APPLICATION OF LIFE TABLE MODEL IN STUDYING PROGRESS OF PUBLIC PRIMARY SCHOOL PUPILS IN MIGORI SUB COUNTY, KENYA

BY

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DECLARATION

This project is my own work and has not been presented for a degree award in any other institution.

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This project has been submitted for examination with my approval as the university supervisor.

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DEDICATION

I dedicate this work to my husband Elly Odhiambo, sons Samuel Bunde and Javan Ochieng, my parents Peter Bunde and Millicent Bunde, parents in-law and my siblings.

ABSTRACT

Education progress plays a very important role in determining the future of a pupil and even in planning for the schools and education sector as a whole. Primary Education forms the basis of implementing Poverty Reduction Strategy by the government through the acquisition of basic literacy skills, which increases opportunities for employment and ability to be self-reliant, hence the need to monitor the pupils general progress from the time of entry in class one to graduation after the expected eight years in Kenya's Primary school level of education. This study applies Life Table Technique in determining the progression of pupils from the time of entry in class one to graduation in class eight, in public primary schools in Migori Sub County. The objectives of the study were to determine the Sub County's retention rate by class and sex and also to determine the expected duration of schooling for each class by sex. A sample of 91 schools was drawn using multi stage sampling where each of the six zones was represented and an Interviewer-Administered Questionnaire was used to obtain data to meet the study objectives. The cohort for the study included the Sub County's class one public primary school enrolment in the year 2007 for the sampled schools. The findings of this study were; the retention rates for male pupils was higher than that of female pupils and also the retention rate was lowest in class seven and highest in class three. Similarly, the expected duration of schooling was higher for male pupils compared to the female pupils; also the expected duration of schooling for each class was lower than the normal duration as expected. This study would help to monitor the progress of primary school pupils in the Sub County and also help the schools, the community, the Ministry of Education and other stakeholders in adopting the appropriate measures to curb the elements of attrition.

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ABBREVIATIONS AND ACRONYMS

BoG - Board of Governors

EFA - Education For All

FPE - Free Primary Education

GER - Gross Enrolment Rate

GoK - Government of Kenya

KCPE - Kenya Certificate of Primary Education

MGDs - Millennium Development Goals

UNESCO - United Nations Educational Social Cultural Organization

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CHAPTER 1

INTRODUCTION

1.1 Background Information

Provision of good quality primary education is a critical tool in generating the opportunities and benefits of social and economic development. Educating people means putting opportunities into their hands and is recognized as one of the best anti-poverty strategies. It is also one of the best ways of ensuring a country's economic prosperity and competitiveness.

Education system is comparable to a hierarchical organization in which after an academic year four possibilities arise in the new status of the pupils; the pupil may move to the next higher class, repeat the same class, leave the system successfully as graduates or dropout of the system before attaining the maximum qualification. It is estimated that average earnings increase by 11 percent with each additional year of education and each additional year of material education reduces childhood mortality by 8 percent (Nyandwaki *et al.*, 2014).

Since the initiation of Free Primary Education (FPE) by the government in 2003, there has been high expectation that the retention rate of pupils within public schools would be high; which would lead to high number of pupils proceeding to next class and finally completing the primary level within the eight years, but this has not been the case. The issue has brought a lot of concern from parents, teachers, education sector and the general public as to why the reverse is taking place; thus the need to bring to their attention the actual picture of what is happening at every stage (class) in order to find out reasons and make decisions appropriately.

A Life Table provides a concise measure of the longevity,migration and population growth of a cohort.In the past, the model has been extensively used by epidemiologists when studying age-specific indices but not by the education sector on primary schools in order to monitor the progress of pupils from one class to the next. This study employed the Life Table functions to determine the associated probabilities of survival of pupils to graduation. Equally the Technique was used to predict the expected duration of schooling in Migori sub county.

In this study, graduation was perceived as successful completion of primary education level after sitting for KCPE examination, the number of pupils who proceed to the next class as survival cases and those who failed to, thus not moving to the next class as attrition cases.

The technique can be used by the ministry of education to adopt the measures and in decision making to cut down the arising problem of failure to graduate by some pupils. It will also assist interested parties to make informed decision about primary education management with a view of curbing dropouts and reducing the gender disparity in primary schools.

1.2 Statement of the problem

The progress of pupils in their studies from time of entry to the next level and eventually graduating after the expected duration of study in primary level of education has been a matter of concern over the past years. With the introduction of Free Primary Education (FPE) and abolition of class repetition in Kenyan education system, it is expected that a pupil spends a maximum of eight years between time of entry in class one and exit at class eight. For a number of pupils this has not been the case due to unforeseen factors. An understanding of the primary school pupil retention rates per class and the expected duration of schooling is needed for planning and proper decision making for quality education to be realized. The study will apply Life Table Technique to establish primary school retention rates and expected duration of schooling in Migori Sub County for the purpose of gaining insight into areas where the same might be improved.

