SOCIAL-DEMOGRAPHIC FACTORS ASSOCIATED WITH UNDER-FIVE MORTALITY IN WESTERN UGANDA

BY
MBABAZI SULAINA RANSOM
15/U/7572/PS
(BPS III)

A DISSERTATION SUBMITTED TO SCHOOL OF STATISTICS AND PLANNING IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN POPULATION STUDIES OF MAKERERE UNIVERSITY

JUNE 2018
The dissertation has been submitted with the approval of the internal supervisor.

Signature

[Signature]

Date 11/8/2018

Dr. Martin Mbonye

College of Business and Management Sciences

School of Statistics

Makerere University.
DECLARATION

I Mbabazi Sulaina Ransom declare that the content of this Dissertation is my original work and a true reflection of the research I was involved in. It has never been submitted to any other institution of higher learning for any award.

Sign .................................. Date 15th, 06/10/2013

Mbabazi Sulaina

15/U/7572/PS
DEDICATION

I dedicate this research report to my beloved parents Mr. Turyamureeba Omar Okenny and Mrs. Banyenzaki Mayie for grooming me and supporting me to reach this great milestone in all ways financial and spiritual.
I start by thanking the Almighty God for the gift of life and wisdom from the time I appeared on this planet up to now.

I extend my heartfelt appreciation to my supervisor Dr. Martin Mbonye for the valuable time and guidance he has rendered to me to ensure that this research comes to a success. Am so humbled and may the Almighty God bless you abundantly.

My beloved parents for fulfilling their responsibility and giving me all the support I needed throughout my studies.

I also thank my friends Nansiiko Mariam, Namuleme Ruth, Ojok Andrew and Musaazi Hamza for the team work spirit we exhibited during the pursuit of our courses at the great Ivory tower.
TABLE OF CONTENTS

APPROVAL ................................................................................................................... ii
DECLARATION ........................................................................................................... iii
DEDICATION ........................................................................................................... iv
ACKNOWLEDGEMENT ........................................................................................ v
TABLE OF CONTENTS .......................................................................................... vi
LIST OF TABLES ........................................................................................................ viii
LIST OF FIGURES ..................................................................................................... ix
LIST OF ABBREVIATIONS ....................................................................................... x
ABSTRACT ................................................................................................................. xi
CHAPTER ONE .......................................................................................................... 1
INTRODUCTION .......................................................................................................... 1
1.1 Introduction ......................................................................................................... 1
1.2 Problem Statement ............................................................................................ 2
1.3 Study Objectives ............................................................................................... 3
1.3.1 Main Objective of the study ........................................................................... 3
1.3.2 Specific Objectives ....................................................................................... 3
1.4 Research Hypothesis ......................................................................................... 3
1.5 Significance of the study .................................................................................. 3
1.6 Area of study ..................................................................................................... 4
1.7 Scope of study .................................................................................................... 4
1.8 Conceptual Frame work ................................................................................... 5
CHAPTER TWO ........................................................................................................... 6
LITERATURE REVIEW ............................................................................................. 6
2.1 Introduction ......................................................................................................... 6
2.2 Age of the mother and under five mortality ...................................................... 6
2.3 Marital status of the mother and under-five mortality ........................................ 6
2.4 Education level of the mother and under-five mortality .................................... 7
2.5 Residence of the mother/household and under-five mortality ......................... 8
2.6 Wealth Index and under-five mortality ............................................................. 9
2.7. Birth order and under-five mortality ................................................................. 10
2.8. Occupation of the mother and under-five mortality ............................................ 10
2.9. Birth interval of the child and under-five mortality .............................................. 10

CHAPTER THREE .................................................................................................... 11
METHODOLOGY ...................................................................................................... 11
3.1. Introduction ......................................................................................................... 11
3.2. Study Design ....................................................................................................... 11
3.3. Target Population/Sample size ........................................................................... 11
3.4. Sample size determination .................................................................................. 11
3.5. Study Area .......................................................................................................... 12
3.6. Data source ......................................................................................................... 12
3.7. Study Variables/Description of study variables .................................................... 12
3.8. Data Analysis ...................................................................................................... 13
3.9. Ethical considerations ......................................................................................... 14

CHAPTER FOUR ..................................................................................................... 14
RESEARCH FINDINGS, INTERPRETATION AND DISCUSSIONS................................. 14
4.1. Introduction ......................................................................................................... 14
4.2. Descriptive statistics of the variables ................................................................... 15
4.3. Relationship between demographic, social-economic factors and under five mortality ...... 19
4.4. Regression Analysis .......................................................................................... 22

CHAPTER FIVE ..................................................................................................... 24
SUMMARY OF THE RESEARCH FINDINGS, CONCLUSIONS AND RECOMMENDATIONS ......................................................................................................................... 24
5.1. Introduction ......................................................................................................... 24
5.2. Summary of findings .......................................................................................... 24
5.3. Conclusions ........................................................................................................ 25
5.4. Recommendations ............................................................................................. 26

REFERENCES: ....................................................................................................... 27
LIST OF TABLES

Table 1: Descriptive statistics of respondents’ characteristics .......................................................... 15

Table 2: Relationship between demographic, social-economic factors and under five mortality in western Uganda ........................................................................................................... 19

Table 3: Regression analysis ................................................................................................................. 22
LIST OF FIGURES

