B., Teijlingen, E. R., Porter, M. and Simkhada, P. (2008). Factors affecting the utilization of antenatal care in developing countries: systematic review of the literature. *Journal of Advanced Nursing* 61: 244-260.

Skopek, J., and Leopold, T. (2019). Explaining gender convergence in housework time: Evidence from a cohort-sequence design. *Social Forces* 98(2): 578-621.

Thiessen, V. and Nickerson, C. (1999). *Canadian Gender Trends in Education and Work.* Applied Research Branch. Hull, Quebee, Canada. 68pp.

URT (2016). National Five-Year Development Plan 2016/17-2020/21. Ministry of Finance and Planning. Dar es Salaam, Tanzania.

Waldfogel, J. (1997). *The Effect of Children on Women's Wages.* American Sociological Review. 209-217pp.

CHAPTER FIVE

Major Findings, Conclusions and Recommendations

5.1 Summary of Major Findings

This study intended to examine the impact of women's socio-demographic and reproductive factors on household SES in rural settings of Morogoro District, Tanzania. Specifically, the study intended to (i) analyze the relationship between women's socio-demographic factors with household's SES in rural settings (ii) determine the association between selected reproductive factors of women and household SES in rural settings, and (iii) compare time spent by women and men in households' economic and care activities during economic production hours. Three manuscripts were developed based on the study objectives. The manuscripts formed chapters two, three and four of this thesis, respectively. The main findings and conclusions for each manuscript are presented below.

5.1.1 The relationship between women's socio-demographic factors and household's socio-economic status

In objective one (Chapter two), the study sought to investigate the relationship that exist between women's socio-demographic factors and SES of households in Tanzanian rural context. Specifically, the study aimed to explore the association between selected women socio-demographic factors (age, education level, and marital status, ward of residence, sex of household head, household size and the age composition of households with SES). Data analysis involves the use of descriptive statistics, content analyses and binary logistic regression model which was used to determine the associations between study variables. The study found that about four out of ten (40.6%) of the respondents did not attain primary school education implying low education attainment among women of reproductive age (15-49 years) in the study community. Reasons for low education were

mentioned as gender discrimination, poverty and culture of matrilineal society, which encouraged early girls' marriage, bearing children and extending the clan. However, based on presented current data in section 2.4.1 and FGDs opinions, the community is becoming aware that the situation has changed since more girls are currently enrolled in schools for education.

As hypothesized that women's socio-demographic factors have no significant relationship with household SES in rural settings, results from binary logistic regression showed that the level of education, marital status, sex of household head and number of household members had no relationship with SES. For education, findings from this study contradicted with some findings from other scholars as shown in section 2.4.4. However, findings from this study are supported by other scholars as shown in the same section whereby lack of association between education and SES was attributed with low level of education among respondents, which was suggested to have no connection with economic productions termed as qualification mismatch. In addition, there was no substantial effect on SES with regard to low wages mainly gained by working on farm, which is regarded as 'non-return' gap. An example given was casual labour which is common in rural areas but associated with low earnings that is not likely to make significant difference on wealth accumulation since it mainly serves for subsistence.

Unlike the hypothesis stated above, the age of a woman and ward of residence and having children under five years of age showed association with household SES. Binary logistic regression analyses revealed that women's age and living in an area that is easily accessible by road were positively associated household SES. Women older than 35 years were more likely to belong to the higher (medium-high) household SES compared with those 35 years or less ($p<0.05$). This relationship between age and SES was attributed

with explanation that young women were likely to come from young households which difficultly access the means of productions such as financial capital and land. The findings suggest for special attention to be given to young women for economic empowerment so they can contribute to rising SES of households in which they are residing. Residing in Gwata ward that was more accessible was associated with slightly more than four times likely to attain higher (medium-high) SES compared to those who were residing in Kinole or Mkuyuni ($p<0.01$). More accessibility was attributed with possibility to engage in a diverse economic activity. This was shown by proportions of respondents engaged in trading whereby in addition to farming, 23.8% of respondents from Gwata and 6% from Mkuyuni or Kinole were engaged in trading. Households with under five years children showed less likelihood to attain higher (medium-high) SES ($p<0.05$). Being with under five years children is attributed with more care tasks that deny women's time to engage in productive activities hence affecting productivity. In addition, being with children under five years was related to effect on microeconomic behaviors such as labour supply or expenditure decisions.