1.3 Main objective

The main objective of this study was to apply Life Table Technique to study the progress of public primary school pupils during the Free Primary Education, using Migori Sub County as a case study.

1.4 Specific objectives of the study

This study was guided by the following two specific objectives;

1. To determine the retention rates and expected duration of schooling in public primary schools in Migori Sub County.

2. To compare the retention rates and expected duration of schooling among male and female pupils in Migori Sub County.

1.5 Significance of the study

Education plays a very important role in determining the future of an individual, the community and even the county at large. It determines the economic status of the community, leadership skills and discipline among others; thus the importance of giving a child basic education. In the Kenyan education system, there are three major levels, namely; primary, secondary and university where an individual is expected to take eight years in primary, four years in secondary and four years at university respectively. One cannot go to the next level without completing the preceding level and therefore primary education is very important in the academic life of an individual since it acts as the foundation. This study will help to monitor the progress of primary school pupils and will also help the schools, the community and the Ministry of Education in adopting the appropriate measures to curb the elements of attrition. When a significant number of learners are recorded as "continuing or intending to continue" the learning activities leading to the qualification aim beyond their expected end date. The Life Table Technique was applied to determine the expected duration of schooling and retention rates among the pupils in Migori Sub County.

1.6 Assumptions of the study

The following assumptions were made for the Life Table Technique to be appropriate;

- Admissions takes place only in class one

- Dropouts are assumed to be uniformly distributed in the period $(x, x+1)$, where x is the year of study
- No class repetition

1.7 Basic concepts

This study employed the theory of Life Table which is a demographic model. Keyfitz (1968) defines life table as a population model covering a cohort of people born at the same moment, closed to migration and followed through successive ages until they die.

There are different types of life tables, namely; those classified according to reference year which includes **cohort life table** (takes a group of people that began life during a specified interval and follows them in subsequent years until all have died) and **current life table** (employs data for cross section of time to represent the entire generation).

Secondly, there are those that are classified according to length of age interval which includes **complete life table** (data is given in single years) and **abridged life table** (data is given by interval of 5 or 10 years except for the initial years).

Finally we have those that are classified according to number of characteristics considered which includes **single decrements table** (only one course of death and one characteristic considered at a time) and **multiple decrements table** (separate and combined effects of more than one characteristics are described).

This study used cohort life table which is longitudinal in that only pupils who enrolled in class in 2007 within the same school was considered and monitored until the time they graduated in class eight in 2014. In this section,the life table functions were discussed.

The following are some of the terms used in a life table.

1.7.1 Classes or life stage, x

This variable represents the life stage or age class.

1.7.2 Number of survivors in class x, l_x

This variable shows the total number of individuals observed at each stage or class. It gives the number of persons living at any specified age x in any year out of any assumed number of births l_o.
Once the classes have been defined and the number of individuals in each l_x has been counted, the calculations of values for the other variables of the life table can be done.

1.7.3 Radix, l_o

This is an assumed number of births at age 0. It is usually called the cohort of a life table.

1.7.4 The number of deaths, d_x

This variable shows the number of individuals who die during each stage or class. The mortality at each stage is then calculated by subtracting survivorship values. That is,

$$d_x = l_x - l_{x+1}.$$

1.7.5 The probability of dying at age x, q_x

This variable shows the probability that an individual age x will die within one year following the attainment of that age, x. q_x is calculated by dividing mortality by survivorship. That is,

$$\begin{aligned} q_x &= \frac{d_x}{l_x} \\ &= \frac{(l_x - l_{x+1})}{l_x} \\ &= 1 - \frac{l_{x+1}}{l_x}. \end{aligned}$$

1.7.6 Probability of survivorship, p_x

This variable shows the probability that a person aged x survives up to his/her next birthday $x + 1$. It is calculated by subtracting the mortality rate of that class from one.

Thus it is complementary to the mortality rate, i.e.,

$$\begin{aligned} p_x &= 1 - q_x \\ &= 1 - \frac{d_x}{l_x} \\ &= 1 - \left(1 - \frac{l_{x+1}}{l_x}\right) \\ &= \frac{l_{x+1}}{l_x}. \end{aligned}$$

1.7.7 Mid-year population, L_x

This variable shows mid-year population of individuals between classes x to $x+1$, and is given by

$$L_x = l_x + 0.5(l_x - l_{x+1}).$$

Hence,

$$\begin{aligned} L_x &= \frac{1}{2}(l_x + l_{x+1}) \\ &= l_x + \frac{1}{2}d_x \\ &= \frac{3}{2}l_x - \frac{1}{2}l_{x+1}. \end{aligned}$$

That is, it is assumed that a person dropping out between the class x and $x+1$, on an average, live 0.5 years. This variable assists in calculating the variables that follows.