Figure 1: Distribution of the study participants by place of residence............................................. 17
Figure 2: Distribution of mothers by education level .......................................................... 18
## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRC</td>
<td>Democratic Republic of Congo</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immune Virus</td>
</tr>
<tr>
<td>LDC</td>
<td>Low Developed Countries</td>
</tr>
<tr>
<td>MDG</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>NGO</td>
<td>Non Government Organization</td>
</tr>
<tr>
<td>U5MR</td>
<td>Under 5 Mortality Rate</td>
</tr>
<tr>
<td>UBOS</td>
<td>Uganda Bureau of Statistics</td>
</tr>
<tr>
<td>UDHS</td>
<td>Uganda Demographic and Health Survey</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
**ABSTRACT**

This research was aimed at assessing the social demographic factors associated with under five mortality in western Uganda. The study used secondary data of the Uganda Demographic and health survey (UDHS) that was carried out in the year 2011.

The study investigated the demographic and social economic factors that determine under-five mortality. It was found out that there is a significant relationship between age of the mother and Under-five mortality (Pearson chi2 (18)=104.2, P-value =0.000). Ladies who bear kids at a young age register more cases of under-five mortality than those who bear kids when they are mature. The study also found out that single mothers register fewer cases of under-five mortality than married ones (Pearson chi2 (18) = 66.935, pvalue =0.000). It was further discovered that rural dwellers register higher levels of under-five mortality than urban residents (Pearson chi2 (3)=75.542, P_value= 0.000). The study also found out that poor parents register higher levels of under five mortality than rich ones (Pearson chi2 (12) = 285.004, Pvalue = 0.000). Lastly, it was discovered that households in which the parents studied beyond secondary registered very minimal levels of under-five mortality while in those with less educated parents, the under-five mortality levels were high (Pearson chi2 (9)=492.309, Pvalue= 0.000).

It is therefore recommended that the government invests more in education especially in the rural parts of the country as this will help improve the literacy levels of people and embrace the importance of seeking quality health during and after birth by mothers. There should also be construction of more health facilities in rural parts of the country to bring health services closer to the rural dwellers as this will help improve the accessibility of health services by rural residents. The government should further enforce strict laws on early marriages as this will help reduce early bearing of children that is coupled with its negative consequences. This will help increase the life span of new born babies. More efforts tailored to empowering people economically through community development programs should also be envisaged as this will help improve people’s income and enhance their affordability of quality health care.
CHAPTER ONE
INTRODUCTION

1.1 Introduction
According to World Health Organization (WHO, 2014), under five mortality is the situation by which a child dies before the age of five years. It is also known as child mortality which is the death of infants and children under the age of five orin-between one month and four years (Wag staff and Robinson et al., 2000).

Most deaths in the world majorly occur in poor communities since many poor families can’t afford to provide essential health care to mothers during and after birth. A report by the World Health Organization (WHO, 2004) indicated that 10.8 million children under age of five die every year. Four million of these children die within the neonatal period (1st month of life). Under-five mortality rates are high in many countries most especially in low developed countries (LDC’s) during the first year of life (WHO, 2014). In the year 2013, 3.7 million children aged one month to four years died and about half of these deaths occur in Sub-Saharan Africa. About half of under-five deaths occur only in five countries: India, Nigeria, Pakistan, DRC, and China (World Bank, 2010) with India 21%, Nigeria 13%, together accounting for more than 1/3 of all the under-five deaths.

According to UNICEF (1999), the decline in child mortality in Africa has been slower since 1980. In Sub-Saharan Africa, progress was observed as improving in controlling under-five mortality but still low according to the world standards, than in the 1960s and 1970s. Of the thirty countries within the World’s highest child mortality rates, twenty seven are in Sub-Saharan Africa, Sierra Leone 161/1000, Lesotho 98/1000 in under-five mortality rates and Angola, Botswana and Zambia. In Kenya, studies on child health have focused on medical causes of infant and child mortality (McElroy et al., 2001). Infant mortality rate increased by 10% between 2010 and 2014 (World Bank, 2015) though Sub-Saharan Africa has not yet achieved the transition shift in the case of children’s death while developed countries have made advances by controlling child hood diseases.

Uganda like many other countries is characterized by high under-five mortality rates of 90 deaths per 1000 live births (UDHS, 2010), though declined from 137 deaths/1000 live births in
2006. According to UNICEF (2006), Uganda had higher rates of under five mortality (U5MR) that is 137 per 1000 live births compared to her counterparts in Sub Saharan region (Tanzania had 119 deaths per 1000 live births, Zimbabwe with 105 deaths, Kenya had 121 deaths and Botswana 124 deaths per 1000 live births). Although this is still high, infant and Under-five mortality varies widely through Uganda, the risk of early deaths is much higher in rural areas than in urban areas. Infant mortality rates ranged from 54 deaths/1000 live births in Kampala to a higher 109 deaths/1000 live births in the South-western region (UDHS, 2008), and now making an average of 44 deaths/1000 live births in 2013 (World Bank, 2014). Under-five mortality is apparently high in Uganda as a whole but it is more pronounced among the rural population especially in the Western region of Uganda.

If Uganda is committed to achieving the MDG on child mortality and to improve child health, there is need to understand clearly the factors that are contributing to child mortality and the need to examine the effect of child and mother characteristics on child death.