5.1.2 The relationship between selected reproductive factors and household SES

In objective two (Chapter three), the study intended to examine the relationship between selected women reproductive factors and SES in Morogoro District, Tanzania. The importance of this objective emanated from the theoretical argument that parenthood affect participation of women in economic productive activities since they have to take care of their children resulting to poor SES (Pressman, 2003). Hence, this objective intended to scrutinize factors pertained to parenthood in relation to SES of a household at which respondents were residing. Specifically, the study intended to (i) determine the association between the number of children per woman and SES, (ii) study the association between birth interval and SES (iii) assess the association between unplanned pregnancies

and SES in the study area, (iv) analyze the association between the age at first pregnancy and SES. Binary logistic regression was used to test the associations between the study variables. Estimation of study variables was performed using descriptive statistics and binary logistic regression. Content analysis was used to analyze qualitative data.

Unlike the hypothesis, which stated that in rural settings women's reproductive factors are not associated with the corresponding household SES, binary logistic regression showed that the number of children desired by a woman and the age at first pregnancy had association with household SES. On the other hand, in line with the above stated hypothesis, interval of last two births and unplanned pregnancies did not show association with household SES. Women who desired larger numbers of children more than five (5) were less like to be in higher SES ($p<0.05$) compared with those who desired five children or less. Larger number of children was attributed with early conception hence early parenthood and close spacing of children which altogether compromise economic productivity.

Women who conceived at 19 years or older were more likely to belong to households with higher SES ($p<0.05$) compared with those who conceived at 18 years or younger. Teenage pregnancies and early motherhood were closely related with discontinued education, reduced employment opportunities, un-stable marriages, low incomes and heightened health and developmental risks hence poor SES. Nevertheless, it was found that more than a half (56.5%) of study participants conceived for the first time at the age of 18 years or below. Factors contributing to early pregnancy included early marriages, poor household economic capability hence failure to have developmental programs for children including girls, lack of economic activities and exposure to sexual matters by education system.

5.1.3 Time spent by women and men in households on economic and care activities

Objective three (Chapter four) of the study focused on calculating time spent by women and men in households on economic and care activities. The rationale for this objective raised from the theoretical argument that women's productive time is spent in care activities hence poor SES (Pressman, 2003). The study intended to compare time spent by women and men in on households' economic and family care activities. Specifically, the study intended to (i) compare time spent by men and women for economic productive work (ii) determine the amount of time spent by women care and family maintenance work, (iii) determine time spent by women and men in child nursing. Time use was assessed during economic production time (6.00am-6.00pm) as defined by the study community. While Students' T-test was used to compare the time spent in productive and reproductive activities, descriptive statistics and content analyses were used accordingly to generate quantitative and qualitative results respectively. Main findings were as follows:

Unlike the hypothesis which states in this study that time spent by women in household's productive and care activities during economic production hours in rural areas does not differ significantly from that of men, Student's t-test results showed that there is significant difference between time spent by women and men to perform economic productive work, care and family maintenance work as well as child nursing. Women spend 2.23 hours less time a day in economic production work, 1.20 hours more time per day in care and maintenance work as well as 2.12 hours more time for child nursing. In all the three cases, the difference of mean time was significant at $p < 0.01$. Main factors that lengthen the time spent in care activities were reported in the FGDs as access to water supply, absence of electricity power, lack of reliable assistance for childcare, poor technology of cooking stoves.