1.7.8 Persons alive at age x, T_x

This is the number of years lived by the cohort L_x (persons alive at age x) after attaining the age x. It represents the total number of individuals at class x and higher classes. The value of T_x is obtained by accumulating L_x from x to w.
Thus,

$$T_x = \sum_{i=0}^{\infty} L_{x+i}.$$

The following relation is also considered:

$$T_x = L_x + T_{x+1}.$$

1.7.9 Life expectancy, e_x

This is the average number of additional years a person age x is expected to live under prevailing mortality conditions. It is called the expectation of life in the sense that it gives the number of years entirely completed under prevailing mortality conditions, thus including the fraction of the years survived in the year in which death occur. It decreases with age x and is defined as

$$\begin{aligned} e_x &= \frac{T_x}{l_x} \\ &= \frac{\sum_{i=0}^{\infty} L_{x+i}}{l_x} \\ &= \sum_{i=0}^{\infty} {}_iP_x. \end{aligned}$$

CHAPTER 2

LITERATURE REVIEW

Education is a basic right as stipulated in the constitution of Kenya, 2010 and Basic Education Act, 2013. In Article 53 1(b) of the Kenyan Constitution, free and mandatory basic education is provided as a basic human right for all Kenyan children. Article 43 1(f) education is recognized as a social economic right for all Kenyans (National County for Law Reporting, 2010). In Kenya, it is mandatory for all eligible girls and boys to attend school; children aged 6-13 years should attend primary school education and those aged 14-17 years should attend secondary school (National Council for Law Reporting, 2013). It is worth noting that, secondary school attendance depends on the age of the child at primary school entry and completion.

Since independence, in 1963, the Kenyan government has been dedicated to expansion of the education system to accommodate all children. The dedication is based on the aspiration of the government to combat poverty, disease, ignorance and the conviction that every individual has right to education as stipulated in the constitution. Since the adoption of the MDGs, member states Kenya included have been striving to achieve these by 2015. MDG2 and MDG3 aims at achieving universal primary education and eliminating gender inequality.

In 2003, the Kenyan government introduced the Free Primary Education with the core objective of achieving universal primary education and gender parity. From 1980s up to 2002, primary education was financed through the cost sharing system, where parents and the government shared costs of running primary schools. However, many children were locked out of the primary education system due to lack of tuition fees. Despite the introduction of FPE, there were various challenges being experienced in the primary education system and stakeholders are concerned about the likelihood of declining quality of education due to high primary school enrolment rate (UNICEF Kenya, 2009).

Increased access to primary education is a key concern to various governments' development strategy. For instance, Universal Primary Education forms the basis of implementing Poverty Reduction Strategy by the government through the acquisition

of basic literacy skills, which increases opportunities for employment (World Bank, 2009). Therefore empirical evidence confirms that with the introduction of FPE, Primary School enrolments grew from approximately 7.2 million pupil in 2003 with a GER of 104 % compared to 87.6% in 2002 (Riddell, 2003).

Life table model has been used extensively in fields like insurance applications, biology, epidemiology e.t.c. In insurance applications, in order to price insurance products and ensure the solvency of the insurance companies through adequate reserves, actuaries must develop projections of future insured events such as deaths, sickness and disabilities. To do this, actuaries develop mathematical models of the rates and timing of the events. They do this by studying the incidence of these events in the recent past and sometimes developing expectations of how these past events will change over time (for example whether the progressive reductions in mortality rates in the past will continue) and deriving expected rates of such events in the future usually based on the age or other relevant characteristics of the population.

In his publication, Theodor Abelin (August 14, 1964): Application of Life Table methods to results of epidemiological studies on smoking and mortality;the life table was extensively used to study the life expectancy of smokers. Differences in survival rates and life expectancy between smokers and non smokers were computed from numbers of deaths and many years of exposure.

Posner (1999), used Life Table in his analysis to the onset of dementia in a genetically informative design.The principle objective of his study was to estimate the survival function for time to onset of dementia in initially unaffected twins from when their pattern(index pro band)was diagnosed with dementia of the Alzheimer's type.The survival functions generated by life table analyses were compared by zygotic and gender.

In the use of Life Table and application factors for evaluating chronic toxicity of Kraft mill waste on Daphamia magma by Jerommo (1993), they used Life Tables to calculate age specific survivorship, fecundity, intrinsic rate of population increase (r)and reproductive value $V(a)$ for a population of Mysidopsis bahia chronically exposed in separate tests to mercury and nickel.

Parfait (2004), Pregnancy-Related and Gender inequality in Education: A Life-Table Approach and Application to Cameroon, a Life Table approach was used to estimate how much hypothetical reductions in pregnancy related dropouts would help close the gender gap in educational attainment.

In the field of education, pupils are first enrolled in class one. As they proceed with their studies some drop along the way while others proceed to the final year and then graduate. Each year schools experience a significant drop in the number of pupil who were admitted at the same time and expected to graduate exactly after 8 years.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design, location of the study, target population, sampling procedures and model development. This study used the Life Table model to compute the expected duration of schooling for a primary pupil who enrols in class one in a particular year. The model also helped the researcher to predict the retention rate for the same cohort.

3.2 Research Design

This study used longitudinal design in coming up with the study sample and in its methodology in making reference.