1.2 Problem Statement
The need for continued survival of infants and their progression to childhood and untimely adults makes a study of infant’s mortality very important in the community. Current child mortality levels show that one in every thirteen Ugandan children die before reaching their first birthday and one in every seven children does not survive to fifth birthday (UBOS 2016) despite the numerous interventions and efforts regarding primary health care, health education, extension of health services by government, private sector and NGOs all intended to improve the lives of children in the country. In Uganda, since 1990 to today, various additional policies and programs have been drafted and implemented in Uganda. Among them are social-demographic and economic programs. The social-demographic programs are designed in such a way that they impose a direct health impact on the survivorship of infants in the country. Such programs are mass national immunization program against polio, the prevention of mother to child HIV transmission.

The struggle to control infant mortality is a broad concern; the government of Uganda in collaboration with organizations such as WHO, United Nations International Children’s Emergency Funds (UNICEF) and nongovernment organizations have come to help fight infant mortality. The government has provided a lot of medicine and equipment, free antenatal care to pregnant mothers, immunization services to children among others through the ministry of health.
Therefore this study aims at establishing the factors influencing under-five mortality in Western Uganda. It seeks to find out how age of the mothers, seducation level, and place of residence, marital status and wealth index has interacted to keep under-five mortality rate high.

1.3 Study Objectives
1.3.1 Main Objective of the study
The main objective of the study is to assess the socio-demographic factors associated with under-five mortality in western Uganda.

1.3.2 Specific Objectives
To assess the relationship between demographic factors and under-five mortality.

To find out the relationship between socio-economic factors and under-five mortality.

1.4 Research Hypothesis
There is no significant relationship between demographic factors and under-five mortality.

There is no significant relationship between socio-economic factors and under-five mortality.

1.5 Significance of the study
The findings of this study will help policy makers in the formulation and implementation of policies concerning the reduction of under-five mortality. The findings of the study will provide information that will greatly enhance better understanding of some of the factors associated with Under-five mortality in Western Uganda.

The study findings will add to the existing body of knowledge and this will help future interested researchers to formulate research questions about related topics.

The study will enhance the researcher’s skills in research methodology and human health.
1.6 Area of study

In the study, women aged 15-49 years from districts of Western Uganda were considered. The districts include Kabarole, Kabale, Ntungamo, Kyegegwa, Kisoro, Kanungu, Ibanda, Mbarara, Bundibugyo, Sheema among the 26 districts and has an approximate population of 8,459,957 people (UBOS, 2014) covering about 55,276.6kmsq. Data concerning children was obtained from mothers and caretakers in the age group 15-49 in Western region of Uganda because the data on childhood mortality can be well addressed by mothers or even caretakers.

1.7 Scope of study

The study included all children of interviewed women within the reproductive ages (15-49) in the Uganda Demographic and health survey (UDHS, 2011). Choosing women within the reproductive ages was guided by theories responsible for child bearing, upbringing and the welfare of children.
1.8. Conceptual Frame work
There are a number of biological and demographic factors that directly cause death among children below five years. These include: Age of the mother, marital status, birth interval, residence, occupation and maternal education.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic Factors</td>
<td>Under-five Mortality</td>
</tr>
<tr>
<td>Age of the mother</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
</tr>
<tr>
<td>Birth order</td>
<td></td>
</tr>
<tr>
<td>Birth Interval</td>
<td></td>
</tr>
<tr>
<td>Socio-economic factors</td>
<td></td>
</tr>
<tr>
<td>Place of residence</td>
<td></td>
</tr>
<tr>
<td>Education level of the mother</td>
<td></td>
</tr>
<tr>
<td>Wealth index</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction
This chapter discusses the existing literature about under-five mortality. It provides a review of literature on the factors associated with under-five mortality among children but in line with the objectives of this study.

2.2. Age of the mother and under five mortality
Maternal age has been observed as an important predictor of child mortality. Studies have shown that adolescents and older mothers are likely to produce infants of low birth weights. These low birth weight infants have poor survival chances because the organs are small e.g. lungs and Kidneys especially those less than 2.5 kg (UBOS, 2014). Ahonsi (1995) found that the risk of child mortality remained high to mothers in the teenage ages compared to those aged between 20 and 34 years. Studies by Mohammed (1987), and Aizen mande (1988) have shown that IMR among children whose mothers are under 20 years of age is estimated at 126/1000 live births world over. Kibet (1987) indicated that there is an inverse relationship between the age of the mother and childhood mortality. Reichmann and Pagnini (1997) also found that the relationship differs by race in the United States, with whites having a U-shaped relationship between the age of the mother and child mortality.

2.3. Marital status of the mother and under-five mortality
In Africa, people tend to engage in child bearing during their young ages (puberty) especially in rural areas. Once a girl reaches puberty, she is thought to be ready for marriage. They are under considerable pressure to start relationships by their parents or their guardians (Jackson, 2003). This can lead to higher incidence of mortality since there are no limits of bearing children once the girl has reached puberty stage. In Uganda, a study conducted by Ahimbisibwe (1997) found a
statistically significant relationship between childhood survival and age of the mother. This implies that having the birth too early increases the risk of infant death. Children born to older mothers (30 and above) in the study were found to have a higher risk of dying compared to those born to mothers in age group 25-30 years. Ayiga (1991) using data from the UDHS 1988/89 observed that infants born to mothers below 20 years were about two times at the risk of dying than those born to mothers aged 30-39 years. Ssebuliba (1995) found that children born to young mothers are more likely to die than those born to older mothers.