Women spend additional time for obtaining MCH and ANC services, making 5.4 and 57.7 visits on average respectively for themselves and their 'under five' children whereby every visit they spend about 3 or more hours. According to FGDs, factors contributing to the amount of time were small number and poor commitment of clinic staff at the MCH facilities. Hardly women receive reliable assistance for childcare mainly due to lack money to hire assistants

5.2 Conclusions

Based on findings as summarized in section 5.1, the following conclusions were drawn:

i. The study concludes that woman's age influences positively the SES of rural households, being young increase vulnerability to belong to poor households.

ii. It is also concluded that living in area accessible by road is important for improving socio-economic development since it promotes involvement of women in both agricultural and non-agricultural economic activities consequently accelerates rising household SES.

iii. The study further concluded that having children under five years, wishing to get relatively many children (more than 5) and conceiving while young (18 years or younger) impact negatively attainment of higher SES.

iv. It was concluded also that the time spent by women and men in productive and care activities during economic productive hours differ significantly, women spend less time in economic production and more time in care activities partly because of poor supply of water services, lack of electricity, poor cooking technology and lack of assistance for care activities.

5.3 Recommendations

Based on the conclusions drawn from this study as presented in section 5.2 above, the following recommendations were made:

i. The Government and non-Government development agencies should empower young women economically so as to increase their ability in contributing and improving SES of their households. This can be achieved through training women on income generating activities and facilitating them to access capital including using local mobilization of productive resources. This will increase participation of young women particularly those aged 35 year and below to farm and off farm economic activities consequently increase contribution to improving SES of their households of their residence.

ii. Concerning accessibility, the study recommends to the central and local government to improve the roads by paving them and improve feeder roads hence increase accessibility, connectivity and transportation thus promote engagement of women to a diverse (farm and off-farm) economic activities consequently improve SES of households.

iii. Relevant Ministry (Ministry of Health, Community Development, Gender, Elderly and Children) and stakeholders (NGOs and CBOs) are urged to join effort in promoting reproductive health education thus reduce occurrence of early pregnancies. Likewise, development partners should sensitize rural communities about gender shearing of responsibility such that male partners and other household members assist women to take care young children so that they (women) increase their participation in economic activities which eventually enhance their contribution to household SES.

iv. The Government and non-Governmental development institutions should plan and implement interventions focusing to reducing the time that women spend in care activities especially during productive hours by improving access to social services that include clean water, electricity and affordable technology especially for cooking. This can include construction of improved stoves that increase efficiency in cooking, but easily affordable, save time and reduce the quantity of fire wood required per household.

v. The Ministry of Health, Community Development, Gender, Elderly and Children is urged to improve ANC and MCH service in rural areas through ensuring both easy access to the services and efficiency of clinic staff thus reduce the time that women spend for acquiring related services.

5.4 Contribution of the Study to the Theory

This study contributes to the existing knowledge about the relationship between women and poor SES. Based on the theory that guided the study, the Gender Poverty Gap theory (Pressman, 2002) and other related literature, the study adds to the existing knowledge by showing that the relationship between socio-demographic factors and SES differ with communities. While some factors such as the level of education, marital status, sex of household head and number of household members comply with the theory (Pressman, 2002) by not showing significant relationship with SES; woman's age, area (ward) of residence and having children under five years of age showed different degree of relationship with SES. Therefore, this study depicts that apart from the United States where the Gender Poverty Gap theory was developed, the theory is applicable in other areas of the World like Tanzania specifically in rural settings. However, the study emphases the importance to test the theory in real environment since there might be some

variations in relation to socio-demographic factors with regard to SES. This implies that the relationship between socio-demographic factors and SES can vary depending on contextual situation. Conclusively, it can be reported, based on the factors summarized in this paragraph, that in this study some factors partly agrees with the theory “the Gender Poverty Gap” by Pressman (2002) while other factors do not comply with the theory.

The feminist explanation of the Feminization of Poverty theory (Pressman, 2003) suggests that parenthood responsibilities take away economic productive time of women hence encourage poor SES among women. This study has gone beyond the theory by producing empirical explanation on specific selected factors pertained to “parenthood”. The specific factors studied are number of children, birth interval, un-planned pregnancies and age at first conception. The factors were studied for specific community and the link between the selected factors with household SES was identified. Similarly, this study has produced empirical explanation that early pregnancies and relatively lager number of children have negative influence to SES. Contrary to the theory, the study through multivariate analysis has shown that birth interval and unplanned pregnancies do not relate with SES in study community.