3.3 Location of the study

The study was carried out in Migori Sub County, which is one of the Sub Counties in Migori County, Kenya. It is bordered by Uriri, Nyatike and Kuria West Sub Counties. According to population projection from Kenya National Bureau of Statistics, it has a population of 223,822 people and it covers an area of 490.0 square kilometres.It is cosmopolitan with the major tribes being Luo, Luhya and Somali. It has three divisions with seventeen locations and eight wards. The major river in Migori Sub County is River Migori which flows throughout the year and drain into Lake Victoria. It covers both urban and rural population since the largest town in the county, that is Migori town falls within the Sub County. It also happens that the county headquarters also falls within the same sub county thus enabling the target population to take care of other factors like the background of the pupils. The major economic activity in Migori is farming especially horticultural and tobacco. The area was chosen because of its cosmopolitan nature, being that it has schools both in urban and rural and because of the economic activities which may affect the progress of the pupils.

3.4 Target Population

The target population for the study was the pupils in public primary schools who enrolled in class one in 2007 in Migori Sub County.

3.5 The Study Sample

Since the study was longitudinal, multi-stage sampling was used in order to get the study sample. All the schools in the Sub County are divided into six zones shown in **Appendix 2**. Each of the six zones in the Sub County was sampled using cluster where each zone was allocated a number of schools according to the proportion in the number of schools. Thereafter simple random sampling was used to select schools which were given questionnaires to fill.

3.5.1 Determining sample size

The sample of this research was calculated by Taro Yamane Formula (Yamane, 1973) with 95% confidence level. The formula states that sample size,

$$n = \frac{N}{1 + N(e^2)}$$

where

$$N = \text{ number of people in the population}$$
$$e = \text{ allowable error (\%).}$$

By 2007, there were 119 public primary schools in Migori Sub County (see **Appendix 2**). Hence $N = 119$ and $e = 5\%$.

Therefore, the sample size

$$n = \frac{119}{1 + 119(0.05)^2} = 91(\text{ rounded off }).$$

3.6 Model Development

3.6.1 Class, x

This variable represents the eight classes in the primary school system which were monitored in the study.The classes were arranged downwards in ascending order and it forms the first column of the life table.

3.6.2 Number of pupils in class x, l_x

l_x is the number of pupils in class x. The first one represents the number of pupils enrolled in class one in 2007, the second one show the number of pupils who proceeded to class two in 2008 and the same continues until we get to those who proceeded to class eight in 2014 in the same school. This is done by sex and it forms the basis for calculating other variables that follow in the next columns.

3.6.3 The number of dropouts in class x, d_x

d_x is the number of pupils who have reached class x but dropped out before the end of class x. This is calculated by subtracting survivorship values. That is

$$d_x = l_x - l_{x+1}.$$

3.6.4 The dropout rate in class x, q_x

The fourth column shows the dropout rate at each class. It gives an idea of the intensity of dropout at that stage and is calculated by dividing the number of dropout by survivorship. That is

$$\begin{aligned} q_x &= \frac{d_x}{l_x} \\ &= \frac{l_x - l_{x+1}}{l_x} \\ &= 1 - \frac{l_{x+1}}{l_x}. \end{aligned}$$

3.6.5 Retention Rate in class x, p_x

This variable shows the probability of a pupil proceeding to next class $x + 1$ from class x. It gives the **retention rate** of the pupils in a school. The retention rate of a given class is calculated by subtracting the dropout rate of that class from or one by dividing

the number of pupils who have completed a given class by the number who started the class, excluding transfers and repeaters, i.e.,

$$\begin{aligned} p_x &= 1 - q_x \\ &= 1 - \frac{d_x}{l_x} \\ &= \frac{l_{x+1}}{l_x}. \end{aligned}$$

3.6.6 Expected duration of schooling, e_x

This represents the expected number of classes to be completed by a pupil who has reached class x. It is defined as

$$\begin{aligned} e_x &= \frac{T_x}{l_x} \\ &= \frac{\sum_{i=0}^{\infty} L_{x+i}}{l_x} \\ &= \sum_{i=0}^{\infty} iP_x. \end{aligned}$$

CHAPTER 4

MODEL FITTING

4.1 Tables

Tables 4.1, 4.2 and 4.3 below show the results of the calculations of various Life Table variables.

4.2 Interpretations

4.2.1 School Retention Rate

The retention rate p_x gives the proportion of pupils who survived to the next class the following year. For Migori Sub County, the proportion of pupils who enrolled in class one in 2007 and survived to the next classes are

$$p_1 = 1 - 0.1260 = 0.8740,$$

$$p_2 = 1 - 0.0857 = 0.9143,$$

$$p_3 = 1 - 0.0653 = 0.9347,$$

$$p_4 = 1 - 0.0709 = 0.9291,$$

$$p_5 = 1 - 0.0980 = 0.9020,$$

$$p_6 = 1 - 0.1037 = 0.8963,$$

$$p_7 = 1 - 0.4102 = 0.5898$$

and

$$p_8 = 1 - 1.0000 = 0,$$

at 1, 2, 3, 4, 5, 6, 7 and 8 respectively as shown in column 4 of Table 4.1.