According to UNICEF (2003), it was revealed that births to mothers who had never been married had higher rates of child mortality. The reason for this was due to lower birth weights, which results from teenage mothers and women without previous birth. Carvajal and Burgess (1978) found that child deaths to children born to mothers who were living single lives were higher than those who were legally married.

Although there is an inverse relationship between women’s status and early childhood mortality, the relationship is not necessarily linear (UBOS, 2001). The marital status of a mother in a family can determine her decision power (Muzamil et al., 2008) and this mother’s decision-making power seems to have its greatest importance in influencing infant mortality. Among children whose mother has no final say in any decision, 131 in 1,000 died before celebrating their first birthday, compared with 93 or fewer in 1,000 among children whose mother participates in some decisions. Children’s mortality level is associated with whether their mother has some power to make a final decision.

2.4. Education level of the mother and under-five mortality
Wang (2002) and Basu et al (2005) noted the importance of mother’s education on child survival. It reflects mother’s level of knowledge and skills and the degree to which she can effectively make use of the resources at her disposal to increase survival chances of her infants. Years of schooling (education of mother) was found to be significant in influencing child mortality. Mothers with zero
years of schooling were more likely to have child death than those with some years of schooling (Girson et al., 2004). It is reported that in Nigeria “mothers with more education are less fatalistic about sickness and therefore tend to seek outside medical assistance for a sick child”.

Women with more education increase their likelihood of securing steady, high paying employment, wield significant decision making power and control over resources (Frost et al., 2005). Also women with authority are more likely to draw attention to their children’s illnesses and to take a sick child to the health clinic (Caldwell 1993). Also it was indicated that education equips women with great health knowledge (Bhuiya et al., 1990) and influences women attitude about health (Castro et al., 1995).

Education increases age at first marriage. A study by Akukunmi (1984), Cleland and Ginneken (1988), showed a negative effect of age at first marriage on the family size. It was found that educated mothers look for qualified medical personnel while seeking medical care for themselves and for children (Akukunmi, 1984). In Uganda, it was established that mothers who had primary and secondary education experienced fewer infant deaths (Chemisto, 1990). The reason was that education provides women with knowledge about risks involved in having children at young and older child bearing ages, short birth intervals and birth orders (Ayiga, 1991).

2.5. Residence of the mother/household and under-five mortality

A study in Mozambique found that higher under five mortality was associated with the location of mother’s residence in some provinces and these were not only related to demographic variables but also socio economic variables such as distribution of basic infrastructure, including health facilities (Maccassa et al., 2012).

Although there are studies that have described these trends such as (Carvalho and Wood, 1978; Sawyer, et al., 1987; Wood and Carvalho, 1988), there are few that have sought to explain them. Thus, little is known about both how and why rural urban or intra urban differentials have changed over period in which the development process unfolded and levels of urbanization rose, women’s educational attainment improved and infrastructure spread plus income and wealth increased. For example, in review of Brazilian studies on urbanization and health, Akerman et al., (1994) concluded that there were more gaps in understanding the relationship between urbanization and
health in Brazil, which is similar to the situation in other developing countries (Harpham and Tanner, 1995)

For instance, childhood mortality among the slum residents in Kenya was estimated to be 151 deaths per 2000, compared to 95 for the whole of Nairobi and 117 among rural population of Kenya (African Population and Research Centre, 2002) Similar patterns have been reported in other African settings (Madise and Diamond, 1995). The relatively poor health outcomes among young children living in poor slum settlements (African Population and Research Centre, 2002; Kyobutungi et al., Ndugwa and Zulu, 2008) the fact that majority of urban residents live in slum settlements (UN-Habit, 2003) and the projections that more than half of Africans will live in urban areas by 2030 (United Nations, 2008) pose a new challenge in global and national efforts to reduce child mortality in Africa.

2.6. Wealth Index and under-five mortality
In Bangladesh, it has been shown that children from poorer households tend to be more undernourished with increased risks of dying before 5 years of age than children in wealthier households (Zere et al., 2003). Also in a study by Mutunga (2004), it was indicated that wealth of household has a significant effect on the child survival. A child born to a mother from rich household has high risks of surviving up to at least five years of age.

According to UBOS (2006), employment is a source of empowerment for both women and men. It may be particularly empowering for women if it puts them in control of income. UBOS (2014) also reveals that in Uganda the employment level for women is higher in urban areas than in rural areas. This could be due to lack of education in rural areas. It is also indicated that wealth status is inversely associated with childhood mortality. For all measures, the children in the highest wealth index quintile have the lowest mortality rates, while those in the lowest wealth index quintile have the highest mortality rates. Usually the relationship between birth order and mortality at early age takes a U-shaped form. Mortality is high for first-born children and births of very high orders and is low for births of order 2 or 3. Birth order and survival status of the preceding child have a strong association with infant mortality in Africa and Asia as well (Keonig, 1990).
2.7. Birth order and under-five mortality
In India, it was shown that birth order has an effect on child mortality which is higher for first and higher-order births. During these stages of children’s development, mortality is more likely to depend on the care they receive than on biological factors. Children of high order births face competition from older siblings for food and parental attention. They also face exposure to infectious childhood diseases from their siblings. In addition, the mother’s nutritional status, which affects birth weight and lactation, may decrease with high-order births (Norman et al., 1998). However, it is observed that in Bangladesh, neonatal and post neonatal mortality level is the lowest for 4th and above order of births than first, second and third order of births (Kamal, 2009).