The study has also confirmed that the feminist explanations of the Feminization of Poverty theory is applicable in Tanzanian rural environment whereby women spend a substantial economic productive time performing reproductive activities specifically domestic work that include family care and maintenance as well as child nursing. In addition, women attend health matters for themselves when pregnant and their children especially under five years of age. The confirmation of this theoretical proposition is based on the fact that the analysis of time use in productive and care activities was done during economic production time hours (6.00 am-12.00pm) as defined by the study

community. It is therefore evident that the time spent in reproductive related activities during the identified time range takes away women's potential time for economic productions.

Beyond the feminist explanations for the Feminization of Poverty, the study identified factors contributing to increase the time that women spend in household and care activities hence pin point specific entry points for interventions that intend to reduce the time that women spend in family care and maintenance activities. Reducing the time spent in non-productive work will contribute to increase women's productivity hence promote household SES in rural Tanzania. Therefore, this study is in support to the feminist explanation of the Feminization of Poverty theory (Pressman, 2003) that women spend economic time by performing reproductive work, which could otherwise be spent for production.

5.5 Policy Contribution

Findings from the study point out priority areas for policy planning with regard to promoting participation and contribution of women to economic development. The study informs policy makers about the importance to put in place conditions and rules and reinforce their implementation to counteract early pregnancies and early parenthood as closely related factors that restrains attainment of better SES in rural areas. The study has provided vivid evidence to policy makers to develop policies that intend to improve productivity of women in rural areas that it is imperative to improve social services that include making available water for community use, reliable and affordable power sources, introduction of cheap but improved cooking technologies, increasing access to childcare services as well as improving access to health care services particularly MCH. These

measures will greatly reduce women's time unnecessary spent for obtaining such services thus possibly making use of that time for economic productions.

5.6 Areas for Future Studies

The following are the areas suggested for further research:

i. This study found that women economic productions and childcare overlaps. The extent to which such child care practice affects child learning process particularly with regard to formal education is not reported. This area needs to be investigated to establish the relationship between child care practices and the resulting wellbeing of an individual that include education attainment.

ii. This study noted higher rate of early pregnancies which has negative implication to household SES. The study community pointed out that the reproductive health education given at schools acts as a catalyst or factor for girls to engage in sexual practices. At the same time, the school girls ignore traditional training concerning reproductive health issues hence end up getting pregnancy at young ages. This area needs to be studied so as to establish a clear gap between formal and traditional reproductive health education in order to come up with strong recommendation that can bring together efforts of the community and education system in reducing early pregnancies.

iii. This study found that women spend substantial time at MCH clinics during economic production hours (6.00am to 6.00pm). Women reported that health workers had a role in extending time stayed at the clinics. However, this study did not focus on health workers to solicit their views concerning their work. The study therefore recommends research to be conducted in this area to focus on health

workers so as to report about factors affecting their performance and motivation for their work.

APPENDICES

Appendix 1: Questionnaire

SOKOINE UNIVERSITY OF AGRICULTURE

Study about women's roles, demographic characteristics and household socio-economic status

Questionnaire No: _____

Introduction

These questions intends to guide collection of information about women demographic characteristics, reproductive roles and household socio-economic status of women of 15-49 years of age. The study intends to explore the relationships between women demographic characteristics, reproductive factors and household welfare. Furthermore, the study intends to explore the extent to which productive time is lost through performing reproductive works such as cooking, child care and other family care responsibilities. Also, the study intends to know about access to child care assistants by women. This study is important because it will guide government and non-governmental institutions aiming to improve household SES in rural. The information which is collected will not be implicated with any one and will be confidential.

A. BACKGROUND INFORMATION AND DEMOGRAPHIC CHARACTERISTIS

1. Name……..Sex……..(Female= 1 Male = 2)
   Age…… (years) Ward……..Village…….…..

2. Marital status
   1) Married
   2) Living together/cohabit
   3) Single
   4) Divorced
   5) Widowed/widower
   6) Separated

3. Highest education attained

    1) Not attended school
    2) Primary
    3) Secondary
    4) College
    5) University

4. Did you complete your studies? **(**Yes = 1 No= 0)

5. If you did not complete studies, number of years attended school

    (1) (2) (3) (4) (5) (6) years

6. If you did not complete studies, what were the reasons?

    1) Economic reasons
    2) Own decision(voluntary)
    3) Parents' decision
    4) Pregnancy
    5) Other reasons, mention:

B. HOUSEHOLD CHARACTERISTICS

7. How many are you in your household? ☐

8. Household head

    1) Female
    2) Male

9. **Please tell me about your family structure (Sex and Age)**

S/N	Female = 1 Male = 2	Age (Years)
1		
2		
3		
4		
5		
6		
7		
8		

10. What is your main household economic activity?

1) Crop farming only
2) Crop farming and livestock keeping
3) Business/entrepreneurship
4) Mining
5) Fishing
6) Other activities (mention)…….

11. What are other household economic activities?

1) Crop farming only
2) Crop farming & livestock keeping
3) Business/entrepreneurship
4) Mining
5) Fishing
6) Other activities (mention)……..

C: REPRODUCTIVE FACTORS

12. How many children do you have? ☐
13. What is the approximate interval of the first two births? (years) ☐
14. What is the interval of the last two births? (Years) ☐
15. How many children did you wish to have ☐
16. How many times did you experience unplanned pregnancy? ☐
17. How many times did you experience unplanned birth ☐
18. How old were you when you conceived for the first time? (Years)
19. Age at first pregnancy; did you conceive voluntary?

1) Yes
2) No

20. If not, what were the reasons?

1) Getting marriage at that age
2) Lack of reproductive health knowledge
3) Poor economic status
4) Being iddle

21. Did unplanned pregnancy affect your productivity or development plans?

1) Yes
2) No

22. If Yes, how?

1) Termination of studies
2) Affected farming
3) My business/trading was affected
4) Affected schooling of my children

D: TIME SPENT ON ECONOMIC, HOUSEHOLD AND CARE ACTIVITIES

23. How long (hours) does it take you to do the following work during day time (6.00AM - 12.00 PM)

No	Activity	Day 1: Monday	Day 2: Tuesday	Day 3: Wednesday	Day 4: Thursday
		Hours	Hours	Hours	Hours
1	Productive activities				
2	Family care and maintenance				
3	Child nursing				

Key:

1) Productive activities: Agriculture, business/trading, mining, bee keeping, fishing, casual labor, animal husbandry
2) Family care and maintenance: Food preparation, washing clothes, looking after children, educating children, forging food for family
3) Child nursing Sitting with a baby and breast-feeding

24. **If married or cohabited, for how long does the male partner perform the following activities during day time (6.00 AM - 6.00 PM)**

No	Activity	Day 1: Monday	Day 2: Tuesday	Day 3: Wednesday	Day 4 Thursday
		Hours	Hours	Hours	Hours
1	Productive activities				
2	Family care and maintenance				
3	Nursing				

I. TIME SPENT ON BIOLOGICAL REPRODUCTIVE ACTIVITIES

25. When pregnant, do you engage fully in economic productive work as not pregnant?

Yes = 1 No= 0

26. If not, when pregnant, what makes you miss working time?

1) Ill health
2) Just feel tired
3) Advised by Doctor (need to rest)

27. During your first pregnancy, for how long (estimation) you were not able to work completely?

1) About a week
2) About a month
3) More than a month
4) About two months
5) More than two months

28. During your last pregnancy, for how long (estimation) you were not able to work completely?

1) About a week
2) About a month
3) More than a month
4) About two months
5) More than two months

29. After delivery of your last-born, for how long did you stay without working at all?

1) About a week
2) About a month
3) More than a month
4) About two months
5) More than two months

30. When you are pregnant or with a baby, how much time do you spend per trip to attend clinic? ☐

31. How many times do you attend clinic before delivery? ☐
32. For how long (up to what age) do you take your child to clinic? ☐
33. Did pregnancy affect your productive activities?

Yes = 1 No = 0

33. If Yes, how?
    1) Physical disability.....
    2) Body weakness.....

E: SOCIAL SUPPORT TO WOMEN FOR CHILD-CARE

34. What kinds of assistance/ support do exist in the society for taking care children under five years?
    1) Nursery Schools
    2) Private society members provide service
    3) None

35. When your last two children were young, did you get any assistance to care your children hence allow you to carry out economic/ productive activities efficiently?