For male pupils, the proportion of pupils who survived to the proceeding classes

Table 4.1: **Life Table Results for All Primary School Pupils in Migori Sub County**

	1	2	3	4	5
class	l_x	d_x	q_x	p_x	e_x
1	4793	604	0.1260	0.8740	6.040
2	4189	359	0.0857	0.9143	5.166
3	3830	250	0.0653	0.9347	4.252
4	3580	254	0.0709	0.9291	3.317
5	3326	326	0.0980	0.9020	2.388
6	3000	311	0.1037	0.8963	1.486
7	2689	1103	0.4102	0.5898	0.590
8	1586	0	1	0	0

Table 4.2: **Life Table Results for Male Primary School Pupils in Migori Sub County**

	1	2	3	4	5
class	l_x	d_x	q_x	p_x	e_x
1	2527	296	0.1171	0.8829	6.088
2	2231	197	0.0883	0.9117	5.205
3	2034	126	0.0619	0.9381	4.293
4	1908	119	0.0624	0.9376	3.355
5	1789	154	0.0861	0.9139	2.417
6	1635	129	0.0789	0.9211	1.503
7	1506	629	0.4177	0.5823	0.582
8	877	0	1	0	0

Table 4.3: **Life Table Results for Female Primary School Pupils in Migori Sub County**

	1	2	3	4	5
class	l_x	d_x	q_x	p_x	e_x
1	2266	335	0.1478	0.8522	5.988
2	1931	136	0.0704	0.9296	5.136
3	1795	120	0.0669	0.9331	4.207
4	1675	136	0.0812	0.9188	3.273
5	1539	168	0.1092	0.8908	2.355
6	1371	181	0.1320	0.8680	1.464
7	1190	481	0.4042	0.5958	0.596
8	709	0	1	0	0

are

$$
\begin{aligned}
p_1 &= 1 - 0.1171 = 0.8829, \\
p_2 &= 1 - 0.0883 = 0.9117, \\
p_3 &= 1 - 0.0619 = 0.9381, \\
p_4 &= 1 - 0.0624 = 0.9376, \\
p_5 &= 1 - 0.0861 = 0.9139, \\
p_6 &= 1 - 0.0789 = 0.9211, \\
p_7 &= 1 - 0.4177 = 0.5823, \\
p_8 &= 1 - 1.0000 = 0,
\end{aligned}
$$

at class 1, 2, 3, 4, 5, 6, 7 and 8 respectively as shown in column 4 of Table 4.2.

Similarly for female pupils, the proportion of pupils who survived to the next

classes are

$$p_1 = 1 - 0.1478 = 0.8522,$$
$$p_2 = 1 - 0.0704 = 0.9296,$$
$$p_3 = 1 - 0.0669 = 0.9331,$$
$$p_4 = 1 - 0.0812 = 0.9188,$$
$$p_5 = 1 - 0.1092 = 0.8908,$$
$$p_6 = 1 - 0.1320 = 0.8680,$$
$$p_7 = 1 - 0.4042 = 0.5958,$$
$$p_8 = 1 - 1.0000 = 0,$$

at class 1, 2, 3, 4, 5, 6, 7 and 8 respectively as shown in column 4 of Table 4.3.

In summary, for Migori Sub County, the retention rates are 87.40%, 91.43%, 93.47%, 92.91%, 90.20%, 89.63% and 58.98% at 1, 2, 3, 4, 5, 6 and 7 respectively. For male pupils, the retention rates are 88.29%, 91.17%, 93.81%, 91.39%, 92.11% and 58.23% at 1,2,3,4,5,6 and 7 respectively. Similarly, the retention rates for female pupils are 85.22%, 92.96%, 93.31%, 91.88%, 89.08%, 86.80% and 59.58% at 1, 2, 3, 4, 5, 6 and 7 respectively.

On the figure (Figure 4.1), Migori represents total number of male and female pupils.