2.8. Occupation of the mother and under-five mortality
There are early significant relationships between women’s occupation and child mortality. The probability of a child dying is greater for a child whose mother is employed (Hobcroft, 1984). Farah (1981) found out that the little amount of time available to working mothers for child care consequently interrupts breastfeeding, increases the problem of accidents and untimely leads to higher mortality.

2.9. Birth interval of the child and under-five mortality
UDHS (2006) reports short birth intervals as associated with the increased risk of under-five mortality and the risk of mortality declines with each increase in the length of the birth interval. This is seen as children born less than 2yrs after the previous birth are about 93% more likely to die before reaching the age of 5 than those born by mothers 3yrs after the previous birth. Children born before 2 years of birth spacing have 120 chances of dying before reaching the age of 1 year and those born after 2yrs from the previous birth have 76 chances of dying before the age of 1 year and those born after 4 years have 56 chances of dying before reaching the age of 1 year. The short birth intervals have been responsible for childhood mortality and they are associated with high fatal wastage plus infant mortality (Auguua, 2006).
CHAPTER THREE

METHODOLOGY

3.1. Introduction
This chapter covers the methodology that was used in the study. This includes the data source, study design, population of study, and area of study, data processing, methods and levels of analysis that were used.

3.2. Study Design
This study used a cross-sectional design. This is because the study mainly focuses on underlying social-demographic and economic causes of under-five mortality and this is better understood using this type of design which explore how people assign meanings to their socio economic and demographic structures. This type of design was used because it would enable the researcher to collect the necessary data in reasonably a short period of time. It is efficient, cost effective and enables the researcher to study the issues under investigation in a detailed manner.

3.3. Target Population/Sample size
Data concerning under-five mortality was obtained from mothers/care takers between 15 years and 49 years of age in the Western region of Uganda which has Kabarole, Mbarara, Hoima, Ntungamo, Isingiro and Sheema among the 26 districts and has an approximate population of 8459957 people (UBOS, 2014) covering about 55276 square kilometers.

3.4. Sample size determination
A sample of 7878 women in Western Uganda were considered in the Uganda Demographic and Health Survey (2011) to obtain the relevant information about under-five mortality and it is this secondary data that the study used to answer its objectives.
3.5. Study Area
The area of study was Western Uganda which includes 26 districts for example Mbarara, Hoima, Ntungamo, Isingiro and many others to make up the 26 districts of the western region. These are bordered by South Western Uganda, West Nile and Central regions. The choice of this region is because western region in Uganda is among the regions that have high under five mortality rate having very few educated women and those coming from rich families plus poor working conditions which leave most of mothers unemployed these increase child mortality.

3.6. Data source
The data used was of secondary type from UDHS (2011) which is a follow-up on the previously carried out national surveys and provides basic demographic and health indicators. It provides estimates for key indicators as well as estimates at both national and regional levels in Uganda. Mothers and care takers of children under-five years in western Uganda in the reproductive age15-49 years were selected by the survey.

3.7. Study Variables/Description of study variables
The dependent variable was under five mortality. This was arrived at by considering the number of under-five mortality cases that a given couple had registered ever since the commencement of their marriage. The independent variables include; marital status, age of the mother, education level of the mother, place of residence, wealth index

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital status</td>
<td>Marital status of the mother</td>
<td>categorical</td>
</tr>
<tr>
<td>Level of education</td>
<td>Education level of mother</td>
<td>categorical</td>
</tr>
<tr>
<td>Age of the mother</td>
<td>Mother’s age</td>
<td>continuous</td>
</tr>
<tr>
<td>Residence</td>
<td>Region/place</td>
<td>categorical</td>
</tr>
<tr>
<td>Wealth index</td>
<td>Household wealth</td>
<td>categorical</td>
</tr>
</tbody>
</table>
3.8. Data Analysis

STATA software was used to analyze the data and descriptive statistics was used to present the findings about each variable. Chi-square tests were used to test the hypotheses at 5% level of significance. This involved a cross-tabulation of infant mortality and the each of the independent variables.

\[
x^2 = \sum_{i=1}^{r} \sum_{j=1}^{c} \left( \frac{O_{ij} - E_{ij}}{E_{ij}} \right)^2
\]

Where

- \(i=1\) ......................rows
- \(j=1\) ......................columns

- \(O_{ij}\) - is the observed frequency in rows I and column j of the cross tabulation.
- \(E_{ij}\) - is the expected frequency of the independent variables.
- \(r\) - Is the number of categories of independent variables (rows)
- \(c\) - Is the number of categories of dependent variables (columns) with (r-1) (c-1) degrees of freedom