Yes = 1 No = 0

36. If yes, what kind of assistance?
    1) Relative was caring my child
    2) Hired a person to care my children
    3) Children day care/ nursery school
    4) Friends provided to me free production labor
    5) Friends provide payable production cheap labor

37. Did you access assistance whenever you needed it?

Yes= 1 No = 0

38. If no assistance, what were the reasons?
    1) No relative to assist
    2) No money to hire or par for the services/assistance
    3) Don’t need assistance

4) No assistance exist in our society

39. If relative, description? (gender and age)
    1) Male: Age …….Years
    2) Female: Age……Years
40. What do you think would help you better in caring your children/baby so that you became more economically productive?
    1. If there could be reliable care service for my children/baby
    2. If there could be children care center close to my residence
    3. If there could be affordable children care service
    4. Other: Mention…….

F: HOUSEHOLDS' SOCIO ECONOMIC STATUS (ASSETS OWNERSHIP)

41. Are you living in your own house or rented? Own = 1 Rented = 2

42. **Household assets index**

Item		**Status**	
	1	**2**	**3**
Household floor	Cement/tiles floor	Smoothened with local material	Earth floor
House wall	concrete or burnt bricks	Made of mad brick	Mad wall
House roofing material	iron sheet	Local/thick material	Thatch roofing
Toilet wall	Burnt brick wall	Mad wall	No toilet
Toilet roofing:	Iron sheet	Thatch	unroofed

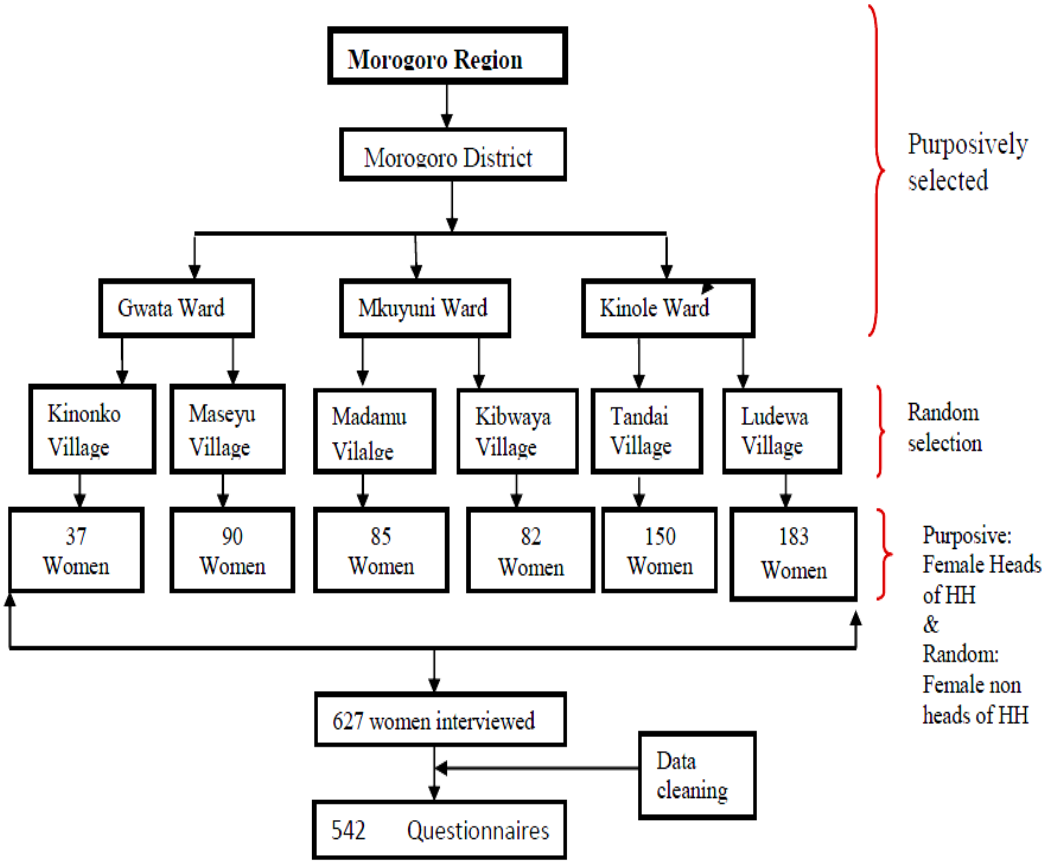
43. Possession of durable and semi-durable consumer goods

	Goods	**Have=1**	**Do not have= 0**
1.	Motor car/Track		
2.	Motor cycle		
3.	TV		
4.	Radio		
5.	Bicycle		
6.	Generator		
7.	Solar panel		

Appendix 2: Focus Group Discussion Guiding Questions

	Discussion Issue	**Guiding questions**
	Manuscript one	
1	Low education level among women	i. What are contributing factors? ii. Why school drop out? iii. Is there any cultural reason? What are they?
2	Unstable marriage	i. What contributes to separation of couples? ii. What are causing factors?
4	Association between demographic factors and SES	Why do you think in this area, education seems to have weak association with household SES?
	Manuscript Two	
5	Unplanned pregnancies	i. What do you think are the causes of unplanned pregnancies? ii. What are the cusses of early/teenage pregnancies?
	Manuscript Thee	
8	Determinants of time spent by women in household/family care activities	i. What increases time that women spend in household work? ii. How easy or difficult are the following activities and reasons? • cooking • collecting firewood • fetching clean water
9	Time spent for MCH clinic services	i. What contribute to increasing the time that women spend for obtaining service at MCH clinics? ii. What do you think if improved can reduce the time that women spend at MCH clinics for service?

Appendix 3: Sampling procedure



Appendix 4: Household Asset Assigned Scores

Item	Code	Score
Ownership of house	Have	1
	Do not have	0
Household floor/	Cement/tiles floor	1
	Smoothened with other material	0.5
	Earth floor	0
House wall	concrete or bricks	1
	Made of mud	0.5
	Thatch	0
House roofing material	Iron sheet	1
	Thatch roofing	0
Toilet wall	Burnt bricks/blocks wall	1
	Mud wall	0.5
	Thatch/plastic	0
Toilet roofing material	Iron sheet	1
	Thatch	0.5
	Not roofed	0
Have toilet	Yes	1
	No	0
Motor car/track	Have	1
	Do not have	0
Motor cycle	Have	1
	Do not have	0
Television	Have	1
	Do not have	0
Radio	Have	1
	Do not have	0
Bicycle	Have	1
	Do not have	0
Generator	Have	1
	Do not have	0
Solar panel	Have	1
	Do not have	0
	MAXIMUM SCORE	**14**
	MINIMUM SCORE	**0**
	MEDIAN SCORE	**3**

Appendix 5: Socio-economic Groups' Characteristics

SES groups	Number of HH in a SES group	Proportion of HH (%)	SES characteristics
Low	232	42.7	They own a house or house belongs to their relatives, the houses are constructed by mud or mud bricks and roofed by, grass (thatched roofing). The walls of the toilets are constructed by thatch or mud wall and some of the study participants have no toilets; they do not possess assets such as a car, television, motor bicycle, bicycle, solar panels.
Medium	217	40.1	They own houses with walls constructed by mud and some of them the house walls are constructed by concrete. The houses are roofed by iron sheets (majority) and few of them roofed with grass (thatched). All of them have toilets with walls constructed by mud or mud bricks, few of them have toilets constructed with grass and thatched roofing. Other assets: They have no motor bicycle, majority have radio, the possess bicycle, they neither have generator nor solar panels.
High	93	17.2	They own houses most of them the house walls are constructed by concrete or bricks, few houses are constructed by mud or mud bricks. The houses are roofed with iron sheets. They all have toilets and the toilets are roofed by iron sheets. Few of them have toilets un-roofed. Other assets: They have no cars, few of them have motor bicycle, most of them have bicycle, they have no televisions, almost all have radio, and they neither have generators nor solar panels.
Total	**542**	**100.0**	