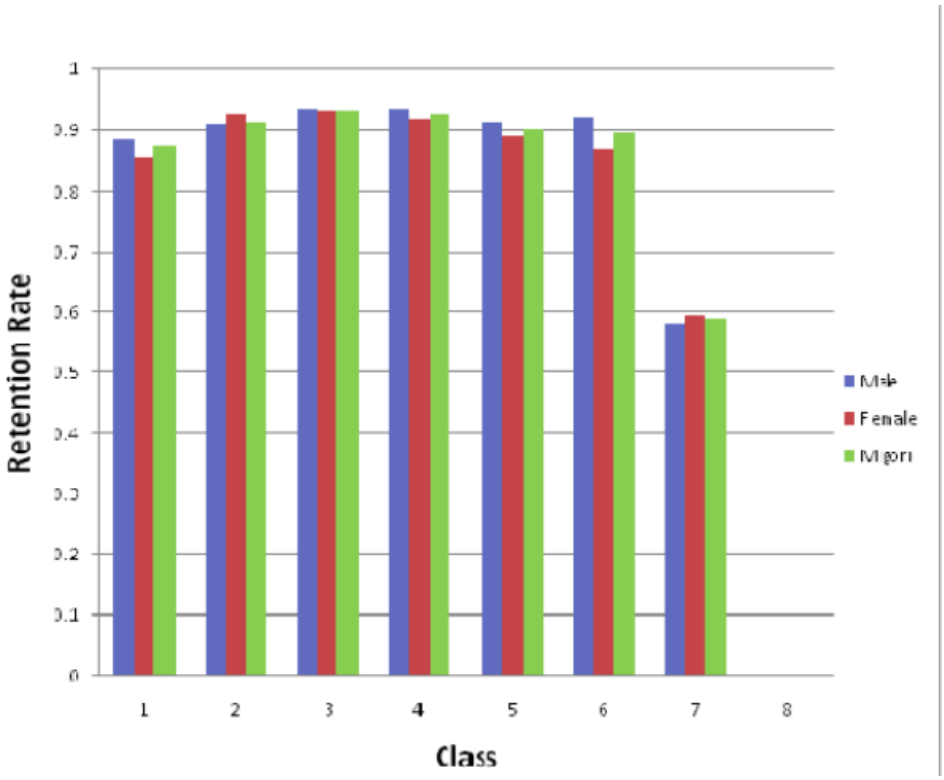

Figure 4.1: A graph showing retention rates by class and sex

4.2.2 Expected Duration of Schooling

The variable e_x gives the years that pupils in level x are expected to take before graduating out of the system by the end of 2014. In order to get this variable, we sum the retention rates for the current class to the last one.

For Migori Sub County, a pupil in class 1, 2, 3, 4, 5, 6, 7 and 8 is expected to stay in the school for 6.040, 5.166, 4.252, 3.317, 2.388, 1.486, 0.59 and 0 years respectively as shown in column 5 of Table 4.1.

On the same note, a boy child in class 1, 2, 3, 4, 5, 6, 7 and 8 is expected to stay in the school for the 6.088, 5.205, 4.293, 3.355, 2.417, 1.503, 0.582 and 0 respectively as shown in column 5 of Table 4.2.

Similarly a girl child in class 1, 2, 3, 4, 5, 6, 7 and 8 is expected to stay in the school for the 5.988, 5.136, 4.207, 3.273, 2.355, 1.464, 0.596 and 0 respectively as shown in column 5 of Table 4.3.

On the figure (Figure 4.2), Migori represents total number of male and female pupils.

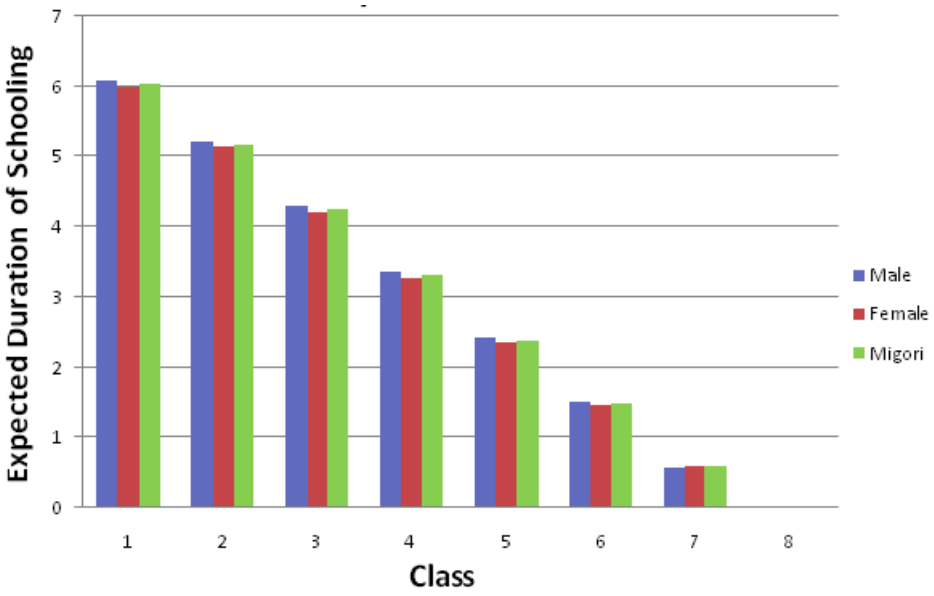

Figure 4.2: A graph showing expected duration of schooling by class and sex

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The following conclusions were drawn from the above analysis and conclusions;

- The retention rates for male pupils are higher than that of female pupils in Migori Sub County except for class 2 and class 7. (See Figure 4.1)
- The expected duration of schooling is higher for male pupils compared to the female pupils in Migori Sub County. That is, a girl child joining class one is likely to stay in the school for 5.99 years while a boy child is likely to stay for 6.09 years.
- The retention rate is lowest in class seven (59.00%) in Migori Sub County
- In general, the expected duration of schooling for all classes is lower than what is normally expected given that there is free primary education and no pupil is supposed to repeat a class. Bearing the conditions above, a child in class 1, 2, 3, 4, 5, 6, 7 and 8 in a given school is expected to stay in the school for 8, 7, 6, 5, 4, 3, 2 and 1 years respectively; but in this case they stay for 6.04, 5.166, 4.252, 3.317, 2.388, 1.486, 0.59 and 0 years respectively.