The null hypothesis was rejected if the computed probability value of the cross-tabulation was less than the significance level. A logistic regression of under-five mortality on the rest of the variables was run to find out the likelihood of the association of all the variables indicating why a given child did not make it to the fifth birthday. This followed a tri-chotomous setoff values of the dependent variable based on the effects of the independent ones. It determined how each independent variable affects the dependent (Underfive mortality). The assumption of this analysis was that the risk of the death for children of the same family tends to be similar due to the common family environment. The researcher based on the results obtained to make appropriate conclusions and recommendations.
The Model

\[ \text{Under}_5\text{-Mortality} = \beta_0 + \beta_1\text{Educ} + \beta_2\text{Age} + \beta_3\text{Residence} + \beta_4\text{Wealth} + \beta_5\text{Marital \_status} \]

Where \( \beta_i \_\_\text{are \_\_regression \_\_coefficients} \)

3.9. Ethical considerations

Ethical approval to use the UDHS dataset was granted to me via the UDHS website where I was tasked to register and submit details of my research for example the topic and how I intend to use the data which I did and after 24 hours I received the dataset via my email account.

CHAPTER FOUR

RESEARCH FINDINGS, INTERPRETATION AND DISCUSSIONS

4.1. Introduction

This chapter provides the findings of the study on the social-demographic factors associated with under-five mortality in western Uganda. It discusses the descriptive characteristics of each of the study variables and investigates the relationships between these variables.
4.2. Descriptive statistics of the variables

A descriptive analysis of the respondents’ demographic characteristics was carried out and the results presented in table 1 below were obtained.

Table 1: Descriptive statistics of respondents’ characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of Mothers</td>
<td>15-19</td>
<td>473</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>20-24</td>
<td>1988</td>
<td>24.6</td>
</tr>
<tr>
<td></td>
<td>25-29</td>
<td>2366</td>
<td>30.0</td>
</tr>
<tr>
<td></td>
<td>30-34</td>
<td>1444</td>
<td>18.3</td>
</tr>
<tr>
<td></td>
<td>35-39</td>
<td>1073</td>
<td>13.6</td>
</tr>
<tr>
<td></td>
<td>40-44</td>
<td>446</td>
<td>5.1</td>
</tr>
<tr>
<td></td>
<td>45-49</td>
<td>138</td>
<td>1.8</td>
</tr>
<tr>
<td>Under-five mortality</td>
<td>0-1 child dead</td>
<td>5763</td>
<td>73.2</td>
</tr>
<tr>
<td></td>
<td>2 children dead</td>
<td>230</td>
<td>25.8</td>
</tr>
<tr>
<td></td>
<td>3 or more children dead</td>
<td>85</td>
<td>1.0</td>
</tr>
<tr>
<td>Wealth Index</td>
<td>Poor</td>
<td>3580</td>
<td>45.5</td>
</tr>
<tr>
<td></td>
<td>Middle</td>
<td>2893</td>
<td>36.7</td>
</tr>
<tr>
<td></td>
<td>Rich</td>
<td>1405</td>
<td>17.8</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Never in union</td>
<td>240</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>3876</td>
<td>49.2</td>
</tr>
<tr>
<td></td>
<td>Living with partner</td>
<td>2951</td>
<td>37.5</td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td>169</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td>642</td>
<td>8.1</td>
</tr>
</tbody>
</table>

4.2.1. Age group of mothers whose children die under 5 years

The highest proportion (30%) of mothers were between 25 to 29 years of age followed by those of 20 to 24 years (24.6%), those of 30 to 34 years (18.3%), those of 35 to 39 years (13.6%), those of 15 to 19 years of age (6%), those of 40 to 44 years (5.1%) and lastly those of between 45 and 49
years. This result reveals that majority of mothers were in the youth age group (less or equal to 35 years).

4.2.2. Under 5 mortality in the different households of western Uganda

Being the study dependent variable, it was necessary to investigate under-five mortality per household and this was measured as the number of deaths of under five children that occurred in a given household.

From the analysis, it was found out that majority (73.2%) of the households had lost none or one child under the age of five years followed by those who had lost two children under the age of five years (25.8%) and lastly those that lost three or more children under the age of five (1%). This result reveals that in western Uganda, under five mortality is not so rampant.

4.2.3. Wealth Index

The highest proportion (45.5%) of the households that participated in the study were found to be poor followed by those who were in medium wealth conditions (36.7%) and lastly those who were rich (17.8%). This result reveals the need for more efforts to empower the people of western Uganda economically.
4.2.4. Marital Status

The highest proportion (49.2%) of study participants were officially married followed by those living with partner but haven’t been married (37.5%), those who had divorced (8.1%), those who had never been in union (3.1%) and lastly those who are widowed (2.2%). Majority of the study participants were in marriage staying with their husbands irrespective of whether one is officially married or not.

4.2.5. Residence of study participants

In this study, the researcher considered both urban and rural dwellers as the place of residence was assumed to also have an influence on under-five mortality. The results of the descriptive analysis are presented in Figure 1 below.

**Figure 1: Distribution of the study participants by place of residence**

Majority (88%) of the study participants were rural dwellers and the rest (12%) stay in urban places. This shows that majority of the study participants stay in villages.
4.2.6. Maternal Education

A descriptive study of the distribution of mothers by education level was carried out and the results were as presented in figure 2 below.