5.2 Recommendations

From the above conclusions, the following recommendations were made:

- Further studies should be done to determine the causes of the gender disparity in expected duration of schooling in Migori Sub County
- Research should be done to get the root cause of female dropouts in Migori Sub County and recommend the way forward in order to reduce the gender disparity in the Sub County
- Considering the retention rates, research should be done to get into the insight of the reasons for low retention rate in class 7 in the Sub County compared to other classes.

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APPENDICES

Appendix 1. Questionnaire

1. Name of the School:.....Zone:.....

2. Do you have records of your pupils for the 8 years?

   Yes..... No.....

3. If Yes what was the enrolment in the year 2007 in class?

   Male..... Female.....

4. Out of the pupils in Question 3 above, how many proceeded to the next class i.e class 2 the following year?

   Male..... Female.....

5. Out of the pupils in question 4 above, how many proceeded to class 3 in 2009?

   Male..... Female.....

6. Out of the pupils in question 5 above, how many proceeded to class 4 in 2010?

   Male..... Female.....

7. Out of the pupils in question 6 above, how many proceeded to class 5 in 2011?

   Male..... Female.....

8. Out of the pupils in question 7 above, how many proceeded to class 6 in 2012?

   Male..... Female.....

9. Out of the pupils in question 3 above, how many proceeded to class 7 in 2013?

   Male..... Female.....

10. Out of the pupils in question 9 above, how many pupils proceeded to class 8 in 2014?

    Male..... Female.....

Appendix 2. List of Public Primary Schools in Migori Sub County

S/NO	DIVISION	ZONE	SCHOOL
1	SUBA CENTRAL	ANJEGO	ANJEGO
2	SUBA CENTRAL	ANJEGO	EKO
3	SUBA CENTRAL	ANJEGO	FILGONA UPANDYA
4	SUBA CENTRAL	ANJEGO	KAKRAO
5	SUBA CENTRAL	ANJEGO	KANYADERA
6	SUBA CENTRAL	ANJEGO	MAGINA F.A.M
7	SUBA CENTRAL	ANJEGO	MTAVE
8	SUBA CENTRAL	ANJEGO	MUHANYA
9	SUBA CENTRAL	ANJEGO	MWACHI
10	SUBA CENTRAL	ANJEGO	NYAKONYA
11	SUBA CENTRAL	ANJEGO	NYASARE
12	SUBA CENTRAL	ANJEGO	NYIKENDO
13	SUBA CENTRAL	ANJEGO	OTACHO
14	SUBA CENTRAL	ANJEGO	PUNDO APUOCHE
15	SUBA CENTRAL	ANJEGO	RANGENYA
16	SUBA CENTRAL	ANJEGO	RAYUDHI
17	SUBA CENTRAL	ANJEGO	ST. CATHERINE BONDA
18	SUBA CENTRAL	ANJEGO	ST. JOHN NYARONGI
19	SUBA CENTRAL	ANJEGO	ST. KATHRIN WARISIA
20	SUBA CENTRAL	ANJEGO	TINGNA
21	SUBA CENTRAL	ANJEGO	UGARI
22	SUBA CENTRAL	ANJEGO	VIYALO C.O.B
23	SUBA CENTRAL	MIGORI	ASSAR JOHANSON
24	SUBA CENTRAL	MIGORI	KADIKA
25	SUBA CENTRAL	MIGORI	LICHOTA KOJWANG
26	SUBA CENTRAL	MIGORI	MAPERA
27	SUBA CENTRAL	MIGORI	MIDOTI

S/NO	DIVISION	ZONE	SCHOOL
28	SUBA CENTRAL	MIGORI	MIGORI
29	SUBA CENTRAL	MIGORI	MIGORI MUSLIM
30	SUBA CENTRAL	MIGORI	MILIMANI
31	SUBA CENTRAL	MIGORI	NGEGE
32	SUBA CENTRAL	MIGORI	NYAGUBO
33	SUBA CENTRAL	MIGORI	NYAMWARE
34	SUBA CENTRAL	MIGORI	NYANKO
35	SUBA CENTRAL	MIGORI	OCHIENG ORWA
36	SUBA CENTRAL	MIGORI	ONYALO
37	SUBA CENTRAL	MIGORI	ORUBA
38	SUBA CENTRAL	MIGORI	RAGANA
39	SUBA CENTRAL	MIGORI	ST. JOSEPH OMBO
40	SUBA CENTRAL	MIGORI	WITHARAGA
41	SUBA EAST	GODJOPE	ALARA
42	SUBA EAST	GODJOPE	ANDIGO KODITI
43	SUBA EAST	GODJOPE	ANGANGA
44	SUBA EAST	GODJOPE	GOD NGOCHE
45	SUBA EAST	GODJOPE	GODJOPE
46	SUBA EAST	GODJOPE	GOT KACHOLA
47	SUBA EAST	GODJOPE	KILIMANJARO
48	SUBA EAST	GODJOPE	KODILA
49	SUBA EAST	GODJOPE	KOKACH
50	SUBA EAST	GODJOPE	KOWITI
51	SUBA EAST	GODJOPE	KWA
52	SUBA EAST	GODJOPE	KWA HILLS
53	SUBA EAST	GODJOPE	LWANDA D.O.K
54	SUBA EAST	GODJOPE	NYADUONG
55	SUBA EAST	GODJOPE	NYAMOGO
56	SUBA EAST	GODJOPE	OGWEDHI SIGAWA
57	SUBA EAST	GODJOPE	OPASI
58	SUBA EAST	GODJOPE	OSINGO

S/NO	DIVISION	ZONE	SCHOOL
59	SUBA EAST	GODJOPE	RABUOR TAYA
60	SUBA EAST	GODJOPE	RADIENYA
61	SUBA EAST	GODJOPE	REMO
62	SUBA EAST	GODJOPE	SAGEGI
63	SUBA EAST	GODJOPE	SILING
64	SUBA EAST	GODJOPE	ST. PIUS ADUGO
65	SUBA EAST	GODJOPE	THIDHNA
66	SUBA EAST	GODJOPE	WASIO
67	SUBA EAST	GODJOPE	WUOTH OGIK
68	SUBA WEST	BONDO	BONDO NYIRONGE
69	SUBA WEST	BONDO	KASEMBO
70	SUBA WEST	BONDO	KIKOMA
71	SUBA WEST	BONDO	KORWA
72	SUBA WEST	BONDO	KOWINO
73	SUBA WEST	BONDO	LELA
74	SUBA WEST	BONDO	MAGOTO
75	SUBA WEST	BONDO	NDONYO
76	SUBA WEST	BONDO	NYABISAWA
77	SUBA WEST	BONDO	NYAILINGA
78	SUBA WEST	BONDO	NYAMANGA
79	SUBA WEST	BONDO	NYAMILU
80	SUBA WEST	BONDO	NYAMOME
81	SUBA WEST	BONDO	NYANGO
82	SUBA WEST	BONDO	RAMOYA MARANATHA
83	SUBA WEST	BONDO	SAGERO
84	SUBA WEST	BONDO	SANGALA
85	SUBA WEST	BONDO	SINDIANYA

S/NO	DIVISION	ZONE	SCHOOL
86	SUBA WEST	BONDO	SNR CHIEF BARAZA
87	SUBA WEST	BONDO	WI AROT
88	SUBA WEST	GIRIBE	BOYA GIRIBE
89	SUBA WEST	GIRIBE	GIRIBE
90	SUBA WEST	GIRIBE	KITABAYE
91	SUBA WEST	GIRIBE	KOPANGA
92	SUBA WEST	GIRIBE	LWALA GIRIBE
93	SUBA WEST	GIRIBE	MACHICHA
94	SUBA WEST	GIRIBE	MAGONGORIBE
95	SUBA WEST	GIRIBE	MANCHA
96	SUBA WEST	GIRIBE	MUBACHI
97	SUBA WEST	GIRIBE	NYABUKEMO
98	SUBA WEST	GIRIBE	NYAMANGA GIRIBE
99	SUBA WEST	GIRIBE	ORE
100	SUBA WEST	MUKURO	BARASENGO
101	SUBA WEST	MUKURO	ABWAO
102	SUBA WEST	MUKURO	AROMBE
103	SUBA WEST	MUKURO	CHAMABARE
104	SUBA WEST	MUKURO	KIKONGE
105	SUBA WEST	MUKURO	KOKENDI
106	SUBA WEST	MUKURO	KOSEGE
107	SUBA WEST	MUKURO	KOTUNGA
108	SUBA WEST	MUKURO	MAGACHA
109	SUBA WEST	MUKURO	MALERA
110	SUBA WEST	MUKURO	MARABIKO

S/NO	DIVISION	ZONE	SCHOOL
111	SUBA WEST	MUKURO	MASARA
112	SUBA WEST	MUKURO	NYAMBECHE
113	SUBA WEST	MUKURO	NYAMBONA
114	SUBA WEST	MUKURO	NYAMUNDA
115	SUBA WEST	MUKURO	NYASOKO
116	SUBA WEST	MUKURO	OBEMBO
117	SUBA WEST	MUKURO	RAHA
118	SUBA WEST	MUKURO	SIBUOCHE
119	SUBA WEST	MUKURO	ST. CATHERINE KIORU