**Figure 2: Distribution of mothers by education level**

The highest proportion (35.2%) of mothers who participated in the study had incomplete secondary as their highest education level attained followed by those of incomplete primary (32.7%), those of complete primary (15.5%), those who had attained post-secondary education (13.8%) and lastly those who had complete secondary as the highest education level. This result reveals that the literacy level of mothers who participated in the study is still very low although majority have acquired the minimum education level (Primary education) and have the elementary numerical skills.
4.3. Relationship between demographic, social-economic factors and under five mortality

To investigate the relationship between demographic, social-economic factors and under-five mortality, the researcher used chi-square analysis and table 2 below presents the results obtained.

Table 2: Relationship between demographic, social-economic factors and under five mortality in western Uganda

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Under 5 Mortality</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1 child</td>
<td>2 children</td>
</tr>
<tr>
<td>15-19</td>
<td>6.7%</td>
<td>4.1%</td>
</tr>
<tr>
<td>20-24</td>
<td>25.4%</td>
<td>22.3%</td>
</tr>
<tr>
<td>25-29</td>
<td>30.8%</td>
<td>28.1%</td>
</tr>
<tr>
<td>30-34</td>
<td>18.0%</td>
<td>19.4%</td>
</tr>
<tr>
<td>35-39</td>
<td>12.7%</td>
<td>23.5%</td>
</tr>
<tr>
<td>40-44</td>
<td>5.1%</td>
<td>29.4%</td>
</tr>
<tr>
<td>45-49</td>
<td>1.4%</td>
<td>2.6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Residence</th>
<th>Under 5 Mortality</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>23.8%</td>
<td>15.0%</td>
</tr>
<tr>
<td>Rural</td>
<td>76.3%</td>
<td>85.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maternal Education level</th>
<th>Under 5 Mortality</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>14.0%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Primary</td>
<td>58.5%</td>
<td>62.5%</td>
</tr>
<tr>
<td>Secondary</td>
<td>22.1%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Higher</td>
<td>5.4%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wealth Index</th>
<th>Under 5 Mortality</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>40.6</td>
<td>76.5%</td>
</tr>
<tr>
<td>Middle</td>
<td>18.7%</td>
<td>17.7%</td>
</tr>
<tr>
<td>Rich</td>
<td>40.7%</td>
<td>26.1%</td>
</tr>
</tbody>
</table>
4.3.1. Relationship between age of the mother and under-five mortality

Results in table 2 indicate that there is a significant relationship between age of the mother and under five mortality at 5% level of significance (Pr=0.000<0.05). Mothers in the youthful age groups had lost more children below the age of 5 than older mothers. This result indicates that the age of a mother has a significant effect on the immunity of new born babies. Ladies who bear children at a young age are to a large extent susceptible to losing children before the age of 5 than those who give birth when mature. This result implies that early marriages should be discouraged as these will help extend the life span of new born babies.

4.3.2. Relationship between Place of residence and under-five mortality

It was found out that there is a significant relationship between place of residence and under five mortality at 5% level of significance (Pr=0.000<0.05). Mothers who stay in rural areas lose children below the age of 5 years more than those that stay in urban places. For example, 85% of mothers in rural areas lose 2 children under five years while only 15% of those in urban places lose two children. 90.6% of mothers in rural areas lose 3 or more children before the age of 5 years where as only 9.4% of those in urban places lose 3 or more children less than 5 years. This result indicates that mothers who stay in rural places find it hard to access health facilities during and after birth while those in urban places are closer to health facilities and access medical attention more easily.
4.3.3. Relationship between Maternal education level and under five mortality

Results in table 2 indicate a significant relationship between maternal education level and under five mortality at 5% level of significance (Pr=0.000< 0.05). Mothers with low education levels registered higher cases of under-five mortality than those with higher education levels. For example, 62.5% of mothers who ended in primary had lost two children below the age of 5 years where as only 0.3% of mothers who had attained tertiary education had lost two children below 5 years. 45.9% of mothers who never attended school had lost 3 or more children below the age of 5 years while none of mothers who studied beyond secondary did. This implies that education level of a mother significantly influences the mortality of new born babies.

4.3.4. Relationship between wealth index and under -five mortality

There is a significant relationship between wealth index and under five mortality at 5% significance level (Pr=0.000<0.05). Poor households register higher cases of under-five mortality than well off households. For example, 76.5% of the poor households had lost two children below the age of 5 years while 26.1% of the rich families had lost two children below 5 years of age. 58.3% of poor families had lost 3 or more children below five years where as only 16.4% of the rich ones had registered 3 or children dead below the age of five. This indicates that poverty makes people lose their children below the age of five since they cannot afford medical care. Therefore efforts to reduce poverty also help to reduce mortality.

4.3.5. Relationship between marital status of parents and under five mortality

It was found that there is a significant relationship between marital status of parents and under five mortality at 5% level of significance (Pr=0.000<0.05). Parents who are in marriage registered more cases of under-five mortality than those who stay without partners. For example, 52.4% of the married parents had lost two children under the age of 5 years while only 2.5% of the widowed parents and 7.4% of the divorced parents did. 51.8% of the married parents had lost 3 or more children below the age of five years where as none of the widowed parents and 1.8% of divorced parents did.
4.4. Regression Analysis

The researcher found it important to investigate the multivariate interactions of the different independent variables of the study with the dependent. She used logistic regression analysis to study this and the results are presented in table 3 below.

Table 3: Regression analysis

<table>
<thead>
<tr>
<th>Under 5 Mortality</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>Z</th>
<th>P/z/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young mother</td>
<td>14.6097</td>
<td>2728.4</td>
<td>0.01</td>
<td>0.996</td>
</tr>
<tr>
<td>Urban residence</td>
<td>-0.7522</td>
<td>0.9346</td>
<td>0.9346</td>
<td>0.421</td>
</tr>
<tr>
<td>Education level</td>
<td>-0.4055</td>
<td>0.5318</td>
<td>-0.80</td>
<td>0.446</td>
</tr>
<tr>
<td>Wealth</td>
<td>-1.4188</td>
<td>0.7907</td>
<td>-0.76</td>
<td>0.007</td>
</tr>
<tr>
<td>Marital status</td>
<td>13.7713</td>
<td>2445.1</td>
<td>-1.79</td>
<td>0.996</td>
</tr>
<tr>
<td>Constant</td>
<td>-30.6056</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The model

\[
Under\_5\_Mortality = -30.6056 + 14.6097 \text{mother\_being\_young} - 0.7522 \text{Urban\_residence} - 0.4055 \text{education\_level} - 1.4188 \text{being\_more\_wealthy} + 13.7713 \text{not\_being\_married}.
\]

This model is a good fit (P_value=0.013<0.05) at 95% level of confidence.

Wealthier households are less likely to register cases of under-five mortality than poor ones (P_value=0.007<0.05) at 5% level of significance. However, at multivariate level, the contributions of age of the mother, residence, education level and marital status of parents to under five mortality are not significant since their probability values are greater than the critical at 5% level of significance. This result reveals that poverty of the parents contributes more to under five
mortality than their education level, marital status, place of residence and age. It makes them unable to afford essential health care for during and after birth by mothers.
CHAPTER FIVE

SUMMARY OF THE RESEARCH FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction
This chapter provides the summary of findings on the study on social demographic factors associated with under five mortality in western Uganda. It also includes the conclusions and recommendations made by the researcher based on the findings of the study.

5.2. Summary of findings
Univariate analysis indicates that, from Table 1, most of the respondents (30%) were between (25-29) years of age thus being youthful mothers; Table 2 shows that majority of the respondents 73.2% had lost (0-1) child under-five years. Under-five mortality is continuously occurring in western Uganda and this has been mostly observed in urban households with 78.7% of the region. People in urban areas of western Uganda mostly live in slums with poor hygiene and sanitation thus a risk to the young children under the age of five. Majority of these mothers are married 49.2% though with very low literacy levels of primary education 59.5% having very few mothers who attained higher levels of education 4.1%. Furthermore, the study indicates that most of the respondents were poor 45.5% corresponding to 17.8% of the rich. These have seriously led to loss of children below the age of five years in most households.

Using the chi-square test, Bivariate analysis indicated that marital status, wealth index, maternal education, place of residence and age of the mother had a positive and significant association with under five mortality since the p-value is less than 0.05 at 95% level of significance( 0.019<0.05).

From the Logistic regression model, it can be inferred that young mothers are more likely to have their children die below the age of five, urban residence is likely to influence under five mortality, education level and wealth are less likely to influence under five mortality whereas marital status is more likely to influence under five mortality.
5.3. Conclusions
The main objective of this study was to find out the social demographic factors associated with under-five mortality in western Uganda. The researcher used the Uganda demographic and health survey (UDHS) data of 2011 to answer the study objectives.

The first objective of the study was to assess the demographic factors that determine under-five mortality. The study found out that there is a significant relationship between age of the mother and Under-five mortality. It discovered that ladies who bear kids at a young age register cases of under-five mortality than those who bear kids when they are mature. The study also found out that single mothers register fewer cases of under-five mortality than married ones. The study further discovered that rural dwellers register higher level of under-five mortality than urban residents. The residents of rural areas revealed that they are far from health facilities and therefore obtaining essential health care of mothers during and after birth is difficult.

The second objective of this study was to find out the relationship between social economic factors and under five mortality. It was found out that poor parents register higher levels of under-five mortality than rich ones. This was because, financially unhealthy parents find it difficult to afford quality health care for both mothers and new born babies and this has negatively affected the life of the young generation. The study also discovered that education level of the parents has a significant effect on the mortality rate. Households in which the parents studied beyond secondary registered very minimal levels of under-five mortality while in those with less educated parents, the under-five mortality levels were very high.
5.4. Recommendations

The government should invest more in education especially in the rural parts of the country as this will help improve the literacy levels of people and embrace the importance of seeking quality health during and after birth by mothers.

The government should also construct more health facilities in rural parts of the country to bring health services closer to the rural dwellers. This will help improve the accessibility of health services by rural dwellers and thus reduce under-five mortality.

The government should further enforce strict laws on early marriages as this will help reduce early bearing of children that is coupled with its consequences. This will help increase the life span of new born babies.

More efforts need to be tailored to empowering people economically through community development programs that can improve people’s income and enhance their affordability of quality health care.
REFERENCES:
Ahimbisibwe, F, E, (1997) Environmental sanitation and maternal factors as the determinants of infant mortality in Ankole; MA (DEMO), dissertation, Makerere University, Kampala.


UBOS (2007). Demographic and Health Survey, 2006. Calverton, Maryland USA:


