

**INFLUENCE OF FAMILY SOCIAL ECONOMIC PARAMETERS ON  
INTERNAL EFFICIENCY OF PUBLIC PRIMARY SCHOOLS IN  
WESTERN PROVINCE OF RWANDA**

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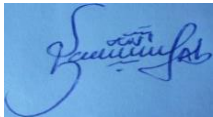
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## DECLARATION


I declare that this thesis is my original work and has not been presented in any other University or Institution for consideration.

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## **DEDICATION**

I dedicate this work to all people of good who are committed to an educational development of vulnerable children in Africa and to all people whose achievements depend on personal determination.

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## **ACRONYMS AND ABBREVIATIONS**

**12 YBE:** Twelve Years Basic Education

**9YBE:** Nine Years Basic Education

**APA:** American Psychological Association

**DDE:** District Direct of Education

**DFID:** Department for International Development

**DHS:** Demographic Health Survey

**DPEM:** District Plans to Eliminate Malnutrition

**ECDE:** Early Childhood Development Education

**EDPRS:** Economic Development and Poverty Reduction Strategies

**EGMA:** Early Grade Mathematics Assessment

**EGRA:** Early Grade Reading Assessment

**EICV:** Integrated Housing Living Survey

**GDP:** Gross Domestic Product

**GoR:** Government of Rwanda

**ICAI:** Independent Commission for Aid Impacts

**IDCJ:** International Development Centre for Japan



**ISCO-08:** International Standards Classification of Occupation of 2008

**JICA:** Japan International Cooperation Agency

**JKF:** Jemo Kenyatta Foundation

**LODA:** Local Administration Entities Development Agency

**MIGEPROF:** Ministry of Gender and Family Promotion in Rwanda

**MINALOC:** Ministry of Local Government

**MINEDUC:** Ministry of Local government

**MINICOFIN:** Ministry of Finance and Economic Planning

**NISR:** National Institute of Statistics of Rwanda

**RDB:** Rwanda Development Board

**RGB:** Rwanda Governance Board

**RPHC4:** Fourth Population and Housing Census of Rwanda

**Std. Dev:** Standard deviation

**UIS:** UNESCO Institute of Statistic

## ABSTRACT

Education is the process by which human beings acquire attitudes, norms, culture, values, knowledge and skills that help receivers (learners) to become useful members of the society. The purpose of this study was to investigate the influence of family social economic parameters on internal efficiency in public primary schools in Western Province of Rwanda. This study was guided by four specific objectives and four research hypotheses focusing on parental occupations, parental incomes, parental educational levels and family housing conditions and their influences on internal efficiency of public primary schools. The study was guided by educational production function theory. The target population was 96 public primary schools in Western province with 9127 people including 8640 pupils, 384 teachers, 96 headteachers and 7 District directors of Education (DDE). The sample size was 527 respondents, of which 384 were pupils, 115 teachers, 28 headteachers and 2 DDE. Slovene formula for sampling, cluster sampling; systematic sampling; and simple random sampling techniques were sampling techniques adopted in this study. Questionnaires, interview guide and document analysis schedules were taken as research instruments. The collected data was coded and entered into the computer for analysis by using SPSS 22<sup>nd</sup>. Quantitative data was analyzed descriptively (mean, frequencies, percentages and Std. Dev), and inferential statistics (ANOVA, T-test, correlation and regression) were also computed. Qualitative data was analyzed using thematic approach. Throughout the findings, it was revealed that about 40% pupils perform in third division, pupils whose parents were jobless scored the lowest score 45%, dropout and repetition rates was very high among pupils whose parents fishers, the study find strong positive correlation between parental occupation and performance ( $r= 0.85p = 000$ ), negative correlation between parental occupation and repetition ( $r=-0.42, p= 0.00$ ), parental occupation and dropout ( $r= -0.32$ ), from here, it was concluded that there is a statistically significant influence of parental occupations on internal efficiency in public primary schools in Western province of Rwanda. On the second objective, it was established that 53.4% of pupils' families have average income, 66.60% of pupils have never taken breakfast, 68.4 never take Lunch. It was also revealed high dropout and repetition rates among pupils whose parents were in category of I Ubudehe (low income) 41.75% and 36.9% respectively and that pupils in the first category of Ubudehe recoded the lowest mean scores of 49.4%, and that a low positive degree of relationship between parental income and internal efficiency of public primary schools. . On the third objective, it was revealed that most of parents in Western province of Rwanda had primary Level of education (45.9% & 44.8%) fathers and mothers respectively. The study revealed high negative degree of relationship between parental educational levels and dropout rate ( $r= -0.759, P= .000$ ); and Repetition rate ( $r= -0.701, P= .000$ ), and that parental education levels explain 40.3% on the variation of internal efficiency of primary schools in Western province of Rwanda. The study found statistically significant influence of parental educational levels on internal efficiency in primary school. On the fourth objective, findings revealed that a majority of the pupils' families in Western province of Rwanda have more than 6 members, to the same extent in most of the cases pupils living house have more than 4 rooms, 43.9%, 70.8% have electricity and clean water respectively. It was concluded that there is no statistically significant influence of family housing condition on internal efficiency in primary schools in Western Province of Rwanda. Researcher encourage the government of Rwanda to put in place some measures to improve parental incomes

and parental education levels, introduction of school feeding programs in public primary schools in Western province of Rwanda.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the study**

Education is the main agent of change in developed countries as well as in developing countries. Education is described as the process by which the human mind develops by learning. It is received in families, schools, colleges, universities, streets as well as in religious institutions (churches and mosques). Education is also the process by which human beings acquire attitudes, norms, culture, values, knowledge and skills that help receivers (leaners) to be useful members of the society where they belong (JICA, 2011; World Bank,2011; UNESCO, 2014).

Educational reform initiatives in developing counties are aiming at making Education an effective engine for national development. The Governments, the policy makers, private and civil societies have ascertained those developing nations need to invest more in education and ensure that the systems of education are effectively managed so that limited funds allocated to the sector have a maximum influence on educational outputs (graduates) and its outcomes play significant impacts on community welfares (World Bank, 2011, UNESCO, 2011). Education is described as a fundamental human right and a key to development. In order to translate principals embodied in the United Nations Declaration of human rights and thereby realizing the dual gains of education as intrinsic basic rights and means for full development, governments of developing nations declared their commitment through the provision of free primary education to all the citizens in the reasonable time (Tadde,2018).

The push for free primary education in Sub-Saharan Africa began in the 1960s. The first target set was to be achieved in 1975s, the second was to be achieved in 2000s and the third was to be

achieved in 2015 (World Bank, 2011; Hill, 2016; UNESCO, 2014). Despite numerous efforts that have been made in order to achieve education for all by 2015, the current report shows that 258 million of children and youth including 59 million children of primary are out of the school (UIS,2020). Prior to this UIS (2019) revealed that in sub-Saharan Africa net enrollment rate was 81percent whereas, completion rate was 63 percent. In similar vein, MINEDUC (2018) and UNICEF (2018) have revealed that in Rwanda, promotion rate was at 80.0 percent, completion rate was at 78.8 percent and 13.4 percent, 6.7 percent repetition and dropout rates respectively.

Education sector planners need to understand how education systems in their countries are behaving, acting and performing. Good and accurate statistics are essential for effective policy and quality improvement planning whereas wrong statistics lead to the production of wrong policies and poor plans. For example, it is important to know the rates of enrollment by gender and age, the transition rates (promotion, completion, repetition and dropout) from primary to secondary as well as from secondary to universities in every country because are the basic information for effective educational quality improvement planning. Educational planners need also to know the percentage of age cohorts (all children born in a given year) who have access to education, percentage of school cohort (all pupils enter in the school system at specific period of time), this shows the number of pupils completed each grade and graduated, knowledge and skills acquired as well as resources provided to finance the system (UNESCO, 2014).

Internal efficiency is a milestone of each educational institution. Basically, in educational institutions, internal efficiency gives a picture of an operational system of an organization. It comprises of promotion rates, repetition rates, drop-out rates, performance and completion rates. Pupils' completion rate is described as the total number of pupils who successfully completed the requirements of primary schools. It is expressed as the percentage of the total population of

school leaving age. For example, primary school in Rwanda last six years. So, pupils completion rate refers to the total numbers of pupils who fulfilled the requirement of six years of primary school and pass primary leaving examinations. Pupils' repetition rate is described as the proportion of pupil remaining in the same stream more than one academic year while using additional resources of that grade whereas, drop-out rate is described as the percentage of pupils who leave the school before the completion year and promotion rate is described as the percentage of pupils who move to the next level of education (UNESCO, 2014; MINEDUC, 2018; Taddèe, 2008).

Efficient educational institutions stimulated both outputs and outcomes of graduates and they are able to satisfy individual and societal needs. Efficiency is taken as the measure of performance of an educational system. it shows the rates of learners who complete specific level of education without wastages (Taddèe, 2018). There is a direct proportion between efficiency and wastages. This means that, the smaller education wastage is, the more efficiency the system will be. Educational wastage occurs when specific number of learners leave the system before final grade or when learners leave the system with inadequate knowledge and skills required to satisfy individual and societal needs (Victory, 2016). Educational wastage and internal efficiency of an educational system are described through promotion, completion, repetition and drop-out rates.

Ubudehe program is one of the homegrown solutions of Rwanda. It is described as the long-standing practices of Rwandan culture of collective actions and mutual support aiming at solving community problems (MINALOC, 2014). In order to write the poverty reduction strategies paper, the Rwandan Ministry of Finance and Economic Planning (MINICOFIN) partnered with the Ministry of Local Government (MINALOC) to start the Ubudehe program in 2001. (Mupenzi, 2010; UN, 2008; MINALOC, 2016; World Bank, 2016; RGB, 2016). The government

of Rwanda through its agency responsible for good governance (RGB) explained that the purpose of Ubudehe categories was to provide information on the level of support families receive through government social protection programmes, and with the help of Ubudehe programs Rwanda managed to reduce people with extreme poverty from 79 percent in 2001 to 33 percent in 2020 (MINAROC, 2020). The Local Administrative Entities Development Agency (LODA, 2014) introduced new Ubudehe Groups, which divided households into four categories based on their socioeconomic position, property in terms of income, land, and other belongings, and what the family breadwinners do for a job. The country's population was divided into four categories: Category I was comprised with families which do not own a home and struggled to meet basic needs; Category II, included families which own or can rent a home but struggle to find full-time work; Category III, assembled families which own a home but struggle to find full-time work, Families with jobs and farmers which can go beyond subsistence farming to produce a surplus that can be marketed. Last but not least, was group four, it was comprised with individuals with Small and Medium Enterprises (SMEs) capable of employing tens of thousands of people. Families who own significant enterprises, individuals who work for international organizations and industries, and governmental servants all fall within this category (LODA, 2014).

According to American Psychological Association task force on family socio-economic parameters (2007), family socio-economic parameter is a constraint with multiple facets that indicates an individual's standing in the society. This is viewed through resources' perspectives (what someone has or not), through relative perspective (what someone has relative to other people), or from a social class-based perspective (whether the groups someone belongs have more or lesser power and privileges than other group in the society). Socio-economic parameters are described as a collective terminology enshrines parental occupations, parental incomes,

parental educational levels, family environments and the other factors pertaining to the welfare of the families. However, this study focused only on four key variables which were parental occupations, parental incomes, parental educational levels and family housing conditions.

The influence of socio-economic parameters (parental education level, parental incomes, parental occupations and family housing conditions) on internal efficiency (promotion, performance, completion repetition and dropout rates) have been discussed globally, regionally as well as locally. Different scholars from throughout the world have explored the impact of parental educational degrees on internal efficiency. According to UNESCO (2014), Parental education level was conceptualized as the highest grade of education completed by parents in the given educational system in particular country.

Making the point a case, the findings of the study conducted by Farooq, Chaudhry, Shafiq and Berhane (2011) on the impacts of parental education level on students' academic performance in secondary schools in Metropolitan city Pakistan, indicated that students whose parents have higher level of education performed better in standardized tests than their counterpart students whose parents have not attended any formal school. This is true because educated parents can better communicate with children and teachers by making continuous follow up on the learners' academic progress more effectively than illiterate parents. Emeka (2016) conducted a study that found that children with highly educated parents are more driven to excel in school than children with neither highly educated nor less educated parents. Later on, Mamet and Mudassar in (2017), have also asserted that educated parents possess favorable attitudes towards students drop out and repetitions rates. In the study commissioned by Ministry of education in Rwanda in the support of UNICEF aimed to understand dropout and repetition rates of students in Rwanda have revealed dropout and repetition rates are very high in the among children whose household are



in the poorest quantiles and the head of household are not educated or have the lowest level of education (Latelite, 2018).

The influence of parental occupations on internal efficiency have been discussed. International Labor organization (ILO, 2012), conceptualized occupation as any activity or job that an individual does legally with the aim of fulfilling personal needs and community needs. According to Marot (2004), occupations are grouped into two categories; most prestigious occupations and low prestigious occupations. The most prestigious occupations group incorporates education-based employments such as engineering, pharmacy medical surgery and communication analysis. On the other hand, lesser prestigious occupations comprise of the occupations that require lower level of education such as traditional ways of farming, housekeeping, vehicles cleaning, parking lot attendance and bartending. Afterword, international standards classification of occupation presented by ILO (2012), define occupation as a kind of work performed in a job. In this sense, a job was defined as a set of tasks and duties performed, or meant to be formed by a person including for an employer or in self-employment. ISCO-08 have classified the occupations into four categories based on skills level and specialization such as occupation at skill level one; occupation at skill level two; occupation at skill level three and occupation at skill level four.

Gianna and Giannulli (2018), conducted an educational study in Italy, the findings of the study confirmed that the presence of one of the parents in Mathematics related carrier played a significant influence on students Mathematics academic performance. Prior to this, Donesty and Okediran (2012), investigated the influence of parental occupations on students' dropout rates in private secondary schools in Ekiti state Nigeria. The conclusion from the study revealed that students from farming households were more likely to drop out schools than students from

academic households. Right after, Ngetich (2015), carried out a study in Kenya on the influence of parental occupations on students' academic achievement. The findings revealed that maternal employments (salaried) increase enrollment of both girls and boys whereas paternal employments improve only the performance of boys. Not long ago, the study which was also conducted in private secondary schools in Southern Province of Rwanda, and revealed that parental occupation has significant influence on students' academic progression in Seventh Adventist private secondary schools (Rulinda, Elizabeth & Makewa, 2013).

Furthermore, Deguzman and Gallardo (2017), conducted a study on the influence of parental income on students' dropout rates. The findings of this study revealed parental income as a key factor influencing dropout rates of students. Ushie, Owolabi and Emeka (2012), argued that low income of parents contributed to internal inefficiency of secondary schools in Ekiti state Nigeria. This is true because when income is not enough, basic needs and students' academic requirements remain unfulfilled. This created unfavorable learning conditions that can lead to dropout. Furthermore, Ntitika (2014), confirmed that inadequate family income caused learning environmental deficiencies. This leads to low self-esteem of learners and reduced learners' progression to the next level of education hence repeating or dropping out from the school system.

Housing is defined by the United Nations Development Programs (UNDP, 2015) as the process of erecting structures that serve as living quarters for one or more families. Harker (2007) conducted a study in London on the effects of housing on children's life chances. Poor housing has an impact on children's ability to learn at school and at home, according to the study. She further revealed that, homeless children are two or three times more likely to be absent from school than other children due to the disruption caused by temporary accommodations. In

addition, the study conducted in United States of America by Breveman et al., (2011), showed that (90%) of American spend their time indoors, where two-thirds of that is spent in home and very young children spent much time at home. They further noted that healthy homes promote good mental and physical health. Good health depends on having homes that are safe and free from physical hazards in contrast, poor quality and inadequate housing contribute to health problem such as chronic diseases and injuries. Injured child or child with chronic diseases cannot attend school regularly hence academic completion period being affected.

Previously, Martina (2009), conducted a study in Colombia and revealed that housing conditions affect students' academic progression. Students who live in lower standard houses perform lesser than student who lives in higher standard houses. Afterwards, similar study was carried out in Soweto in South Africa by Johannesburg University (2017) and stressed that, the nature and type of houses in which students live affect their educational achievements. Prior to this Abdou-Raheem, (2015), revealed that the students whose family living houses have electricity performed better than student whose family used kerosene and other forms of tradition source of light such as charcoal, firewood and candles.

Poor family socio-economic conditions forced children into child labor in developing county of Africa and Asia (UNICEF, 2013). This implies that the socio-economic magnitude of parents determines the progress of children in schools. According to the paper titled theme report and characteristics of households and housing (NISR,2014), around 55 percent of Rwandan families have completed primary school, 8 percent have completed secondary school, and only 3 percent have completed university. Approximately 83 percent were employed, 2percent were jobless, and 15percent were inactive. About 69 percent of household heads were married, with 17 percent widowed, 11 percent never married, and 4percent divorced. Around 54 percent of female heads

of households are widows, and 32 percent of household heads have some level of schooling. The average private home had four persons. Approximately 74 percent of the population owns animals. Around 90 percent of the population live in their own house, 9 percent in rental, and 1 percent live in the other form of houses. 49 percent live in clustered rural settlement (*Umudugudu*). About 95 percent of total of private residences were constructed using sundried brick walls. Roofing materials used in 99 percent of houses are either iron sheets or local tiles, while glass roofs were completely eliminated prior to 2009.

The report also showed that around 73 percent of Rwandan were collecting water outside their family compound in improved water sources, within them 37 percent collect water from projected springs and well, 28 percent from public taps. About 57 percent rely on tradition source of light within 40 percent use kerosene lamp, 10 percent candles and 8 percent firewood, only 18 percent were having access to electricity. 82 percent of private households in rural areas Rwanda used firewood to cook, 13% use charcoal. About 64% own a radio, 54% own a TV, 2% own computer, 7% were having access to internet, 14% own a bicycle, only 1% owned moto-cycle. This shows us that majority of Rwandans are not rich. It means social economic conditions were below the international standards. The available occupations provide low income, majority of household heads were not educated and majority of housing conditions were not standardized. As effect, internal efficiency was affected. For example, NISR (2014), reported that Western Province recorded the lowest primary promotion rate of 72.50%, highest repetition rate 20.40% and highest dropout rate 7.10%; later on, crimson foundation (2018) also revealed that Western Province of Rwanda performed worse in national examinations of 2017/2018 year-year, 10 marks lesser than another province. Table 1.1 provides from details.

***Table 1. 1 Average rate of completion per Province Rwanda 2017/2018***

No	Province	Completion rate	Position
1	Eastern Province	87.60%	The third
2	Kigali city	92.40%	The first
3	Northern Province	79.50%	The fourth
4	Southern Province	89.80%	The second
5	Western Province	77.20%	The fifth

**Source:** Crimson foundation, (2018)

Table 1.1 shows that Western province Rwanda recoded the lowest completion rate among the other province as indicated by 77.20 percent. This means that 22.80 percent of learners in Western have either repeated or dropped out the school. These findings reveal wastages of educational resources in Western province hence, internal inefficiency being increased. The available literature reveals the gap related to the role of socio-economic parameters on internal efficiency of schools in Rwanda. As a matter of concerns, the impact of family socio-economic characteristics (family living circumstances, parental jobs, parental incomes, and parental education level) on the internal efficiency of primary schools in Rwanda's Western province was explored in this study.

## **1.2 statement of the problem**

Education is described as the fundamental human right and indispensable tool to ensure that both women and men, girls and boys realize their potentials (MINEDUC, 2019). The government of Rwanda has put in place some measures to ensure that education provided to its citizen is of quality. For instance, creation of Rwanda Education Board in 2006, decentralization of education management at local level, provision of free 12YBE, abolition of school fees and introduction of

capitation grants. Even though, the government did all the best to provide equitable access to quality education to all Rwandan learners, earlier studies have showed internal inefficiencies in Western Province of Rwanda. For instance, Crimson (2018) established that learners who attended schools in the Western Province performed worse in national examinations compared to the learners in the other provinces. The Western Province performed lower by as much as 10 points compared to schools in other Provinces. Furthermore, not long ago, National Institute for Statistics of Rwanda (2014), reported that Western Province registered the lowest primary promotion rate of 72.5 percent, highest repetition rate of 20.4 percent, highest dropout rate of 7.10 percent in comparison to the other Provinces. Later on, World Bank report to Rwanda, 2018 indicated that 37 percent of Rwandan children suffer from deficient diseases and this affect mental and physical growth (WFP, 2018). This was in line with UNICEF report (2013), which showed that social economic issues were among the challenges affecting academic progression of many children on the globe. This have created a great concern to the government of Rwanda, education stakeholders and private civil societies, wondering the causes of this crisis in Western schools. Since there was no study carried before to address the major causes of internal inefficiencies in this province, there was a need for this study. The study therefore investigated the influences of some selected family socio-economic parameters such as (parental occupations, parental income, parental educational level, and family housing conditions) on internal efficiency in primary schools in Western province of Rwanda.

### **1.3 Purpose of the Study**

The purpose of this study was to investigate the influence of family socio-economic parameters (parental occupation, parental income, parental educational levels and family housing conditions) on internal efficiency of primary schools in Western province of Rwanda.

#### **1.4 Research Objectives**

This study was guided by the following research objectives:

- i. To determine the influence of parental occupations on internal efficiency in public primary schools in Western Province of Rwanda.
- ii. To examine the influence of parental income on internal efficiency in public primary schools in Western Province of Rwanda.
- iii. To establish the influence of parental educational levels on internal efficiency in public primary schools in Western Province of Rwanda.
- iv. To determine the influence of family housing conditions on internal efficiency in public primary schools in Western Province of Rwanda.

#### **1.5 Research Hypothesis**

The study was guided by the following hypothesis

- a) There is no statistically significant relationship between parental occupations and internal efficiency of public primary schools in Western province of Rwanda.
- b) There is no statistically significant relationship between parental income and internal efficiency in public primary schools in Western province of Rwanda.
- c) There is no statistically significant relationship between parental education levels and internal efficiency in public primary schools in Western province of Rwanda.
- d) There is no statistically significant relationship between family housing conditions and internal efficiency in public primary schools in Western province of Rwanda.

## **1.6 Significance of the Study**

The findings of this study might be significant on the following educational stakeholders: policy makers, educational administrators, learners and parents.

The findings of this study might be useful to policy makers. The results of this study might assist policy makers at Ministry of Local Government (MINALOC), Ministry of Gender Promotion and Family planning (MIGEPROF) and Ministry of Education (MINEDUC) with socio-economic parameters information of families in Western province and its influence on internal efficiencies. This might be used for effective and successful policy making process.

The results of this study highlighted the gap in educational planning. This might be taken as an opportunity for ministry of education to improve quality of education by amending the foregrounded concerns.

The findings of this study showed the influence of parental involvement on internal efficiency of public primary; so the findings of this study might help school managers to trace communication channels which helps parents to know parenting styles which can be used to assist in a struggle to words internal efficiencies of schools. In addition, the findings presented in this study described and clarified the role of parental involvement in pupils' education and its effects on pupils' academic achievement, as well as showing them what they ought to do in order to improve efficiency of an educational system. Furthermore, the other researcher might use the findings of this study to come up with social learning method that can be used to teach adults population in order to improve home-based education.

Last but not the least, the findings of this study might bring much benefit to learners in many ways: It might lighten the parents on the better parenting styles that help to improve learner's



performance at schools which is beneficial to the learners. It might also be beneficial to all the learners who apply provided advice on the recommendation section. Conclusively, the findings of this study might help to improve learning conditions in Western province of Rwanda as well as on the globe, as long as the provided recommendations are well implemented.

### **1.7 Delimitation of the Study**

The purpose of this study was to look into the impact of family social-economic characteristics on internal efficiency of public primary schools in Rwanda's Western province. The study focused on public primary schools in Rwanda's Western province. The study focused on candidate classes, specifically primary six students (P6) who were registered for the 2019/2020 school year's primary leaving examination. The study targeted pupils, teachers, head-teachers and district directors of education (DDE) in Western province of Rwanda as research participants. Data was collected through questionnaires, interview guide and document review schedules. The proposed study activities were scheduled to start from September 2018 till September 2021.

### **1.8 Limitation of the Study**

The respondents especially school leaders were doubtful about the effects of given information of their schools. To overcome this challenge, the researcher assured them confidentiality of given data and he also promised them to use given data only for educational purpose. He recommended respondents not to mention their personal names and the school names as well. Furthermore, before starting data collection, the researcher informed the participants that filling out the questionnaires or answering interview questions were optional, and that they could withdraw if they found it necessary.

Another limitation was inability to have a full control on intervening variable. To overcome this challenge, the researcher employed simple random sampling technique and data was collected using different data collection tools (questionnaire, interview and document analysis schedule), and different groups of respondents were involved.

Last but not the least, there was a problem of language barrier where majority of the respondents especially students were unable to express freely their views in English. To overcome this challenge, the researcher translated the students' questionnaire into Kinyarwanda for easy understanding and interpretation as presented in the appendix III.

### **1.9 Assumption of the Study**

The following study assumptions were used to perform this research project:

- i. That the participants were aware of the study's goals and values, and that they participated and answered questions honestly in order to provide accurate data for the study's findings.
- ii. That in Rwanda's Western province, family socioeconomic characteristics had a major impact on internal efficiency in primary schools.
- iii. That the findings of this study would be used by educational stakeholders in Rwanda's Western province to increase internal efficiency in schools in Western province and Rwanda in general.

### **1.10 Definition of Significant Key Terms**

**Cohort:** It is described as a group of pupils in the same level of education.

**Family income:** describes as the total amount of money received by the family in a specific period.

**Family Socio-economic Parameters:** refers to collective terminology comprising of parental occupations, incomes, education levels, family environment and the other factors pertaining to the welfare of the family.

**Household:** refers to a person or group of individuals who live as one unit (family) and eat at least one meal together every day. It consists mostly of parents (father and mother), children, and, if applicable, a housemaid.

**Housing conditions:** refers to the nature of the family houses (permanent or temporary), materials used in building (bricks, trees, iron sheets etc.), size (number of rooms), and infrastructure (water and electricity).

**Internal efficiency:** refers to the comparison of learning, a non-monetary outcome of education to the cost of education inputs.

**Parental occupation:** refers to the types of jobs that parents do in order to satisfy the needs of the family.

**household:** one or more persons living together and sharing at least one daily meal. People in a private household may or may not be related or may constitute a combination of people both related and unrelated.

**Pupils' completion rate:** refers to the ratio of pupils effectively completing the final grade of primary education.

**Pupils' dropout rate:** Is defined as the percentages of pupils who failed to complete six years of primary schools in Rwanda

**Ubudehe category:** refers to the level of family status measured based on households. The Rwandan population was categorized into four categories based on socio-economic status.

### **1.11 Organization of the Study**

This study is organized into five chapters. Chapter one focuses on background to the problem of the study, Statement of the Problem, Research purpose, Research objectives, Research hypothesis, Significance of the study, Limitation and delimitation of the study, assumptions, definition of significant key terms and organization of the study. The second chapter is a review of related literature, and it discusses the impact of social-economic factors on the internal efficiency of education in Rwanda and throughout the world. Research design and methodology is covered in Chapter 3, which covers topics such as research design, target population, sample and sampling procedures, research instruments, validity and reliability of research instruments, data collection procedures, and data analysis methodologies. The data analysis and discussion of the findings are included in Chapter 4, and the summary, conclusion, recommendations, and suggestions for future research are covered in Chapter 5.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.1 Introduction**

Literature review comprises the views of other scholars on family socio-economic parameters, parental occupations, parental incomes, parental education levels and family environment on internal efficiency of schools, theoretical and conceptual framework, as well as a summary of the literature.

#### **2.2 The Concept of Educational Efficiency**

Term efficiency was defined by different researcher in different ways, but in common, educational efficiency is the comparison of inputs and their related outs (Hanushek, 1986). According to Abegl (2019), The definition of school efficiency appears to be improving educational possibilities for the school-aged population.

In practice, we must measure the inputs in common units if we want to compare the outputs produced by two different sets of inputs. This means that efficiency comparisons will almost always rely on measuring inputs in monetary terms, because the inputs can seldom be compared in other units (Lockheed & Hanushek, 1994). This means that efficiency is concerned with the effective administration of limited resources in a certain educational institution in order to achieve society's goals to the greatest extent possible. When the concept of efficiency is completely grasped and put into practice, it becomes a desired and suitable educational goal.

### **2.2.1 Educational Efficiency and Effectiveness**

Educational efficiency is sometimes mistaken with educational effectiveness, and the two concepts are incorrectly used alternately. The effectiveness of educational resources is determined by whether or they have a beneficial influence on accomplishment and, if so, for how long (Lockheed & Hanushek, 1994). Apparently, because effectiveness does not compare resources or costs directly, what is effective is not always what is most efficient (see, for example, Levin, Glass, and Meister, 1984) for a cost-effectiveness analysis of alliterative inputs. The distinction is simply whether or not direct comparisons of resource utilization in education with resource usage and outputs in other sectors are possible, which reflects whether or not there are mechanisms to compare resource usage and outputs in different sectors. These ideas allow for easy segmentation based on input and output metrics. The system's inputs influence whether to use the terms efficiency or effectiveness. The system's outputs determine whether the efficiency and effectiveness descriptors "internal or external" are used. Since, for example, test score gains cannot easily be compared to mortality rates, educational analysis considering the determinants of test score performance cannot easily be applied to evaluating resource usage across the educational sector and other sectors, it is also impossible to make efficacious decisions without a direct way of comparing inputs.

**Table 2.2 Internal and external effectiveness and efficiency of educational systems**

	<b>Out puts measured in-monetary term (#)</b> Learning achievement	<b>Out puts measured in monetary terms (\$)</b> . Earnings
<b>In puts measured in non-monetary terms</b> (#) e.g. -Numbers of textbooks -Classroom organization -Numbers of teaching experiences	<b>Internal Effectiveness</b> (Technical efficiency): #/#	<b>External Effectiveness</b> (\$/#)
<b>Inputs measured in monetary terms (\$)</b> E.g. Cost of textbooks Teachers' salaries	<b>Internal efficiency</b> (Effectiveness -cost): #/\$	<b>External Efficiency</b> (Benefits -cost): \$/\$

*Source: Lockheed and Hanushek, 1994*

**Note:** All ratios refer to the ratio of outputs to inputs, expressed in either non- monetary (#) or monetary (\$) terms.

\*A system is more internally effective (technically efficient) than other if to produce the same level of out puts fewer of at least one inputs are used.

\*\*A system is more internally efficient than other if to produce the same level of output, it is less costly.

### **Internal Effectiveness**

According to wiki-educator, internal effectiveness was described as the extent to which an organization or programme produce particular outputs which are concrete and measurable. Where outputs are measured solely in educational terms, such as test scores, policy considerations are typically limited to alternative uses of educational resources. Education's inputs comprise both tangible and non-material resources, with the latter word encompassing pedagogical techniques, school and school system organizational structures, as well as teacher time and ability (Johnston & hill, 2014).

Textbooks and teaching materials are examples of material inputs (desks, classroom, etc.). As a result, the term inputs is not limited to those inputs that may be stated as amounts in monetary terms in the discussion. Indeed, we take into account the complicated interactions between pupils

and teachers, as well as moral and psychological support from parents and other family members. Internal effectiveness is also linked to what economists refer to as "technical efficiency," or the structuring of existing resources in such a way that the highest possible output is achieved in a technically efficient manner (Levin, 1976). And for a given input, it would be comparable to maximal internal efficacy.

### **External Effectiveness**

The link between non-monetary inputs and monetary outputs is called external effectiveness. In the field of education, this could refer to the extent to which certain educational approaches or school buses influence students' post-graduate incomes, all other factors being equal (Pschopoulos & Loxley 1958). The link between non-monetary inputs and monetary outputs is called external effectiveness. In the field of education, this could refer to the extent to which certain educational approaches or school buses influence students' post-graduate incomes, all other factors being equal (Pschopoulos & Loxley 1958). Nonetheless, because the resources required to achieve the gain are not stated, this form of study does not provide any policy direction. This type of analysis is typically used as the first step in a cost-benefit analysis (Lockheed & Hanushek, 1994).

### **External Efficiency**

External efficiency is the ratio of monetary outcomes to monetary inputs, which is a common topic in cost benefit analysis. Levin, Glass, and Meiter (Levin, Glass, & Meiter, 1984). External efficiency," or how the entire use of money for schooling compares to other potential public and private uses, has received a lot of attention. External efficiency is defined as the achievement of social goals and objectives; it does not assess immediate output from inputs, but rather the long-term advantages that will be obtained by passing through the system. In simple terms, the



relevance of education to the social and economic prosperity of citizens in a given country determines the external efficiency of any educational system. i.e., graduates' ability to effect transformative change and improve society's working and living conditions. This will be used as a good indicator of the educational system's external efficiency (Tsang, 1988; Ntawiha,2016).

### **2.2.2 Internal Efficiency of Educational System**

Internal efficiency of education, according to Lockheed and Hanushek (1994), is defined as a comparison of learning (non-monetary educational results) to the cost of educational inputs; the analysis most commonly used is cost effectiveness. It deals with the issue of how finances allocated within the educational sector should be handled. Internal efficiency was defined by Abogo (1997) as the amount of learning achieved during school and school age attendance compared to the resources provided, with the percentage of entering students who completed the course as its measure. Thus, internal efficiency refers to the measurement of educational system performance by showing the proportion of students who succeeded.

Internal efficiency is focused with getting the most educational output for a given amount of money. Economists have a simple conceptual criterion for allocating resources across various educational activities: the improvement in educational performance that occurs from spending the least amount of money on an educational activity should be equal across all activities.

Consider a school that is debating whether to purchase new books for students or hire a part-time teacher to tutor individual/individual students. Clearly, the school should spend the money on the activities that would help the students improve their grades the greatest In reality, the school should continue to invest in projects until the educational worth of both options is equal. After the initial aim of workbooks is fulfilled, the value of additional workbooks is likely to diminish,

and at some point, in time, it may be more cost effective to invest in a tutor rather than more books (Levin, Glass, & Meiter, 1984; UNESCO, 2018).

Allocative efficiency or pricing efficiency are other terms for internal efficiency (Levin, 1976). Enrollment rates, performance rates, repetition rates, dropout rates, and completion or graduation rates are all indicators of an educational system's internal efficiency (UNESCO, 2014). When internal efficiency indicator measured is lesser than expected, in relation to inputs, it is called internal inefficiency of educational system.

### **2.2.3 The Concept of Coefficient of Efficiency**

The term coefficient of efficiency was defined by the UNESCO Institute of Statistics (2009) as the ideal number of pupils/years required to produce an x number of graduates from a given school- cohort for a cycle or level of education expressed as percentages of the actual number of pupils/years spent to produce the same number of graduates. A school cohort is a group of students who are educated at the same time. As an alternative, the input/out ratio, which is the reciprocal of the efficiency coefficient, is frequently utilized. One pupil/year is equal to one school year spent in a given grade by a given kid. It describes the impacts of dropout and repetition on the efficiency of the educational process in producing graduates, and it is used to calculate the coefficient of internal efficiency.

To calculate the coefficient of efficiency, divide the ideal number of pupil-years necessary to generate a graduate from a particular school-cohort for a certain level of education by the actual number of pupil-years spent to produce the same number of graduates, then multiply by 100. It's calculated using the reconstructed cohort approach, which takes into account data from enrolling and repeaters across two years (UNESCO; IS, 2009). The data necessary to calculate the

coefficient of efficiency will be found in the school registration, school repetition and enrollment surveys. Numbers of graduates, dropouts, and repetitions by study length will all be required statistically. The coefficient can be determined based on the type of school (public or private), the gender of the students (males or females), as well as school location (rural or urban). The formula used to calculate coefficient of efficiency is expressed as follows:

$$CE_g = \frac{\sum_{j=n}^{n+k} G_{g,j} * n}{\{\sum_{j=n}^{n+k} G_{g,j} * j\} + \{\sum_{j=i}^{n+k} D_{,g,j} * j\}} * 100$$

$$\frac{\sum_{j=n}^{n+k} G_{g,j} * n}{\{\sum_{j=n}^{n+k} G_{g,j} * j\} + \{\sum_{j=i}^{n+k} D_{,g,j} * j\}} * 100$$

Where:  $CE_g$  Coefficient of efficiency for a pupil-cohort g

$G_{g,n}$  Number of pupils graduating from cohort g in final grade n after n years of study (without repetition)

$G_{g,j}$  Numbers of pupils graduating from cohort g in final grade n after j years of study

$D_{g,j}$  Number of pupils (of the cohort g) dropping out after j years of study

k number of repetitions allowed

n normal duration of study for a cycle or level of education

g pupil-cohort

j number of years of study

When the results of a computed or calculated coefficient of efficiency approach 100 percent, it indicates that there is a high overall level of internal efficiency in creating graduates and that there is no wastage due to repetition or dropout. Determine the effects of dropout and repetitions on the effectiveness of the educational system when the calculated coefficient ratio is less than 100%. And any point with a value greater than one causes inefficiency.

### The concept of Year-input- by grade

Year input by grade was defined as the average number of pupil-years spent by pupils or students from a specific cohort who graduate from a given cycle or level of education, excluding pupil-years lost owing to dropout and repetition. It's important to remember that one pupil-year is equal to one school year spent in a grade by a student. Educational planners can use YIG to determine the level of educational efficiency in terms of the expected average number of years required to produce a graduate. The following formula summarizes the calculating method.

$$YIG_g = \frac{\{\sum_{j=i}^{n+k} G_{g,j} * j\} + \{\sum_{j=1}^{n+k} D_{g,j} * j\}}{\sum_{j=n}^{n+k} G_{g,j}} \frac{\{\sum_{j=i}^{n+k} G_{g,j} * j\} + \{\sum_{j=1}^{n+k} D_{g,j} * j\}}{\sum_{j=n}^{n+k} G_{g,j}}$$

Where:  $YIG_g$  Year inputs per grade (for graduate belonging to cohort).

$G_{g,j}$  Graduate from cohort g after j years of study

$D_{g,j}$  Dropout from cohort g after j years of study

k Number of repetitions allowed

n Normal duration of study for a cycle or level of education

g Pupil-cohort

j Number of years of study

The following are some examples of how outputs are understood after they have been computed:

The better the internal efficiency and the lower the negative impacts of repetition and dropout, the closer the values of this indicator are to the theoretical number of grades (or duration) of the prescribed school cycle. When a large number of pupil-years per graduate is compared to the average length of time, it indicates resource waste and inefficiency.

## The concept of School Life Expectancy (SLE)

School life expectancy is defined as the total number of years of schooling that a kid of a certain age might anticipate to receive in the future, assuming that the chance of his or her being enrolled in school at that age is equal to the present enrollment ratio. Calculating school life expectancy has the goal of determining an educational system's overall level of progress in terms of the excess number of years of schooling available to the eligible population, including those who never attended school (UNESCO. IS, 2009). To calculate life expectancy for a kid of a certain age, add the age-specific enrolment rates for the levels of education specified, divide by the school-age population for the level of education they are enrolled in, and multiply by the level of education's duration. The sum of the age-specific enrolment rates is then calculated. The formula below provides the summary

$$SLE_a^t = \frac{\sum_{i=a}^n \frac{E_i^t}{P_i^t} + \sum_{i=level-ed} \frac{E^{tunknown}}{P^{tage-oflevel-1/D_1}}}{\sum_{i=a}^n \frac{E_i^t}{P_i^t} + \sum_{i=level-ed} \frac{E^{tunknown}}{P^{tage-oflevel-1/D_1}}}$$

$SLE_a^t$  school life expectancy at an age in year-t

$E_a^t$  Enrollment of the population of age i (for  $i=a, a+1, \dots, n$ ) in school year t; n denotes the theoretical upper age-limit of schooling

$P_1^t$  Population of age i in school year -t age of level 1 denotes the total school age population of that level

$D_1$  Theoretical duration of the level1

The following are some possible interpretations of the calculated life expectancy results: A high SLE means that students are more likely to spend longer years in school and have a higher overall retention rate within the educational system. Due to repetition or dropout, it is not always the

case that the expected number of years corresponds to the expected number of grades completed. Because school life expectancy is an average based on participation in various levels of education, the number of years of schooling expected may be lowered due to the large number of children who never attend. Those who attend school may benefit from more years of schooling than the ordinary child.

### **The concept of Survival Rate**

The phrase "survival rate" was defined as the proportion of students enrolled in the first grade of a specific level or cycle of education in a given school year who are projected to progress to the next grade. The survival rate is important since it aids in determining the educational system's retention capability and internal capacity efficiency. It also aids in illustrating the situation in terms of student retention from grade to grade in schools, as well as the degree of dropout by grade. The method of calculation was summarized in the formula below.

$$SR_{g,i}^k = \frac{\sum_{t=i}^m P_{tg,i}}{E_{kg}} * 100 \frac{\sum_{t=i}^m P_{tg,i}}{E_{kg}} * 100$$

where:  $P_{g,i}^t = E_{g,i+1}^{t+1} - R_{g,i+1}^{t+1}$

i grade (1,2,3...n)

t year (1,2,3...m)

g pupil-cohort

$SR_{g,i}^k$  survival rate of pupil-cohort g at grade i for a reference year k

$E_g^k$  Total number of pupils belonging to a cohort g at a reference year k

$P_{gi}^t$  promotes from  $E_g^k$  who would join successive grade i throughout successive year t

$R_i^t$  Number of pupils repeating grade i in school year t

The calculated survival rate results are interpreted in the following ways: When the rate is approaching 100%, it indicates a high level of retention and low incidence of drop put/ or dropouts. To compare the level of loss owing to drop out and repetition, a differentiation between survival rate with and without repetition is required. The survival rate to the last grade of primary

school is particularly important for tracking universal primary education, which is a key goal for universal education (UNESCO, 2009).

### **The Concept of Dropout Rate**

The percentage of learners from a cohort enrolled in a certain grade at a given school year who are no longer enrolled in the next school year is defined by educationists as the dropout rate. The educational implications of calculating dropout rate provide confidential information to educational planners and administrators, allowing them to measure the phenomenon of learners from a cohort leaving school without completing their education, as well as the effects on educational systems' internal efficiency. In addition, the dropout rate is an important statistic for analyzing and predicting child or student flows from one grade to the next in a school system. It is computed by subtracting the sum of promotion and repetition rates in a given academic year from 100 percent. It is calculated in the following ways:

$$DR_i^t = 100 - (PR_i^t + RR_i^t)$$

$DR_i^t$  Dropout rate at grade i, in school-t  
 $PR_i^t$  Promotion rate in grade i, in school-t  
 $RR_i^t$  Repetition rate in grade i, in school-t

In terms of dropout rate interpretation, it should ideally approach 0% because a larger dropout rate indicates problems with an educational system's internal efficiency. Dropout rate highlights the gap in educational planning and help education policy maker to know where they will put more emphasis (UIS, 2009).

In Rwanda, education statistical year book published by MINEDUC (2018) showed that at primary level dropout rate was at 7.0 percent in males and 6.3percent in females. This gives average dropout rate of 6.70% increased from 5.7% in 2015. According to Kenya's basic

education statistical booklet 2014, the highest dropout rate was found in the last two classes of the primary cycle, with class seven accounting for 13.60 percent and class eight accounting for 23.19 percent.

### **The Concept of Repetition Rate**

The word repetition rate was defined as the proportion of kids from a cohort enrolled in a certain grade at a given school year who studied in the same grade the following academic year, according to a glossary of education. Calculating the repetition rate is significant because it aids in determining the rate at which students in a cohort repeat a grade and its impact on educational institutions' internal efficiency. It also aids in the analysis and projection of students' flows from grade to grade throughout the educational cycle. To find it, divide the number of repeaters in a given grade in school year t+1 by the number of kids from the same cohort who were enrolled in the same grade in the prior school year t. (UNESCO. IS,2009). The following formula present RR calculation model in brief.

$$RR_i^t = R_i^{t+1} / E_i^t$$

Where:  $RR_i^t$  Repetition rate at grade I in school-t

$R_i^{t+1}$  Number of pupils repeating grade i, in school year-t+1

$E_i^t$  Number of enrolled in grade I, in school year -t

The data that will be used to calculate repetition rate include enrollment by gender for school year, and the numbers of repeaters from the same level of education. The data can be found at school through class register. After calculation or computation depending on calculation tool, the repetition rate will ideally be approached to zero percent. This is due to the fact that, high repetition rate reveals problems in the internal efficiency of educational system and



inconveniencies in instructions used. In Rwanda education statistical year book presented by MINEDUC showed that average repetition rate in primary school was 13.4 percent in 2018 dropped from 18.4 percent. In Kenya the basic education statistical booklet (2014) showed that repetition rate at primary range from 2.0 percent and 7.8 percent where, class seven recode the highest rate and class eight recoded the lowest rate of repetition.

### The Concept of Transition

UIS (2009) defined the transition rate as the number of students admitted to the first grade of a higher level of education in a given year, represented as a percentage of students enrolled in the last grade of the previous year's lower level. To calculate it, multiply the number of new entrants in the first grade of the specified higher cycle or level of education by the number of children enrolled in the last grade of the preceding cycle or level of education in the previous school year. The following formula provided the model calculation summary.

$$TR_{h,h+1}^t = \frac{E_{h+1,1}^{t+1} - R_{h+1+,1}^{t+1}}{E_{h,n}^t} \times 100$$

$TR_{h,h+1}^t$  Transition rate (from cycle or level of education h to h+1 in school year

$E_{h+1,1}^{t+1}$  Number of pupils enrolled in the first grade at level of education h+1 in school year t+1

$R_{h+1+,1}^{t+1}$  Number of pupils repeating the first grade or level of education h+1 in school year t+1

$E_{h,n}^t$  Number of pupils enrolled in final grade n at level of education h in school-t

To compute transition or promotion rates, such as enrolment in the final grade year of a particular cycle or level of education for the year and new entrants to (or enrollment minus repeater) the first grade of a higher cycle or level of education for year t+1. Then there's the class register or

the school census, which are both useful sources for this type of information. Higher transition rates suggest a higher level of access or transition from one level of schooling to the next after computation. They also reflect the following level of education's intake capacity. Low transition rates, on the other hand, may indicate issues with bridging between two cycles or levels of education, as a result of either examination system flaws, or insufficient admission capacity in the higher level or cycle of education, or both. According to MINEDUC, the participation rate of learners aged 4-6 years (nursery age group), 7-12 years (primary age group), 13-18 years (secondary age group), and 19-23 years (tertiary age group) is 31.8 percent, 98.6 percent, 72.4 percent, and 9.8 percent, respectively. This indicates that a special focus was to be placed on increasing the participation of people aged 4-6 years and 19-23 years. It illustrates how and why calculating participation rates is important since it helps policymakers understand where they should focus their efforts. In Kenya, the rate of transfer from elementary to secondary school has increased from 55% in 2009 to 79.60% in 2014.

#### **2.2.4 Efficiency and Wastage in Education**

In education, efficiency refers to the movement of students through a system with the least amount of waste possible (Gandeebo, 2014). It is also the level of learning quality obtained in the system over a specific period of time. It is critical to evaluate the meaning of wastage in education in light of this perspective. In education, the term wastage was used to describe the early removal of students from an educational institution at any point prior to completion.

Learners at any level of education are expected to complete their studies within the time frame specified. According to Mukherjee (2000), if a learner withdraws from a course of study before completing it, that learner or group of learners is considered wastage to the course. As a result,

wastage is defined as the early exit of students from school. i.e., those students were unable to complete the program, and as a result, the time, money, and effort spent on them was a complete waste. As a result, wasting time, effort, and money in education is wasteful. Simply put, educational waste refers to the inefficient use of educational resources such as time, money, and energy. It is for this reason that efficiency and waste are said to be inextricably linked in education. Repeaters, dropouts, non-employment of school leavers, brain drain, and even inadequate usage of educational resources such as computers are examples of waste in education (teachers, building etc.). In a learning institution, for example, professors may be hired but there is no class to teach or there are empty classrooms that are not being used or are wasting space. There is wastage in terms of non-teaching or non-use of classrooms for academic purposes in these circumstances (Gandeebo, 2014).

### **Causes of Educational Wastage**

There are many classifications of the causes of wastage in education system. At the view point of Mukherjee (2000), educational wastage can be grouped into three groups of causes namely: social, economic and educational.

Socially, class and caste distinctions in communities are responsible for most drop outs in school systems. In some ways, the custom of early marriages or betrothals of girls is a barrier and therefore, the cause of dropout mostly among girls. Some religious parents like orthodox views about their girls contribute to wastage in education. Even with boys, some parents do not want their children to mix with power caste boys and girls due to caste constraints. In the same way, co-education of both girls and boys in some places is frowned upon and this leads to wastage of education.

The research conducted where and when showed that 65 percent of wastage in education is due to poverty. For example, children between 10 and 12 years became asset and can contribute to family income rather than nuisance to their parents. This is especially true for girls who are expected to help their overworked mother at home. Furthermore, even when free education is provided, poor parents find it difficult to lose their children's aid on the form. When such children are eventually taken from school, they become educational wastage (Gandeebo, 2014).

Educational causes also count 30 percent of wastage in education. This occurs for instance, when school are ill equipped, poorly housed, or with dull and depressing environment. The school system can also cause wastage in education when under and over age are admitted and kept together in the same classrooms. The under aged children may lose interest in classwork, while the overaged children may run away from school out of shame of being in the same class with younger children.

Education waste can be caused by a lack of enough space or overcrowding in schools with a greater teacher-to-pupil ratio (Hynes,2018). Ineffective teaching, a lack of teacher-student engagement, frequent teacher transfers or high instructor turnover, and numerous class teaching all degrade the quality of instruction and eventually lead to educational waste (Ntawiha,2016). Furthermore, boring and unattractive schools, incomplete schools, inefficient and low-quality teachers, defective examinations, uninteresting curricula, a lack of proper parental attitude, and the absence of school health services and canteen facilities are all factors that contribute to educational waste (unesco,2014; Theogene & Hersborn, 2018). Other reasons of education waste include children suffering from major diseases and the death of their parents, as well as numerous orphans who drop out of school before finishing their education (UNICEF,2016). These are the main reasons for educational squandering. Educational waste manifests itself in a variety of ways,

including dropouts and classroom repetition. Drop out refers to when a student leaves school before completing the course program, whereas repetition refers to when a student fails to receive sufficient grades to allow him or her to enter high school or the next level of education at the end of the school year (unesco,2014). Scholars have devised three methods for measuring educational waste: the Apparent Coherent Method (ACM), the Reconstructed Cohort Method (RCM), and the True Cohort Method (TCM) (TCM).

a) **Apparent Cohort Method (ACM)**

This method can be used to calculate educational waste using cross-sectional or time series data. When cross-sectional data is used, enrolment in class one in a particular year is considered a cohort, and the enrollment figures in all other classes in the same year are compared. A drop in status from one class to another is considered proof of waste (Johnston, 2016; UIS,2018). The strategy, however, only provides a general estimate of educational waste. This means that, for starters, enrolment in class II in a given year is not determined by enrollment in class I in the previous year, but rather by enrollment in class I in the preceding year. Second, repeaters from the previous year, as well as possibly any newly accepted learners who dropped out earlier or who may have immigrated from other institutions, are enrolled in class two.

When employing time series data, UIS (2018) recommends that the ACM views enrollment in class I in a base year as a cohort and determines the link between cohort enrollments in consecutive classes in successive years using diagonal analysis. The formula used under this method is as follows:

$$W = \frac{EC_{t+1}}{EC_t} W = \frac{EC_{t+1}}{EC_t} * 100$$

Where: w stands for wastage

WC<sub>t+1</sub> stand for enrollment in class c+1 in the year t+1

$EC_t$  stand for enrollment in class c in the year t

This method is also not free from limitations when it uses time series data as it does not take into account the aspect of repetition in a class.

#### b) **reconstructed cohort method**

UNESCO (1969) adopted this strategy in their worldwide assessment. It entails year-by-year data on enrollment and repeaters. The number of promoters (P) for each class is first calculated by subtracting the number of repeaters (R) from the total number of enrollment (E) in the class, as follows:  $P = E - R$ . Then, as the residual factor, the number of dropouts (D) is approximated as follows:  $D = E - (P + R)$  is the formula. The RCM also fails to account for students who do not repeat a grade but drop out of school and go on to higher grades in different schools.

#### **The True Cohort Method**

In this method, a group of learners who begin in the first year of the course are followed up on in future years until they reach the final year of the course. This frequently necessitates longitudinal studies, which aid in determining the number of students who leave school at various points in time (UIS,2018). This includes the number of students who transfer to another school, the number of students who repeat classes and the frequency with which they do so, the number of students who receive promotions, and the number of students who return to school after dropping out. In brief, TCM is regarded as the most scientific of the current methods; it entails the use of cumulative record cards, which appears to be time-consuming.

### **2.3 The Concept of Educational Enrollment Ratio**

In the process of analyzing pupil or student flow-rates such as promotion rate, dropout rate, and repetition rate as key indicators of internal efficiency of an educational system, educational planners, researchers, and administrators have shown that data on enrollment ratios are always

the key single most important data in the calculation process (Taddè, 2008). It is due to its role in the process of determining internal efficiency that it was conceptualized in this study. In the last grade of elementary school, the postulated ratios are gross enrollment ratio, net enrollment ratio, age specific enrollment ratio, and gross intake ratio

### **2.3.1 Gross Enrollment Rate**

According to UIS (2009), the gross enrolment ratio is defined as the total number of learners enrolled in a specific level of education, regardless of age, represented as a percentage of the population's eligible official school-age for the same level of education in a given school year. Enrollment was specified by status, according to Canvas (2020). They explained that enrollment status is divided into four categories: active, inactive, concluded, and removed. Active enrollment refers to learners or students who are completely engaged in the course and have access to all course materials and activities. Students who were previously enrolled in the course but can no longer access course content are considered inactive enrolment. This status can be applied to students who have not paid their tuition fees or who have decided to drop out of the course at a later date. Students with a completed status can only see the course in a read-only mode. When a course is completed, students are automatically assigned this status. Students with a deleted enrollment status have had their full enrolment in a course removed. This means that students who have taken the course before and have a record of doing so will be eligible (Canvas, 2020). To compute the gross enrolment rate (GER), UIS (2009) suggests dividing the number of learners enrolled in a specific level of education regardless of age by the population of the age group that corresponds to that level of education, then multiplying the findings by 100.

The formula for GER is expressed as follows:

$$GER^t_h = (E^t_h / P^t_{h.a}) * 100$$

Where  $GER^t_h$  Gross enrollment rate at the level of education  $h$  in school-year  $t$ .

$E^t_h$  Enrollment at the level of education in school-year- $t$ .

$P^t_{h,a}$  population in age group  $a$  which officially corresponds to the level of education in school-year.

The outputs of calculated gross enrollment rate are interpreted in the following ways: Whether learners are in the official age group or not, a high GER implies a high level of participation. Gross enrollment ratios reaching or exceeding 100% imply that a country is theoretically capable of educating its entire school-age population, but they do not reflect the proportion of students presently enrolled. The achievement of 100% GER does not imply that the system enrolls all eligible children in school; nonetheless, when GER reaches 90% for a specific level of education, the total number of spaces for students approaches the number required for universal access to the official age group.

For example, according to Rwanda's educational statistics yearbook (MINEDUC, 2018), the gross enrolment percentage fell from 137.5 percent in 2017 to 139.1 percent in 2018. It also stated that the greater rate of GER is due to students who begin studying later and finish at a later age, as well as many repetitions of students in a class, all of which have an impact on the secondary net enrolment rate, which fell to 71.6 percent in 2017/2018. According to Kenya's basic education report (2014), GER increased from 112.7 percent to 102.10 percent between 2009 and 2014. Over the course of the study, the GER has continuously registered more than 100 percent at primary levels. When the GER is larger than 100%, it shows that there are over and under-aged children in elementary schools. The drop in GER over time could be attributed to the decreasing of repeaters and overage students in primary schools. The end of the catch phenomena can be blamed for the dropout rate in Kenya, which fell from 112.7 percent to 102.15%.



### 2.3.2 Net Enrolment Rate

The net enrolment rate was defined as the percentage of the matching population enrolled in an official age group at a certain level of schooling. The extent of coverage in a given level of education of children and youths belonging to the official age group corresponding to that level of education is shown by net enrollment. To calculate it, divide the number of students enrolled in the official age group for a specific level of education by the population for that age group, then multiply the results by 100 (UNESCO.IS,2009). The formula to calculate Net enrollment was expressed as follows:

$$NER^t_h = (E^t_{h,a} / P^t_{h,a}) * 100$$

Where  $NER^t_h$  Net enrollment rate of education **h** in school-year **t**.

$E^t_{h,a}$  Enrollment of the population of age group **a** at level of education **h** in school-year-**t**.

$P^t_{h,a}$  population in age group **a** which officially corresponds to the level of education in school-year. E.g., if the entrance age at primary school is 7 years with a duration of 6 years, then **a** is (7-12) years.

The outputs of computed net enrollment were interpreted in the following ways: a high rate of NER denotes a high degree of coverage for the official school age population. The theoretical maximum value is 100%. Increasing in NER means that there is an improvement in coverage of specific level of education. The difference between GER and NER highlights the incidence of under-aged or over-aged enrollment. Then, if NER is below 100%, the missing ratio to it, indicates the proportion of children not enrolled at specific level of education. The last education census in Kenya as reported in the report published by Ministry of education science and technology (2014) net enrollment rate was increased from 87.5 percent to 88.0 percent in 2009 to 2014 respectively.

### 2.3.3 Age Specific Enrollment Rate (ASER)

The Age Specific Enrollment Rate is defined as the percentage of people of a certain age who are enrolled, regardless of their level of education, as a percentage of the population of that age. It is useful for educational planners and other interested parties. To determine the extent to which a given age group participates in the educational system. To determine age specific enrollment, multiply the number of learners of a certain age enrolled in educational institutions at all levels of education by the population of the same age.

ASER is calculated with the help of the following formula:

$$ASER_a^t = (E_a^t / P_a^t) * 100$$

Where: ASER<sub>a</sub><sup>t</sup> age specific enrollment rate of the population of age a in school-year t.  
E<sub>a</sub><sup>t</sup> Enrollment of the population of age group a at level of education h in school-year-t.  
P<sub>a</sub><sup>t</sup> = population of age a in school- year-t.

The estimated age-specific enrollment rates are interpreted in such a way that a high ASER denotes a high level of educational involvement among the population of that age group. 100 percent is the theoretical maximum value. Increasing trends might be interpreted as a sign of a person's age group's increasing participation. If the estimated ASER is less than 100 percent, the complement, or the difference between 100 percent and 100 percent, provides a measure of the proportion of the population of that age who is not enrolled.

### 2.3.4 Gross intake Ratio in the last grade of primary (GIRLG)

The gross intake ratio in the last grade of primary school was defined as the total number of new entrants in the last grade of primary school, regardless of age, expressed as percentages of the population at the theoretical entrance age. Calculating the GIRLG is particularly valuable since

it allows you to determine the primary completion rate. It also aids in reflecting the effects of policies affecting the early grades of primary school if they have the potential to affect the final grade of a certain level of education. It also aids educational planners in determining the capacity of the educational system to provide primary completion for the theoretical population entering the last grade of primary school (UNESCO. IS, 2009). To find the GIRLG, multiply the number of new entrants in the final grade of primary school, regardless of age, by the population of the theoretical entrance age to the last grade of primary school. The formula below shows the summary model of calculations.

$$\text{GIRLG} = (\text{NE}_i^t / \text{P}_a^t) * 100$$

GIRLG = Grade intake ratio in the last grade of primary in school year, t.

$\text{NE}_i^t$  = Number of new entrants in the last grade I of primary education in school year, t.

$\text{P}_a^t$  = population of theoretical entrance age a in the last grade of primary in school year, t.

The population of the theoretical entrance age in the last grade of primary school, as well as the number of new pupils entering in the last grade of primary school, e.g., new entrants in p6 in Rwanda, p7 in Uganda, and p8 in Kenya, are necessary for calculation. The information can be found in a country's school registry and population census report. A high ratio suggests a high degree of current primary education completion, according to the findings (outputs).

#### **2.4 The Concept of Family Socio-Economic Parameters**

There are no single-family socioeconomic factors, according to the American Psychological Association's task group on socioeconomic parameters (2007). (FSEP). The FSEP is a multi-faceted constraint that indicates a person's social position. This can be regarded from a resource standpoint, i.e., what someone has or does not have, a relative standpoint (what someone has in comparison to others), or a social class-based standpoint (whether the group someone belongs

to, have more or lesser power and privilege than other groups in the society). Parental jobs, parental income, parental educational levels, and family housing conditions were among the social economic characteristics considered in this study.

#### **2.4.1 Parental Occupation as an influencing factor of internal efficiency**

According to international standards classification of occupations ILO (2012) in the report named ISCO-08, occupation was defined as a kind of work performed in a job, whereas, a job defined as a set of tasks and duties performed, or meant to be formed by a person including for an employer or in self-employment. Thus, occupation is a set of jobs whose main tasks and duties are characterized by a higher degree of similarity. A person may be associated with an occupation through the main job, currently hold a second job, for future or job previously held.

ISCO-08 have classified the occupations into four categories based on skills level and specialization. Skills were described as the ability to carry out the tasks and duties for a given job; whereas skills level was conceptualized as a complexity and range tasks and duties to be performed in occupations. Skills level are measured operationally by considering nature of the work, and level of formal and informal education required. For skills specialization was considered in terms of four concepts (knowledge required; tools and machinery used; materials worked in or with; and the kind of goods and services produced).

Occupation at skills level one; generally, involves the performance of simple and routine physical or manual tasks. In many cases, they require the use of hand hold tools such as shovels, simple mechanical machines (wheelbarrow, hoe, machete, etc.) or simple electrical equipment (Vacuum cleaners). Many occupations at skills level one, requires physical strength and endurance, completion of primary level or first stage of basic education with few days of training was taken

as adequate competency performance skills. It involves occupations such as cleaning, digging, carrying out materials by physical part of the body (hands, head, and shoulders), sorting, storing and assembling goods by hand (UIS,2016). Ensure in every paragraph there is citation.

Occupation at skills level two: Typically, it involves the performance of tasks such as operating machinery and electronic equipment, manipulation, ordering and storage of information. For almost skills level two occupations, the ability to read information such as safety instructions, to make a written-records, completed, and accurately perform simple arithmetical calculation is essential. Many occupations in the second level require relatively advanced literacy and numeracy skills and good interpersonal communication skills as the major part of the work. Majority of the occupation at this level require high level of manual dexterity.

The completion of first stage of secondary school can provide knowledge and skills required for having competencies for second skills level occupations. This can be regarded from a resource standpoint, i.e., what someone has or does not have, from a relative standpoint (what someone has in comparison to others), or from a social class-based one (whether the group someone belongs to, have more or lesser power and privilege than other groups in the society). Parental occupations, parental income, parental educational levels, and family housing conditions were among the family social economic characteristics considered in this study (ILO,2016). When considering the occupation of skill three, it entails the completion of complex technical and practical tasks that necessitate a large body of factual, technical, and procedural knowledge in a specific subject (UNESCO,2018). Furthermore, to ensure compliance with health, safety, and related regulations; prepare detailed estimates of quantities and costs of materials and labor required for specific projects; coordinate, supervise, control, and schedule the activities of other

workers; and perform technical functions in support of professionals are examples of specific tasks performed (UIS,2018).

A high level of literacy and numeracy, as well as a well-developed interpersonal communication skill, are required for occupations at this skill level. These abilities could include the capacity to comprehend complex textual materials, write factual reports, and communicate verbally in a variety of situations. At this level, the completion of at least three years in a high learning institution with considerable relevant work experience and extensive on-the-job training is necessary. Shop managers, medical laboratory technicians, legal secretaries, commercial sales representatives, diagnostic medicals, radiographers, computer support technicians, broadcasting and recording technicians are among the occupations classified at this skills level 3.

The performance of activities that demand complex problem solving, decision making, and creativity based on a large body of theoretical and factual knowledge in a specific topic is typical of occupations at skill level 4. The duties done primarily include analysis and research to expand the body of knowledge in a specific discipline, disease diagnosis and treatment, information transfer to others, and design of structures or machinery for construction and industrial operations. At this level of ability, 4 vocations demand a high level of literacy and numeracy, as well as outstanding interpersonal communication skills. The ability to comprehend complicated written materials and communicate complex ideas in media such as books, photographs, performances, reports, and oral presentations is typically one of these skills. The knowledge and abilities required for competent performers in skill level 4 vocations after completing an educational degree in a high learning institution for 3-6 years and gaining considerable professional work experience. Sales and marketing managers, university and secondary school

instructors, civil engineers, medical physicians, singers, and computer system analysts are only a few examples of vocations in this area (ILO, 2012).

Vocations are classified into two categories, according to Marot (2004): most prestigious occupations and lower ranking occupations. Physicians, surgeons, lawyers, chemical and biological engineers, and communication analysts are among the most respected professions. Food preparation employees, counter attendants, bartenders and assistance, dishwashers, janitors, maids and housekeepers, car cleaners, and parking lot attendants are among the lower-ranking occupations. Work that is classified as high status gives more hard tasks, better skill, and greater control over working environment. Vocations are divided into two categories, according to Marot (2004): the most prestigious occupations and the least prestigious occupations. Physicians, surgeons, lawyers, chemical and biological engineers, and communication analysts are among the most highly regarded professions. Food prep workers, counter attendants, bartenders and assistance, dishwashers, janitors, maids and housekeepers, car cleaners, and parking lot attendants are among the lower-ranking occupations. High-status jobs offer more difficult tasks, higher competence, and more influence over working conditions.

The report Rwanda employments and jobs, a study conducted by the World Bank (2015), looks at what workers in Rwanda are doing and earning, and how this has changed over the past ten to fifteen years, using data from a variety of sources, primarily the three Integrated Households Living Conditions Surveys (EICV1, EICV2, and EICV3) and the 2011 Establishment Census. In 2011, about 2% of the labor force was unemployed, in the sense that they were available for work and actively looking for work, as was the case in many low-income nations.

Despite the fact that over two-thirds of employees have several occupations, underemployment is rampant: in 2011, the median worker worked less than 26 hours per week (in all jobs). Underemployment due to time constraints was 36 percent, which means that 36 percent of workers work less than 35 hours a week but would like to work more. Despite encouraging improvements, agriculture, informality, and low wages continue to characterize Rwandan employment.

In 2011, over 70% of workers worked mostly in agriculture, with the remaining 30% engaged in a variety of nonfarm sectors. Farm self-employment, or those working on their own on their family's farm, accounts for about 60% of employment, with farm wage employment coming in second. Self-employment in small businesses leads the non-farm economy, followed by wage work in the informal sector. Rwandans work in the formal business sector 4% of the time, and the public sector 3% of the time. The modern wage sector accounts for 7% of total employment when taken as a whole. Agriculture, forestry, and fishing; mining and quarrying; Utilities; constrictions; trade (wholesales and retails); hotels and restaurants; transport; storage and communications; finance and insurances; public administration; and other occupations were classified by the World Bank (2011) and NISR (2012) into ten categories. In Ekiti State, Nigeria, Donesty and Okediran (2012) explored the impact of parental employment on student dropout rates. This study found that students from farming families were more likely to drop out of school than children from academic families. The findings of a study conducted in Italy by Gianna and Giannulli (2018) confirmed that the presence of one of the parents in a Mathematics-related career had a substantial impact on students' Mathematics achievement. This was also the conclusion of a study conducted in Kenya by Ngetich (2015) on the impact of parental occupation on students' success in the KCSE Examinations. According to this study, maternal (salaried)



employment increases both girls and boys' enrollments, whereas father employment improves mainly boys' performance. In addition, a study conducted in private secondary schools in Rwanda's Southern Province revealed that students' occupations have a considerable impact on their academic performance (Rulinda, Elizabeth & Makewa, 2013). A lot of research has been conducted all around the world to demonstrate the impact of parental employment on student academic attainment. However, because these studies were conducted in countries with different sociopolitical and economic backgrounds than Rwanda, the findings may alter when undertaken in public elementary schools in Rwanda's Western province.

#### **2.4.2 Parental Income as Influencing Factor of internal efficiency**

Before going into details, let us conceptualize the keys terms. A Family; according to Cambridge dictionary, a family is defined as a group of related people who are related to each other, such as father, mother and their children living together as unit. A family can be nuclear, extended and composite. This study focused on nuclear family which is a group of parents, children and their housemaid living together to form a single household. In this study, *parent* was defined as a person who gives birth or raise a child, i.e., a father, mother or guardian. Income was conceptualized as money received on regular basis from either works done or benefit from investment. The entire pay of all family members is known as family income, which is typically divided between the father and mother.

According to Magrabi et al., (1991), the ultimate purpose of households is to care for the well-being of their members, especially their children. Consumption, defined as the use of commodities by households, is one way to do this. Employing commodities entails purchasing products, using them to maintain one's well-being, and then discarding them. Household demand

for products and services is mostly determined by the product's price, as well as the household's income and wealth, as well as the household's tastes. A budget restriction is defined by the combination of income, wealth, and pricing, which determines what can be purchased. Households (and consequently parents) aim to optimize their utility based on preferences and budget constraints (Case et al., 1999).

Wages, property, and the government are the three main sources of revenue for a family. The primary source of income is work; the secondary source of income (or spendable money) is all of the government's extras (SCP, 2011). Wages can differ depending on household members' jobs and the number of people in the home. At the same time, education can have an impact on the type of work one gets, resulting in disparities in salaries between families and, as a result, disparities in property ownership. Government welfare subsidies are frequently given to low-income households to compensate for their low income, yet top-earning households in the Netherlands still have more available resources than low-income households (Case et al., 1999). Despite the fact that the government provides benefits to families in exchange for social (economic) benefits once children have grown up, families remain the primary responsible for their children's upbringing and having enough money to do so. Because various child-related subsidies have been eliminated by the current Dutch government, the costs for parents are only going to rise. Household budgets are shrinking, which means that utility bills will shrink as well. Furthermore, having more children will reduce the amount of money available for spending. When children get older, there is a slight increase in spendable income, but the only noticeable increase in spendable income for parents occurs when children leave their parents' home (SCP, 2011). As a result, children are a financial burden on their parents.

The results of a study done to determine the impact of parental income on internal efficiency yielded conflicting results. Fannie and Mueller (2008), for example, looked into the impact of parental income on issues related to post-secondary education in Canada. Parental income is strongly connected with university attendance, according to the findings of this study. Concur was discovered in Cherian (2010)'s study in China, which was named "connection between parental income and learners' dropout rates in the South West region of China." The findings indicated that in rural parts of China's South Western region, there is a positive association between parental income and learner dropout rates. A study conducted in Tokyo, Japan, discovered an alternative viewpoint. The goal of the study was to see if there was a link between parental income and student dropout rates in Tokyo. The data revealed that in Tokyo, there is no link between family income and student dropout rates (Machebe, Ezegbe & Onuoha, 2017).

Deguzman and Gallardo (2017) investigated the impact of family wealth on school internal efficiency in Ghana. According to the findings, parental income is a significant factor influencing dropout and repeat rates among students in Ghana's public secondary schools. Ushie, Owolabi, and Emeka (2012) stated that low parental income influences the inefficiency of the educational system in Ekiti State, Nigeria.. This is true because when income is not enough, basic needs and students' academic requirements remain unfulfilled and creates unfavorable learning conditions to the learners. Furthermore, Ntitika (2014), confirmed that inadequate family income cause learning environmental deficiencies. This led to low self-esteem among students which reduce students' academic progress.

In Rwanda, parental income or household income is measured based on Ubudehe category. Ubudehe program is one of the homegrown solutions of Rwanda. It is described as the long-standing practice of Rwandan culture of collective actions and mutual support aiming at solving

community problems (MINALOC, 2014). Ubudehe programme was launched in 2001 by the ministry of finance and economic planning of Rwanda (MINICOFIN) in partnership with Ministry of Local Government (MINALOC) in the bid to draft the poverty Reduction Strategies paper (Mupenzi, 2010; UN, 2008; MINALOC, 2016; World Bank, 2016; RGB, 2016). The government of Rwanda explained that the purpose of Ubudehe categories is to provide information on the level of support families receive through government social protection programmes. The Local Administrative Entities Development Agency (LODA, 2014) created new Ubudehe Categories where households were grouped into four categories based on their socio-economic status and their properties in terms of land and other belongings as well as what the family breadwinners do to earn a living.

The country's population was grouped into four categories as follows; Category I families who do not have a house and can hardly afford basic needs. Category II a family who have a dwelling of their own or are able to rent one but rarely get full time jobs. Category III families who have jobs and farmers who can go beyond substance farming to produce a surplus that can be sold. This category also includes those with Small and Medium Enterprises (SMEs) who can provide employments to tens of people. The final category IV is characterized by the families which own large-scale businesses, individuals working with international organizations and industries as well as public servants (LODA, 2014).

Even though Ubudehe programs through Ubudehe categories helped to determine and explain household's income in Rwanda, there was no study carried to explain relationship between parental income grouped in four categories of Ubudehe and internal efficiency (repetition, dropout, completion et.). For example, under the commission of MINEDUC with the support of UNICEF, Laterite carried out a study aimed to understand dropout and repetition rates in

Rwanda, the concluded that repetition and dropout rate are very high among the households in the poorest quantiles. However, this study was too general, it shows national trends. There is a need to understand internal efficiency of schools in Rwanda in relation to parental income. Thus, a need for this study.

### **2.4.3 Parental Education Level as Influencing Factor of internal efficiency**

According to UNESCO (2018), parental education level refers to the highest level of education attained by parents in a given educational system in a given country. The impact of parental educational levels on school internal efficiency has been discussed in several parts of the world. The Western world saw a growth in compulsory education regulations in the 19th century. As a result, all individuals have received some form of formal education, resulting in a high literacy rate among citizens (Giddens, 2001). Basic abilities such as reading, writing, and math have grown increasingly important in modern society, and obtaining a job now necessitates both this education and a set of certified skills and expertise.

Education has become a requirement for children to flourish in life, parents have been more supportive of their children's education, and parents' roles have changed as educational levels have increased (De Singly and Cichelli, 2003). Schooling has evolved into a family affair, with students being at least somewhat reliant on their parents' educational attainment. After all, parents with limited understanding are less equipped to assist their children with topics they need to learn at school. Furthermore, it is clear that parents with higher education levels spend more time engaging in interaction activities such as walking and playing with their children, which might be explained by a sense of obligation to invest in their children's future well-being (SCP, 2011). These activities may have an impact on academic performance.

Making this point a case, Farooq Chaudhry, Shafiq and Berhane (2011), conducted a study on the impact of parental education level on students' academic performance in metropolitan city of Pakistan. The study findings indicated that students' whose parents have higher level of education performed better in standardized test than their counterparty whose parents were not attended any formal school. This is true because educated parents are better at communicating with their children about schoolwork and keeping track of their development than illiterate parents. Emeka (2012) found agreement in his study, showing that children with educated parents are more motivated to succeed in school than children with less educated parents.

In similar ways, Mamet and Mudassar (2017), asserted that educated parents possess favorable attitudes towards education. Furthermore, the findings of the study conducted by crimson foundation on Rwanda educational multi-covariates confirmed that parental educational level influences effectiveness of school in Rwanda (Haynes, Gill & Uworyabayeho, 2018). According to NISR (2014), 32% of Rwandan household heads are uneducated, 55% have attended primary school, and 8% and 3% have completed secondary school and university, respectively. Female household heads have a two-fold greater rate of no education than males, while rural areas have a three-fold higher rate of no education than metropolitan areas. Conclusion, a number of studies have been concluded to establish the influence of parental education levels on repetition rate of learners but literature showed that there was no study carried out before in Rwanda and showed the influence of parental education levels on pupils' repetition rate in Western province.

#### **2.4.4 Family Housing Conditions as Influencing Factor of Internal Efficiency**

According to United Nations Development Programs (UNDP, 2015), housing is the process of setting buildings that serve as living quarters for one or more families. Harker (2007), conducted a study on impacts of housing on children's life chances in London. The study concluded that

poor housing affects children's ability to learn at school as well as at home; homeless children are two or three times more likely to be absent from school than other children due to the disruption caused by moving into and between temporary accommodations. Later on, the study conducted in United states of America by Breveman et al., (2011), showed that 90% of American spend their time in doors, where two-thirds of that is spent in home and very young children spent much time at home. They further noted that healthy homes promote good mental and physical health.

Good health depends on having homes that are stable, safe and free from physical hazards. In contrast, poor quality and inadequate housing contribute to health problem such as chronic diseases and injuries. Injured child or child with chronical diseases cannot attend school on the regularly hence academic completion period being affected.

Breveman and his associates also indicated that conditions in neighborhoods where homes are located can have powerful effects on child's health as well as social and academic life. Physical, social and economic characteristics on the environment around the child have been increasingly shown short term and long-term effects on children' health. E.g., neighborhood environment may promote health by proving places for children to play, free from crimes, violence and pollution. Good neighborhood environment improves health by offering access to public resources including efficient transportation and effective security as well as good schools.

Martina in (2009), conducted a study in Colombia. The findings of the study revealed that housing conditions affect students' academic achievement. Student who lives in lower standard house performed lesser than student who lives in higher standard houses. Thereafter, similar study was carried out in Soweto South Africa by Johannesburg University (2017), the findings of this study stressed that, the nature and type of houses in which students live have been affected

the academic completion period in Johannesburg University. Prior to this, Abdou-Raheem (2015) conducted an educational study in Nigeria. The findings of the study revealed that students whose living family house have electricity performed better than students use kerosene lamp and other traditional source of light such as firewood, charcoal and candles.

Making local perspective a case, according to the statistics published in a thematic report; characteristics of households and housing RPHC4-NISR (2014), at the national level, males lead 71% of private homes and females lead 29%. The Southern Province has the largest percentage of female-headed households (about 33%). Female-headed households have been observed to be dropping over time, from over 35 percent in Rwanda in 2002 to around 29 percent in 2012. Household heads range in age from 12 to 85 or more, with the average age of male heads being around 40 and female heads being around 51. Only 1% of private household heads are between the ages of 12 and 19, while 76 percent are between the ages of 25 and 59.

According to the RPHC4-NISR (2014), the average size of a private home is roughly four people. Rural households are larger than urban households, and male-headed households are one person larger on average than female-headed households. From 4.6 people in 1978 to 4.3 people in 2012, the average household size shrank somewhat. A total of 58 percent of private households possess animals, according to the study. Ownership by type of livestock shows that poultry, cattle, goats, and pigs are the most popular, with a percentage of private households owning this type of livestock ranging from 15% (pigs) to 32% (goats) (cattle). The Eastern and Southern provinces have the most livestock owned by private families, while the average number of livestock per livestock-owning household is higher in Kigali than elsewhere in the country.



Approximately 49% of private households are situated in clustered rural villages (umudugudu), 34% in dispersed settlements, 14% in squatter housing, and 2% in planned urban housing. The first two are more common in rural areas, while the latter two are more common in cities. The execution of the villagization policy, which has been ongoing since 2002, is responsible for the large number of households located in clustered rural villages. Squatter housing dominates urban housing. Roughly 90% of private homes are categorized as "houses occupied by one private household," whereas about 9% are classified as "houses occupied by several households."

In metropolitan regions, however, the group 'house occupied by numerous households' is more common, accounting for roughly 31% of households in this area of residence. In metropolitan regions, numerous structures in a compound occupied by one or more homes (urupangu) account for roughly 5% of all houses, whereas story buildings occupied by one or more households are almost non-existent. While owner occupation continues to dominate housing tenure, accounting for around 80% of private households, it has been steadily declining since 1978. Tenant occupancy has been on the rise for decades, with a current rate of 15%. In metropolitan regions, 50% of private households are occupied by tenants. Sun-dried brick walls (approximately 55 percent) or wood/mud walls (about 95 percent) are used to construct residential dwellings (about 36 percent). According to reports, the principal roofing material used by 99 percent of Rwandan private residences is either iron sheets (60 percent) or native tiles (39 percent). Iron sheet roofs are used by around 87 percent of dwellings in cities, compared to 54 percent in rural areas. In the Southern, Northern, and Western provinces, local tiles are the most common roofing material, whereas grass roofs have all but disappeared.

Earth/sand is still the most popular flooring material, with about 78 percent of all households having this type of flooring. Concrete flooring is found in around 64% of urban dwellings, compared to only 11% in rural areas. From roughly 10% in 1991 to almost 20% in 2012, the percentage of households with concrete flooring has more than doubled. The term "residential promiscuity" refers to the relationship between the size of a household and the size of the households it shares. In Rwandan houses, there are about two people per bedroom on average. According to NISR (2014), 73 percent of homes get their water from improved sources, the most prevalent of which are protected springs/wells (approximately 37 percent) and public taps outside the property (about 28 percent). In urban regions, the percentage of households using upgraded water sources is higher (about 92%) than in rural areas (about 69 percent). The highest percentage of homes having upgraded water sources was found in Kigali City (about 89%), while the lowest was found in Eastern Province (about 60 percent). Improved water sources are now available to around 73 percent of all homes, up from 51 percent in 1978.

Kerosene lamps (about 40%), candles (about 10%), and firewood (about 8%) are the primary sources of energy for lighting in 57 percent of households. Only approximately 18 percent of households have access to electricity, with the Energy, Water and Sanitation Authority providing 17 percent (EWSA). Electricity from EWSA is the most prevalent source of energy for lighting in urban areas, accounting for roughly 67 percent, whilst kerosene lamps are the most common source of energy for lighting in rural regions (about 44 percent). The percentage of people who use electricity for lighting has risen dramatically from roughly 1% in 1978 to almost 18% today (RPHC4, 2014).

According to the Rwanda Demographic Health Survey (RDHS5, 2015), 95 percent of households use firewood (about 82 percent) or charcoal (around 13 percent) as their primary source of energy for cooking. However, firewood is three times more likely to be used in rural regions (about 93%) than in urban areas (around 31%), and charcoal is 21 times more likely to be used in urban areas (around 63%) than in rural ones (about 3 percent). The Government of Rwanda (GoR) is supporting the installation of energy-saving stoves in households to reduce the high usage of biomass energy. However, just 35% of private households have these energy-saving stoves at the moment.

Radios and mobile phones are the most popular types of Information and Communication Technologies (ICT) equipment in households, according to the RDHS5, (2015) report (about 64 percent and 54 percent respectively). A television is owned by 8% of the population, whereas a computer is owned by 2%. In metropolitan areas, the percentage of households with ICT gadgets is higher than in rural areas Kigali City has the greatest percentage of households with radios and mobile phones. Members of about 7% of private households have access to the Internet. The most prevalent places to access the Internet are cyber cafés, workplaces, and schools. A bicycle is owned by around 14% of all households, while a vehicle or motorcycle is owned by about 1%. In metropolitan areas (particularly Kigali City), the percentage of households owning cars or motorcycles is higher than in rural areas. Bicycles are the most frequent mode of transportation. The Eastern Province has the largest percentage of bicycle-owning households (about 32 percent).

Conclusion, from the available literature discussed above putting into consideration indicators like number of family members, spatial distribution of houses, size, types and structure of family house, characteristics of heads of families, households ownership of livestock, ownership of

specific assets, The need to investigate how households' access to water, sanitation, hygiene facilities, and energy, as well as the physical characteristics of the main building occupied by the family members, types of habit, occupation arrangement, and housing tenure, affect the internal efficiency of public primary schools in Western Province, was highlighted.

## **2.9 Summary of the Literature Review**

The literature relating to the variables of this study has been reviewed in this chapter. According to many scholars' perspectives and research findings, there is a clear link between several socio-economic characteristics and internal efficiency. However, the literature reviewed did not show how far family socio-economic parameters influence internal efficiency in primary school in Western Province of Rwanda. Furthermore, the literature also shows diverse conclusions on how the variables under investigation influence internal efficiency. To take a case in point, Farooq et al. (2011); Gianna and Giannulli (2018), and Harker (2007), argued that family socio-economic parameters influence internal efficiency of schools on the other hand, Wamichwe (2018); Machebe, ezegbe and Onuoha (2017) and Hynes et al. (2018) testified that there is no significant influence of family socio-economic parameters on internal efficiency. Because of the contradictions in the literature, this study was necessary to evaluate the impact of family social-economic characteristics on internal efficiency in primary schools in Rwanda's Western Province. Furthermore, without evidence-based data on socio-economic characteristics and their influences on school internal efficiency, academics may find it difficult to provide relevant advice to educational policymakers on the need to increase internal efficiency of schools. This study bridged the gap by providing empirical data on the impact of selected socio-economic parameters (parental occupations, parental education levels, parental incomes, and housing conditions) on

internal school efficiency (dropout, repetition, performance, and completion rate) in Rwanda's Western province.

## **2.10 Theoretical Framework**

A theory, according to Kerlinger (1979), is a broad statement that summarizes and organizes knowledge by establishing causal relationships between events. Educational Production Function Theory led this research (EPF). Hanushek (1979) proposed this theory, which was further refined by Pritchett and Filmer (1997). Hanushek revised the idea in 2007. The foundation of this idea is a systematic relationship between resources and student outcomes, as well as a relationship between school and student outputs. Production function theory states that physical outputs, production processes, and inputs all have a relationship in economics. Hanushek (1979) went on to say that the number of outputs is determined by the quantity of inputs as well as the limits imposed by the technological process. The education production function, according to Pritchett and Filmer (1997), is a theoretical constraint that gives mathematical form to the production relationship that determines the maximum outputs that may be created from various combinations of a given set of inputs.

The EPF is stated in a function form as  $Q = f(X_1, X_2, X_3, \dots, X_n)$  in any field. Where  $Q$  is the output quality and  $X_1, X_2, X_3, \dots, X_n$  are the input factor quantities.

Bowles (1969) offered an alternative viewpoint, stating that school outputs are judged by scholastic achievement. Bowles (1969) did a study on education production function theory on the advice of the United States of America's education officer. He came to the conclusion that understanding educational production function theory is critical to achieving resource allocation in school policy and long-term educational planning. This is true because each input supplied to the educational process should have an impact on the outputs. The relationship between the

opportunity costs of particular policies and their predicted benefits must be little more than a guess without an estimate of educational technology. The theory of education production function was defined as follows:

$$A=f(x_1, \dots, X_m, \dots, X_n, \dots, x_v, \dots, X_w, \dots, X_z).$$

A= A measure of school outputs, such as a scholastic accomplishment battery score.

X<sub>1</sub>, X<sub>2</sub>,..., X<sub>m</sub> = Variables that measure the school environment. The volume and quality of instructional services, the physical facilities of the schools, and the length of time that the learners are expected to employ these inputs are all variables here.

X<sub>n</sub>,..., X<sub>y</sub> = Variables indicating outside-of-school environmental influences on learning. Parental educational attainment, family incomes, family leave circumstances, and geographic areas, for example.

X<sub>y</sub>,..., X<sub>z</sub> = variables representing learners' starting degree of learning prior to entering the type of schooling in the equation.

This demonstrates that function "f" is the product of a combination of efforts as well as contributions from other variables. This indicates that each variable has a large impact.

The outside school environment, notably family social economic characteristics, was studied using this system. The literature reveals that prior entry pupils' knowledge, as well as general knowledge that learners would have at the end of a specific level of education, is influenced by social economic factors (Hynes, 2018). The estimation of a comprehensive model of the type provided causes major multicollinearity concerns, according to education production function theory. In order to calculate the above-mentioned model. To simplify the representation and lower the multicollinearity problem to a reasonable limit, we need to reduce the number of variables.

That's why we would like to replace the equation.  $A = f(x_1, \dots, X_v)$ .

$A = f[g_1(x_1, \dots, x_v), g_2(x_1, \dots, x_v), g_3(x_1, \dots, x_y), g_4(x_1, \dots, x_z)]$ .

The application of the above, equation into this study will be as follows:

$A = f [O(x_1, x_2, x_3), I(x_4, x_5, x_6, x_7), E(x_8, x_9, x_{10}), H(x_{11}, x_{12}, x_{13})]$ .

Were. A= Internal efficiency of primary school in Western province Rwanda (pupils' academic performance in primary leaving examinations, pupils dropout rates, pupils repetitions rates, and pupils completion rates).

**O:** Parental occupations variables.                      **O<sup>x1</sup>:** formal and informal occupations

**O<sup>x2</sup>:** private and public employments                      **O<sup>x3</sup>:** salaried and self -employments

**I:** parental income variable                      **I<sup>x4</sup>:** the first category of Ubudehe

**I<sup>x5</sup>:** the second category of Ubudehe                      **I<sup>x6</sup>:** the third category of Ubudehe

**I<sup>x7</sup>:** the fourth category of Ubudehe

**E:** parental educational level variables                      **E<sup>x8</sup>:** primary level of education

**E<sup>x9</sup>:** secondary level of education                      **E<sup>x10</sup>:** University level of education

**H:** family housing conditions variable                      **H<sup>x11</sup>:** permanent and temporary house

**H<sup>x12</sup>:** source of power used                      **H<sup>x13</sup>:** nature of house (home, rental, refugee camp).

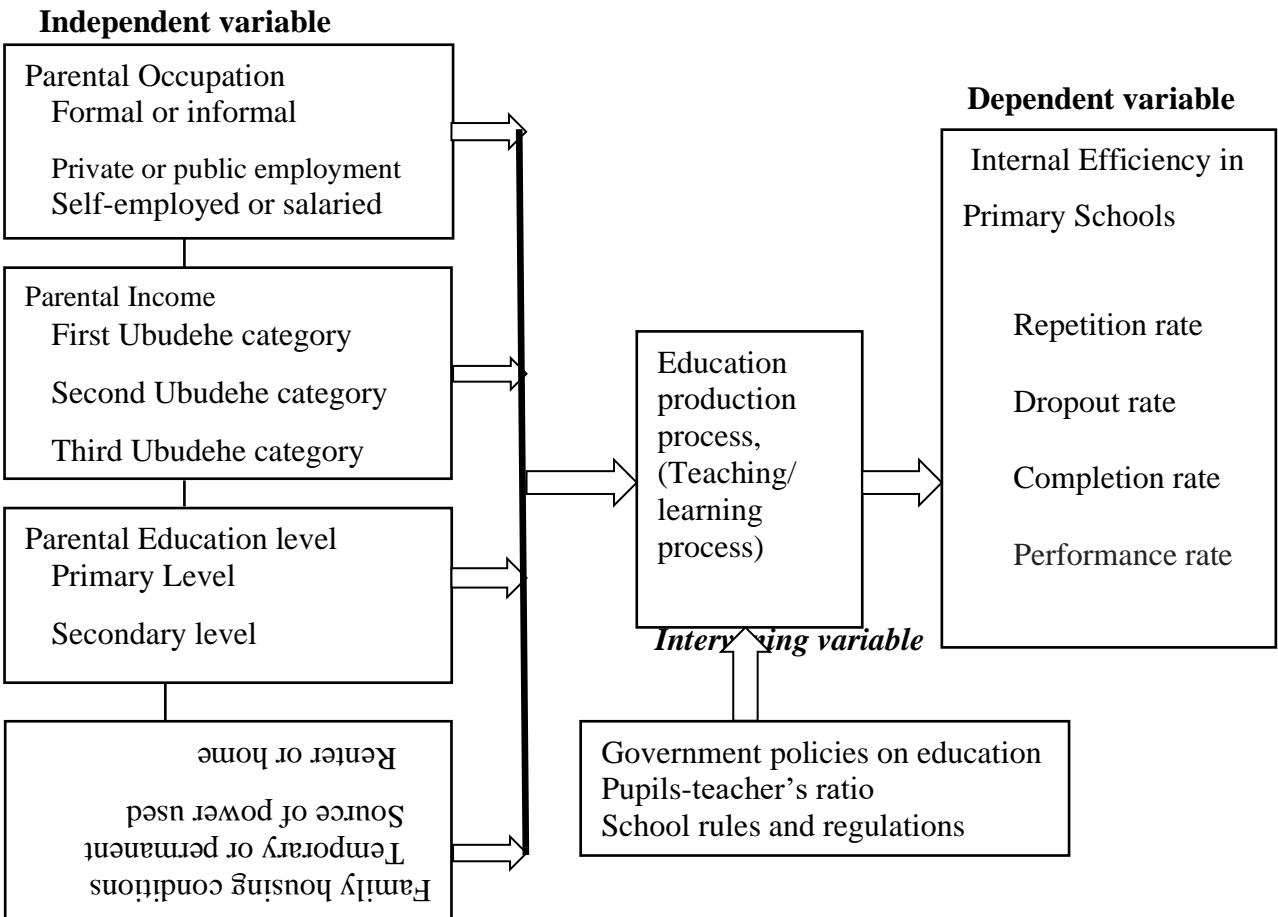
In this study  $X_n$  will be factors such as parental occupations, parental incomes, parental education levels and family housing conditions, on the other hand  $Q$  stand for internal efficient of primary schools in Western Province comprising variables like dropout rates, repetition rates completions and performance rates of pupils in the targeted scope for the study.

In education, education production function theory takes education as an industry that uses a variety of inputs to maximize outputs (Hanushek, 2007). It considers the education sector as a production firm that utilizes inputs to produce outputs and outcomes. The principles of education

production function theory drove this study since the theory establishes a relationship between inputs, processes, and outputs, and the study's goal was to evaluate the effects of family social economic characteristics, which include inputs like parental occupations, parental incomes, parental education levels and family housing conditions, the process was made of teachers qualification, school infrastructure, ICTs infrastructure available in the schools, and school leadership and management strategies whereas internal efficiency of primary schools taken as outputs of the system, and it was embodied with pupils academic performance, pupils promotion rates, pupils repetition rates, pupils dropout rates, and pupils completion rates. Thus, the structure of this study builds system which leads to consistency of adopting educational production function theory.

### 2.11 Conceptual Framework

A conceptual framework is a diagrammatic representation with numerous versions that expresses the link between the study's independent and dependent variables (Mil, 2018).





***Figure 2.1 Conceptual framework shows relationship between social economic parameters and internal efficiency of primary school in Western province Rwanda***

Figure 2.1 is a conceptual frame work of this study. The family Social-economic parameters was taken as independent variable with family housing conditions, parental occupations, parental incomes and parental education levels were taken as indicators of independent variable. Internal primary school efficiency in Rwanda's Western province, on the other hand. Academic performance, dropout rate, repetition rate, student completion rate, and promotion rate of kids were all indicators under the dependent variable.

The Figure 2.1 also showed that parental occupations can influence pupils' academic performance, parental income can influence pupils' dropout rate and pupils' repetition rate can be influenced by parental educational levels. Furthermore, it also presented relationship between family housing conditions and completion rate of pupils.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The research design and methodology employed in this study are explained in this chapter. The research design, study location, target population, sample and sampling procedures, description of research instruments, Pilot study, validity of research instruments, reliability of research instruments, administration of research instruments, data analysis techniques, and ethical considerations are all covered in this chapter.

#### **3.2 Locale of the study**

The Western Province is one of the four provinces that make up the Country of a Thousand Hills, along with Kigali City. It is located in the western portion of Rwanda, bordering Northern Province and the Democratic Republic of Congo to the north, Southern Province to the east, Burundi and the DRC to the south, and KIVU Lake and the DRC to the west. Since January 2006, Karongi District has served as the headquarters of Rwanda's Western Province. The population density of the Western province is 420 square kilometers, with an area of about 5.882 square kilometers (km<sup>2</sup>) and a population of over two million, two hundred twenty-four thousand, seven hundred and forty-two (2,476,942), of which 1,168,445 were men and 1,302,794 were females. The province is located in the following coordinates. It lies between 2.530 degrees south latitude and 1.690 degrees north latitude, as well as 29.180 degrees west and 29.550 degrees east longitude. The Western Province was established by the law No. 29/2005 of December 31, 2005, which established the country's administrative organs. It was formed when the former provinces of Gisenyi, Kibuye, Cyangugu, and a portion of Ruhengeri merged. Rubavu, Nyabihu,

Ngororero, Rutsiro, Karongi, Nyamasheke, and Rusizi are the seven (7) districts that make up the region. 7 districts, 96 sectors, 538 cells, and 3612 villages make up the Western Province.

### **3.3 Research Design**

A research design is defined as a methodical plan devised to investigate a scientific subject (Onen and Oso, 2016). It's the relationship between research questions and methods. A research design can also be defined as a structure developed to find answers to research hypotheses or questions (Johnson et al.,2007).

The mixed method research design, or "MM" design, was used in this study. Mixed Method design is defined by Johnson et al., (2007) as a type of research design in which a researcher or a group of researchers combine both quantitative and qualitative research approaches (for example, the use of quantitative and qualitative point of views, data collection, analysis, and inference techniques) for the broad purposes of depth and sensitive understanding and collaboration. “The results of multimethod research in which just multiple quantitative or only multiple qualitative methodologies are merged is a “MM” design.

Mixed method designs, which combine quantitative and qualitative approaches are particularly convergent parallel mixed methods designs. The rationale for utilizing a mixed methods design is that it incorporates both qualitative and quantitative data into a single study, allowing them to complement each other by combining their strengths (Creswell, 2016). Furthermore, it aids in a deeper understanding of the topic area as well as increasing confidence in conclusions by offering additional evidence while compensating for potential flaws in a single approach. The ultimate goal of mixed methods research is to combine the strengths of quantitative and qualitative research approaches while minimizing their shortcomings in a single study (Onwuegbuzie, 2004).

Survey research design, particularly cross-sectional survey design, was employed in quantitative research design to characterize the demographic information of the respondents, allowing the use of mean, standard deviation, percentages, and variation in presenting and evaluating acquired quantitative data. The phenomenology design was used in qualitative research, and this allowed the researcher to acquire more data in addition to what was gained from the questionnaire. Head teachers and district directors of education were given the semi-structured interview guide, and their perspectives added balance and complementarity to the data collected.

### **3.3 Target Population**

A target population, according to Creswell (2016), is a group of individuals or products with similar characteristics that the researcher wishes to study with the purpose of generalizing the findings. According to Kothari (2012), the target population is made up of all parts of a real or hypothetical group of people or events to which a researcher wants to apply the study's findings. Oso and Onen (2016), in a similar vein, defined target population as the total number of people or situations that the researcher is interested in. Public primary schools in Rwanda's Western province are the study's target demographic.

According to MINEDUC report (2018), public primary schools account 25.5 percent of all primary schools in the country. It is linked as the second in the country of thousand Hills (Rwanda) after Catholic Church which held 39.6 percent and before the protestant owned 22.30 percent of the entire primary school in Rwanda. This study focused on 96 public primary schools, totaling 9127 people, including pupils, teachers, headteachers and District Directors of Education (DDE). The study targeted 96 schools, 96 head teachers, 384 teachers, 8640 pupils, and 7 district directors' education as distributed in the table 3.2.

**Table 3.3 Distribution of Targeted population per district**

N o	District	DDE	Head- Teachers	Pupils	Teachers
1	Rusizi	1	18	1620	72
2	Nyamasheke	1	15	1350	60
3	Karongi	1	13	1170	52
4	Rutsiro	1	13	1170	52
5	Ngororero	1	13	1170	52
6	Nyabihu	1	12	1080	48
7	Rubavu	1	12	1080	48
<b>8</b>	<b>Total</b>	<b>7</b>	<b>96</b>	<b>8640</b>	<b>384</b>

Source: Rwanda Education Board (2019)

### 3.4 Sample Size and Sampling Procedures

According to Bless, et al., (2013), sampling is the process of selecting the participants who will participate in the study. To determine the sample size for this study, researchers chose 30 percent of all accessible public elementary schools in two districts: Karongi and Nyamasheke, because all districts had similar features. In the province, there are 96 public primary schools. The sample size of 28 public schools, 2 DDE, 28 head-teachers and 384 instructors came from 30% of the 96 schools. The sample size for pupils, on the other hand, was calculated using Solvin's sample size calculation formula. To get the representative sample size, divide the entire population by one plus the target population multiplied by the square margin of errors, according to Slovin (Yamane, 1967). The formula was  $n = N / (1 + N(e^2)) = 8640 / (1 + 8640 (0.052)) = 382$  pupils, providing  $n = N / (1 + N(e^2)) = 8640 / (1 + 8640 (0.052)) = 382$  pupils.

N: represents the target population, n: represents the sample size, and  $e^2$ : represents the square of marginal errors.

The respondents of the study were grouped into four strata (pupils, teachers, headteachers and DDE stratum) making sample size of 527 respondents. Within stratum, elements to present each stratum were selected as follow: As shown in Table 3.4, representative elements for pupils were chosen using cluster and simple random sampling; representative elements for teachers were chosen using a systematic sampling technique; and representative elements for headteachers and DDE were chosen using a simple random sampling technique.

**Table 3. 4 Sample Size and Sampling Techniques**

No	Participants	Target population	Sample size	Sampling techniques
1	DDE	7	2	Simple random sampling
2	Headteachers	96	28	Simple random sampling
3	Teachers	384	115	systematic sampling technique
4	Pupils	8640	382	cluster and simple random

**Source:** Researcher, (2019)

### 3.5 Research Instruments

Research instruments, according to Onen and Oso (2016), are all equipment used by researchers to collect data for a study. This research utilized three main research tools: questionnaires, document analysis guides, and interview guides. The research instruments used were primarily concerned with the views, opinions, perceptions, feelings, attitudes, and empirical evidence that served as the foundation for the study objectives and hypotheses' conclusions. There were two types of questionnaires. The questionnaire for students was in category one, and the questionnaire for teachers was in category two. Each questionnaire has two sections: section A and section B. Section A dealt with demographic characteristics, while Section B dealt with research topics. Pupil data was gathered at two separate time intervals. At first, the researcher gathered

information about the sampled pupils' families' socioeconomic circumstances, and then, after the pupils had completed their primary leaving examinations, the researcher returned to the sampled districts and schools to request grades earned by the targeted pupils at the Primary Leaving Examination (PLE) for further analysis. Closed-ended questions were included in research surveys, with dummy numbers 1-5 used to reflect level of acceptance: 1 = never; 2 = seldom; 3 = occasionally; 4 = frequently; 5 = always. Teachers were asked to complete a questionnaire that was divided into two pieces.

Section A contained teacher background information, whereas section B contained closed-ended and open-ended questions. A document analysis guide was also used to enhance the information gathered from the questionnaires and the interview guide. The researcher gathered data on promotion rates, dropout rates, repetition rates, completion rates, and performance rates of primary school pupils at schools, sectors, and district education offices. Interview guide: District directors of education and headteachers were given the interview guide. The interview guide's objective was to provide additional information to what was gathered through questionnaires. Because they have limited time and other obligations, the interview guide was thought to be appropriate for this group of responders. As a result, the interview schedule aided in gaining access to their perspectives in the most effective manner possible.

### **3.5.1 Validity of Research Instruments**

Many researchers have articulated the notion of validity in various ways. Validity, according to Polit and Hungler (1999), is defined as the degree to which data collection instruments measure what they are supposed to measure. When the observed and measured data are the same as what is being measured, research instruments are valid (Johnson and Christensen, 2012).

To a similar extent, Cozby (2016) defines validity as the truth and accurate presentation of a research instrument's content. The two primary types of validity are content and sampling validity. According to Alden (2017), content validity is concerned with the degree to which the test of items represents the domain of the traits being evaluated. Content validity is measured by how effectively the offered research instruments represent all the components of the variable to be measured (Brink, 1996).

Face and sampling validity were determined under content validity. The proposed research instruments were evaluated using peer discussions and expert analysis to see if they were suitable and relevant for the study. The validity of sampling was also examined by the same specialists to see if measuring instruments were sampled appropriately based on the available population. The recommendations provided served as the foundation for an instrument assessment and improved the instruments' validity. In addition, before being distributed to the pupils, questionnaires were translated into Kinyarwanda. The validity of the instruments has enhanced as a result of the translations of students' questionnaires, as the respondents have a better understanding of the genuine meaning of the questions and have provided the appropriate responses.

### **3.5.2 Reliability of Research Instruments**

The consistency of scores over time is referred to as reliability (Mugenda & Mugenda, 2008). It refers to how free of errors measurements are and how consistent the results are. Piloting was the starting point for this study's reliability. According to Polit, Back, and Hunger (2001), the initial test carried out by the research team before widespread data collecting for the proposed study is



the pilot study. The goal of the pilot study was to see if the research instruments chosen for this study were internally consistent and clear.

Piloting not only improved the study's validity and reliability, but it also helped the researcher get more familiar with the research instruments. This was based on McMillan and Schumacher's (2001) proposal that pilot testing only require a small number of elements, such as 10-50 persons or products. The pre-testing was done to check that the items in the study instruments were clearly stated and that the participants understood them. Furthermore, pre-testing assisted the researcher in identifying small issues such as item numbering, which served as a practice run for data collecting. Pre-testing allowed the researcher to refine the instruments by removing typographical errors, spelling issues, and unclear instructions, as well as ensuring that the language was used clearly.

In September 2019, a pilot study was undertaken in the Kicukiro district. Twenty students and ten teachers from G.S Kicukiro were chosen at random and given the questionnaires. Three headteachers and one district education officer in Kicukiro were provided an interview guide. The schools chosen for the pilot were not included in the sample frame. Before beginning actual data collecting, the piloting activity helped to demonstrate the clarity of research equipment. It also assisted the researcher in detecting and correcting minor issues such as numbering, spelling, and other issues that could compromise the clarity of research instruments. To determine the internal consistency of research instruments, Crown's batch Alpha coefficient was calculated. Following the computation of the data, the following results were revealed.

**Table 3. 5: Reliability of pupils' questionnaire**

<b>Reliability statistics</b>	
Cronbach's Alpha	N of Items
.090	39

Table 3.5 shows that the pupil questionnaire had 39 items and was administered to 20 students, with a Cronbach's Alpha coefficient of internal consistency of 0.90. This indicates that the questionnaire was 90% valid.

**Table 3. 6: Reliability of teachers' Questionnaire**

<b>Reliability statistics</b>		
cronbach's Alpha	cronbach's Alpha Based on standardized Items	Numbers of items
.752	.756	34

The reliability findings for the instructors' questionnaire are shown in Table 3.6. It consisted of 34 items and was given to ten teachers; the Cronbach's Alpha coefficient of internal consistency was 0.75. This indicates that the teacher questionnaires were 75 percent valid. For the research instruments of both kids and instructors' surveys, the Cronbach Alpha revealed reliability coefficients of 90 percent and 75 percent, respectively. The instruments employed in this study met the criteria and were regarded extremely reliable and appropriate for data collection, as recommended by Mugenda and Mugenda (2008), Swerdilik (2010), and Nunnally et al., (1978), who said that the minimum acceptable reliability coefficient will be 70%.

### 3.5.3 Trustworthiness of the Qualitative Research Instruments

For qualitative instruments, the reliability has been tested by using the following methods:

**Credibility:** credibility is the confidence that can be placed in the truth of the research findings.

Credibility establishes whether or not the research findings represent plausible information drawn from the participants' original data and is a correct interpretation of the participants' original views (Creswell 2014). The researcher paid a preliminary visit to the sampled public primary schools in Rwanda's Western Province to guarantee reliability. This allowed the researcher to obtain a thorough grasp of the schools and create a trusting connection with the principals and teachers. To provide a background information to the study and explain the intended impacts of the study on education system, community and the globe at large.

**Triangulation:** Triangulation according to Creswell (2014) involves the use of multiple and different methods, investigators, sources and theories to obtain corroborating evidences. Triangulation helped the researcher to reduce bias and it examined the integrity of participants' responses. In this study, source triangulation; methodological triangulations and theoretical triangulation have checked.

**Source triangulation:** source triangulation according to Creswell (2011) is the use of different sources of data or research instruments to enhance the quality of the data from different sources. To achieve this, the data was collected through different sources such as questionnaires, semi-structured interview guide and documents analysis schedule.

**Methodological triangulation:** According to Casey and Murphy (2009), methodological triangulation uses more than one kind of method to study a phenomenon. To ensure this, the

researcher employed mixed method research design where both quantitative and qualitative responses were elicited for this study.

**Theory triangulation:** According to Rohner (1977), theory triangulation is the use of multiple theories from different perspectives, through different lenses, with different questions in mind when examining a phenomenon. The researcher used different theories such as education production theory, system theory and family system theory in order to explain how parental occupations, parental income, parental educational level and family housing conditions influence internal efficiency of schools.

**Confirmability:** According to Tobin and Begley, (2004), confirmability refers to the degree to which the results of an inquiry could be confirmed or corroborated by other researchers. To ensure confirmability and avoid bias at all cost, the researcher recorded and kept data sets of the responses given by the respondents. During a trial interview in the Kicukiro district, it was also determined by member verification criteria. Furthermore, the findings were backed up by the literature.

**Dependability:** Tobin and Begley, (2004) define dependability as the stability of findings over time. To ensure dependability, the researcher employed peer examination approach and discussed the research process as well as the findings with experts (supervisors). It was also discussed with colleagues who have extensive knowledge in qualitative and quantitative method, local supervisors and local experts in the field were consulted. According to Patton (2002) peer examination helps the researcher to be honest about his/her study and peers contribute to his or her deeper reflexive analysis. In addition, colleagues helped to identify the categories not covered by the research instruments.

### **3.6 Data Collection Procedures and Techniques**

The researcher acquired a letter from the University of Nairobi introducing the researcher to the respondents before to data collection. Following that, the researcher presented a recommendation to EPRN (Economic Policy and Research Network of Rwanda) in order to request affiliation, and after receiving an affiliation letter, the researcher requested authorization to conduct research. After having such a permission, the researcher made a request for public primary schools, location and contacts. By using provided list of public primary school sample frame was drawn. Having done with sampling, the researcher paid visit to each of the sampled schools with permission to collect data then explained the nature and the purpose of the study. The researcher requested the list of primary six pupils registered for PLE and teachers so as to plan for data collection schedules. Later on, an appointment to head teachers and DDE was booked for an interview.

During the process of data collection, spot collection method was used to prevent the loss of question. By using this technique, researcher distributed questionnaires to pupils and wait until answering done. well, answered questionnaires were collected back. The researcher sought a help from deputy head teacher in charge of discipline to organize pupils.

### **3.7 Data Analysis Techniques**

Data analysis in this study started with data coding. Data coding was done with SPSS 22<sup>rd</sup> version. Having done with coding, data cleaning was also followed. The following analysis of data was done: descriptive statistics (frequencies, percentages, means, and standard deviation) were computed. Taking into consideration inferential statistics, the following tests were computed based on research objectives as represented in the Table 3.4.

**Table 3.7 Statistical Test Computed per Objective**

<b>Independent</b>	<b>Variables Dependent</b>	<b>Statistical computed</b>	<b>Test</b>	<b>Nature of Variable</b>
1.Parental occupations	Internal efficiency <ul style="list-style-type: none"> <li>● Performance rate</li> <li>● Repetition rate</li> <li>● Dropout rate</li> <li>● Completion rate</li> </ul>	Descriptive & T-test ANOVA		Continuous
2.Parental incomes	Internal efficiency <ul style="list-style-type: none"> <li>● Performance rate</li> <li>● Repetition rate</li> <li>● Dropout rate</li> <li>● Completion rate</li> </ul>	Descriptive & T-test Karl Pearson Product Moment Correlational Coefficient		Continuous
3.Parental education levels	Internal efficiency <ul style="list-style-type: none"> <li>● Performance rate</li> <li>● Repetition rate</li> <li>● Dropout rate</li> <li>● Completion rate</li> </ul>	Descriptive & T-test Linear Regression analysis		Continuous
4.Family housing conditions	Internal efficiency <ul style="list-style-type: none"> <li>● Performance rate</li> <li>● Competition rate</li> </ul>	Descriptive & T-test Linear regression analysis		Continuous

*Source: researcher, 2020*

Thematic approach method was also employed to analyze qualitative data collected through semi structured interview administrated to headteachers and to district directors of education. Tables and graphs and graphical modals were used to provide quantitative conclusions after data analysis, while textual modals were utilized to present qualitative findings.

### **3.8 Ethical Considerations**

All ethical guidelines were followed. First, an introduction letter from the Graduate School at the University of Nairobi was received prior to data collection, introducing the researcher to the respondents as well as EPRN for affiliation. After that, the researcher was granted research

permission by the district authorities, and data was collected. The responders were guaranteed of the privacy and confidentiality of the information provided. On the questionnaires presented, there were no personal identification numbers or names. To avoid plagiarism and fraud, source acknowledgment was implemented.

## CHAPTER FOUR

### RESEARCH FINDINGS, INTERPRETATION AND DISCUSSION

#### 4.1 Introduction

The data analysis section of this chapter covers the questionnaire return rate, general and demographic characteristics of respondents, data findings presentation, analysis, and interpretation. The study's research aims and research hypothesis guided the analysis and interpretations. The following were the research objectives that led this study:

- To determine the influence of parental occupations on internal efficiency of primary schools in Western Province of Rwanda.
- To examine the influence of parental incomes on internal efficiency of primary schools in Western Province of Rwanda.
- To establish the influence of parental educational levels on internal efficiency of primary schools in Western province of Rwanda.
- To establish the influence of family housing conditions on internal efficiency of primary schools in Western Province of Rwanda.

Research hypotheses that guided this study were:

- i. Ho:1. There is no statistically significant influence of parental occupations on internal efficiency of primary schools in Western Province of Rwanda.
- ii. Ho:2. There is no statistically significant influence of parental income on internal efficiency of primary schools in Western Province of Rwanda.
- iii. Ho:3. There is no statistically significant influence of parental education levels on internal efficiency of primary schools in Western province of Rwanda.



iv. Ho:4. There is no statistically significant influence of family housing conditions on internal efficiency of primary schools in Western Province of Rwanda.

There were seven sections in this chapter: Section one contains questionnaire return rates; section two contains general and demographic information about the respondents; section three contains findings on the impact of parental occupations on primary school internal efficiency; and section four contains findings on the impact of parental income on primary school internal efficiency, section five presents findings demonstrating the impact of parental educational levels on primary school internal efficiency, section six presents findings demonstrating the impact of family housing conditions on primary school internal efficiency in Rwanda's Western Province, and section seven presents summary findings of the data presented in chapter four.

#### **4.2 Research Instruments Return Rate**

The proportion of research instruments that are returned after being administered to respondents is known as the research instrument return rate. The questionnaire, semi-structured interview, and document review schedule were used as research instruments in this study. Teachers and students were given questionnaires, while headteachers and district directors of education were given semi-structured interviews. The respondents' perspectives on the impact of family social economic characteristics (parental jobs, parental incomes, parental educational levels, and family housing conditions) on the internal efficiency of primary schools in Western Rwanda are shown in the collected data.

A total of 408 of the 420 questionnaires distributed to students were completed and returned. This results in at 95% return rate for the students' questionnaires. Whereas, out of 115 surveys distributed to instructors, 110 were successfully completed and returned. This resulted in a 95.6 percent response rate for teacher questionnaires. Thirty people were given an interview guide (28

headteachers and 2 districts directors of education). All 30 participants were successfully interviewed, resulting in a 100% of return rate. The results of the study instrument return rates were summarized in table 4.8.

**Table 4.8 Research Instruments Return ate**

<b>Types of instruments</b>	<b>Number administrated</b>	<b>Number returned</b>	<b>% of Return rate</b>
Instruments for DDE	2	2	100 %
Instrument for headteachers	28	28	100 %
Instruments for teachers	115	110	95.6 %
Instruments for pupils	420	408	95 %
<b>Total</b>	<b>565</b>	<b>548</b>	<b>97.65 %</b>

Table 4.8 shows that questionnaires distributed to pupils were returned at the rate of 95 percent, questionnaires distributed to teachers returned at the rate of 95.6 percent whereas semi-structured interview was successful administered to all targeted thirty interviewees which made return rate of 100 percent. This means that the average rate of research instruments was 97 percent. Any research instrument with a return rate of more than 70 percent is considered representative enough for further study, according to Mugenda & Mugenda (2008). The researcher was then permitted to continue with further analysis because the research instrument return rate in this study met the condition.

### **4.3 General and Demographic Characteristics of the Respondents**

Respondents were asked to describe themselves in terms of general and demographic traits. This was done in accordance with Salkind's (2010) recommendations, which said that demographic

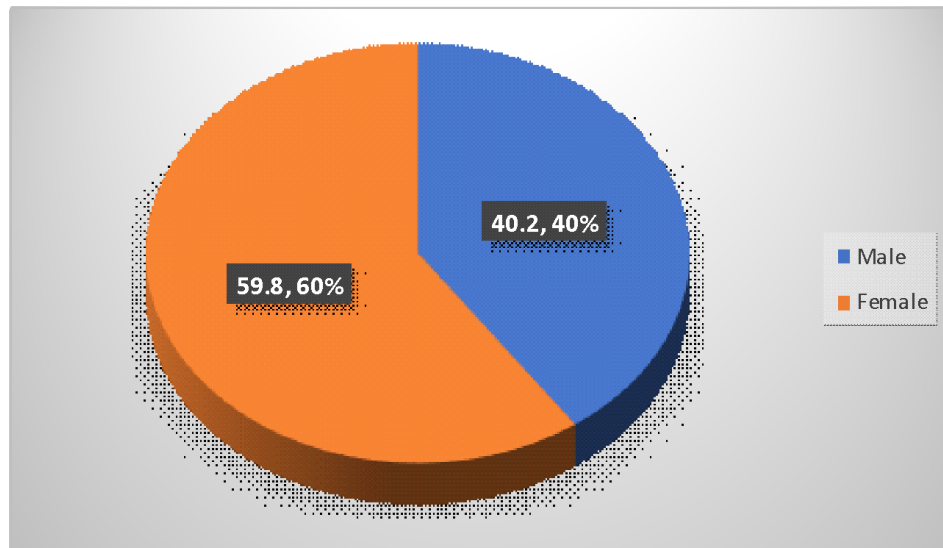
information provides data about research participants. This was crucial because it allowed researchers to see if the people in the study were a true representative sample of the target group for generalization. General and demographic data are employed as independent variables in many studies, and they are used to assess additional factors known as dependent variables. Thus, the gender of the respondents, their age group, marital status, educational levels, professional credentials, and work experience were all taken into account in this study.

### 4.3.1 General and Demographic Characteristics of the Pupils

Pupils in Western province's public primary schools were invited to provide general and demographic information about themselves. Information provided shows gender, age group and Ubudehe category of the pupils' families.

#### i. Distribution of Pupils by Gender

Gender of the learners is very important indicator to consider for any study seeking to describe internal efficiency. Information that shows gender of pupils was presented in Figure 4.2.



*Figure 4.2 distribution of pupils by gender*

Figure 4.2 reveals that 60 percent of the students were female and 40 percent were male. This indicates that in Rwanda's Western province, there are more female pupils than boys' pupils in public primary schools. The figures contrasted with those reported by MINEDUC (2018), which showed that females made up 49.7 percent of the population, while males made up 50.3 percent.

ii. **Distribution of Pupils by Age group**

In any educational study, the age group of the respondents was a crucial component to consider. The age of the subject is used as the starting point for the investigation. Table 4.9 shows the collected data, which shows the age groups of the students.

**Table 4.9 Age group of the Pupils**

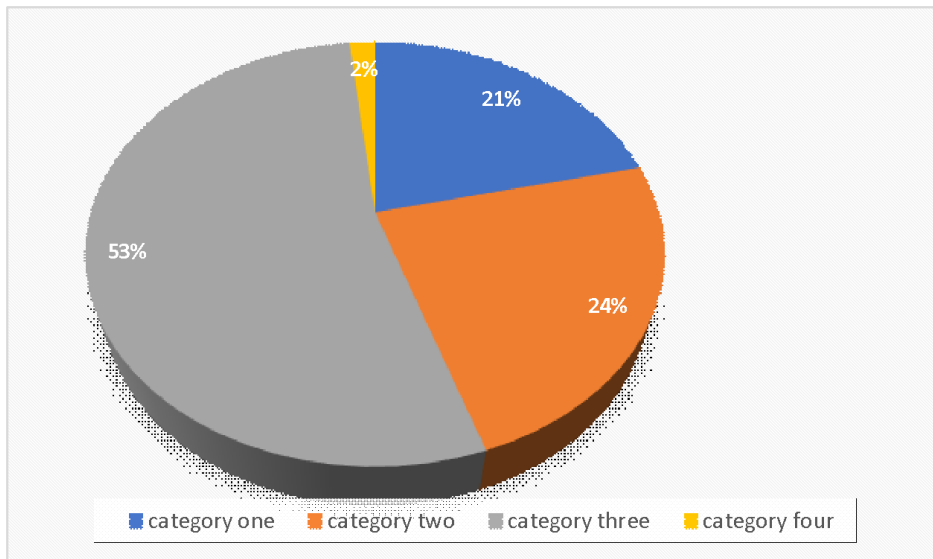
<b>N°</b>	<b>Age group of the Pupils</b>	<b>Frequency</b>	<b>Percentage</b>
1	Between 9-11 years of age	22	5.40%
2	Between 12 - 14 years of age	270	66.20%
3	Between 15-18 years of age	110	26.20%
4	18 years and above	6	1.50%
<b>5</b>	<b>Total</b>	<b>408</b>	<b>100%</b>

Table 4.9 shows that majority of the pupils' age at grade six of primary schools in Western Province vary between 12-14 years of age. This was indicated by 66.60 percent of pupils whose ages were between 12-14years. About 26.20 percent their ages were between 15-18 years. About 5.40 percent had lesser than 11 years of age; 1.80 percent had more than 18 years of age. This tells us that there is high rate of over-aged and under-aged pupils in primary schools of Rwanda.

This is true because MINEDUC (2018) showed that official age to attend primary school is between 7-12year which is free and compulsory.

iii. **Distribution of Pupils by Ubudehe Category**

Ubudehe category is an important factor that shows socioeconomic conditions of families of and households in Rwanda. Information on socio-economic conditions of pupils through Ubudehe categories was presented in the Figure 4.3.



**Figure 4.3: Distribution of Pupils by Ubudehe category**

Figure 4.3 shows that majority of the pupils in Western province were in category three of Ubudehe. This was indicated by 53 percent of pupils who participated in the study. This means that majority of households in Western province have moderately poverty however, the study also indicated a significant number of people with extreme poverty as indicated by 21 percent of pupils’ family who were in the first category of Ubudehe. These findings corroborate with the

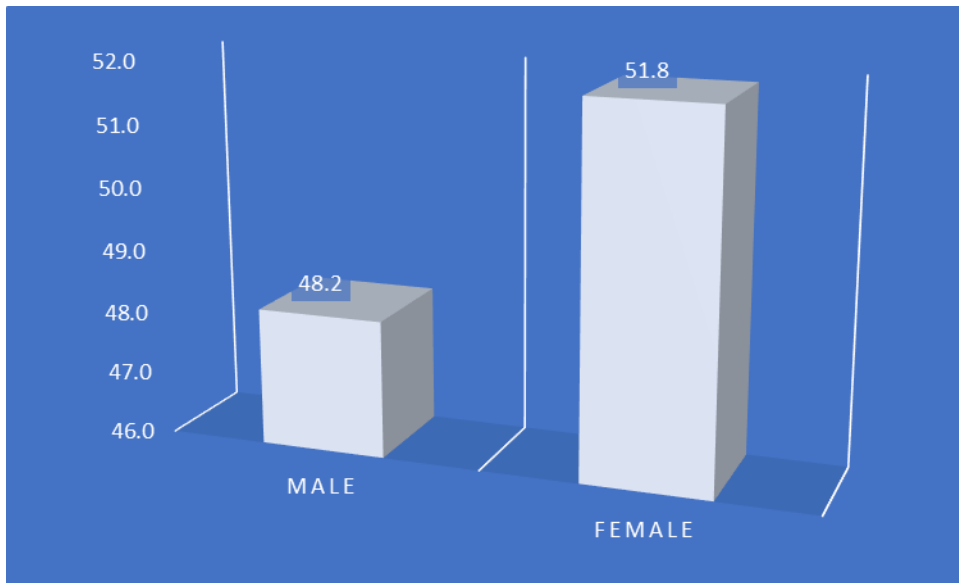
findings presented by the Ministry of Local Government of Rwanda (MINALOC,2016) that category three presented the highest rate of 53.7 percent of households, 29.8 percent for second category, 16 percent and 0.50 percent category one and four respectively.

### 4.3.2 General and Demographic Characteristics of the Teachers

The teaching staff was the second group of respondents that received research tools for this study. They were targeted due to the fact that teaching position in modern time is a multifaced function. Referring to the nature of this research, teaching staff provide significant responses to this study. Gender, age group, marital status, educational level, and professional working experiences were among the general and demographic information collected from teachers.

#### Distribution of Teachers by gender

Figure 4.4 depicts information on the gender of teachers in Rwanda's Western province.



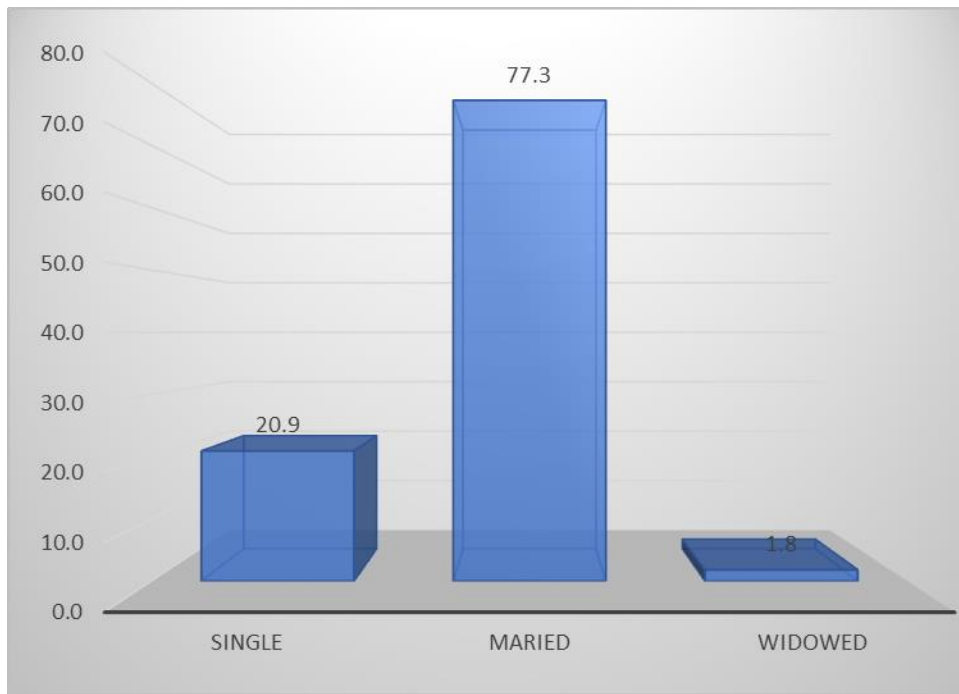
*Figure 4.4 teachers' gender*

In Rwanda's Western province, there are more female teachers than male instructors, as seen in Figure 4.4. This was demonstrated by the fact that 57 (51.80 percent) of the participating teachers

were female, compared to 53 (48.20 percent) who were male. These statistics matched those of a Rwanda Education Board study that revealed 5,587 female teachers and 5,036 male teachers in Rwanda's Western province (MINEDUC,2018).

i. **Distribution of Teachers by Martial Status**

Marital status is an important factor to consider when examining the influence of socio-economic parameter on internal efficiency of schools because marital status influences the people's perception over different matters of concerns. The collected data was presented in figure 4.5.



**Figure 4.5 Marital Status of the Teachers**

The figure 4.5 shows that majority of primary school teachers in Western Province Rwanda are married as indicated by 77.30 percent of the participants. This means that majority of teachers own families therefore, they are familiar with socio-economic conditions affecting internal efficiency.

ii. **Distribution of Teachers by age group**

Age of teachers is an important factor to consider in any educational study that involves teachers. Collected data showing age group of primary teachers in Western Province of Rwanda was presented in the table 4.10.

**Table 4.10 Teachers Age Groups**

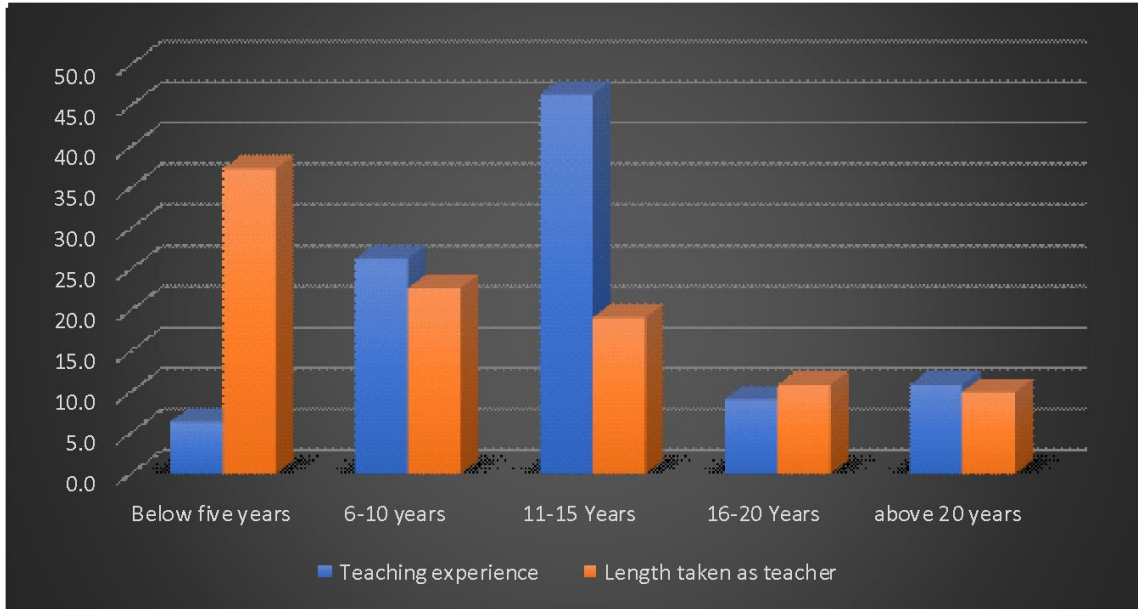
No	Age group	Frequencies	Percentages
1	Below 30 years	23	20.90 %
2	30-35 years	55	50.00 %
3	36-40 years	4	3.65 %
4	40-45 years	11	10.00 %
5	45-50 years	3	2.70 %
6	Above 50 years	14	12.70 %
<b>7</b>	<b>Total</b>	<b>110</b>	<b>100 %</b>

The table 4.10 shows that majority of teachers in Western Province of Rwanda are still young as indicated by 50% of the participants whose age group vary between 30-35. This means that the study targeted the real respondents who have adequate experience required to provide relevant data for this study.

iii. **Distribution of Teachers by Professional Teaching Experiences and Length Taken as Teacher at Primary School**

Professional teaching experiences and length taken as primary teacher were considered to be relevant and useful for this study. Collected data is presented in the figure 4.6.





**Figure 4.6 Professional teaching experiences and length taken as primary teacher**

The majority of instructors in Rwanda's Western province had between 11 and 15 years of teaching experience, as seen in Figure 4.6. This was said by 45 percent of those polled. About a quarter of the participants had 6-10 years of teaching experience. In primary schools, about 20% of the teaching staff had more than 15 years of experience. This indicates that public elementary school teachers in Rwanda's Western Province have a lot of expertise. Figure 4.6 also reveals that 40% of primary school instructors had less than five (5) years of experience, indicating that they previously taught in secondary or pre-primary schools before joining primary schools.

**4.3.3 General and Demographic Characteristics of Head-teachers and DDE**

Head-teachers and district directors of education was a group of the respondents to whom interview guide was directed. Demographic information collected from this group was gender, age, marital status, educational levels and professional working experiences.

i. **Distribution of Head-teacher by Gender, Age and Marital status**

Gender, age and marital status of public primary school head-teachers in Western Province Rwanda was considered were considered to be of great importance in this study. Table 4.11 summarizes the information gathered.

**Table 4.11 Distribution of head-teachers by gender, marital status and age**

<b>Gender</b>	<b>Frequencies</b>	<b>Percentages</b>
Male	20	71.4%
Female	8	28.6%
<b>Marital Status</b>		
Marriage	25	82.1%
Single	4	14.3%
Divorced or separated	1	3.6%
<b>Age group</b>		
Below 30 years of age	2	7%
Between 30-40 years of age	7	25%
Between 40-50 years of age	14	50%
Above 50 years of age	5	18%
<b>Total</b>	<b>28</b>	<b>100%</b>

**Source:** Primary Data (2020)

The table 4.11 shows that majority of primary school head-teachers in the province were male, as indicated by 20 equivalent to 71.40 percent whereas 8 equivalent to 28.60 percent were female.

It also shows that majority of headteachers in the province are married as indicated by 23(82, 10%), 4(14.30%) were not married. This means that they were single, and only 1(3.60%) were either separated or divorced. Furthermore, the table 4.4 also shows that majority of head teachers

of primary schools in Western Province Rwanda have more than 40 years of age as indicated by 19(68%) of the participants. About 7(25%) of participants had between 30-40 years of age only 2 (7%) of participated head-teachers had lesser than thirty (30) years of age. This indicated that being head-teacher of primary school requires adequate professional experiences and maturity.

ii. **Distribution of Head-teacher by Educational Level and Professional Experience**

Educational level and professional working experience of head teachers in this study were considered as important factors. The findings showing educational level and professional working experiences of head teachers were presented in the Table 4.12.

**Table 4.12: Distribution of Head-teachers by Educational Levels and Professional experience**

<b>Education Level</b>	<b>F</b>	<b>%</b>	<b>Professional experiences</b>	<b>F</b>	<b>%</b>
A2 certificate	8	28.6 %	Less than 10	3	10.70 %
Diploma	5	17.90 %	10-15 Years	11	39.30 %
B.Ed.	12	42.80 %	15-20 years	8	28.60 %
M.Ed.	3	10.70 %	Above 20 years	6	21.40 %
<b>Total</b>	<b>28</b>	<b>100 %</b>	<b>Total</b>	<b>28</b>	<b>100 %</b>

The table 4.12 indicates that 8(28.60%) of head-teacher had A2 teaching certificate,5(17.90%) had Diploma in Education (A1), about 12(42.80%) had Bachelor degree in education A0 and 3(10.70%) had Masters’ degree in education. This showed that majority of head-teachers in Western province of Rwanda had Bachelor degree.

The table 4.12 also shows that majority of head-teachers in Western province had more than 10 years of professional working experience as indicated by 25(89.3%) of head teachers involved

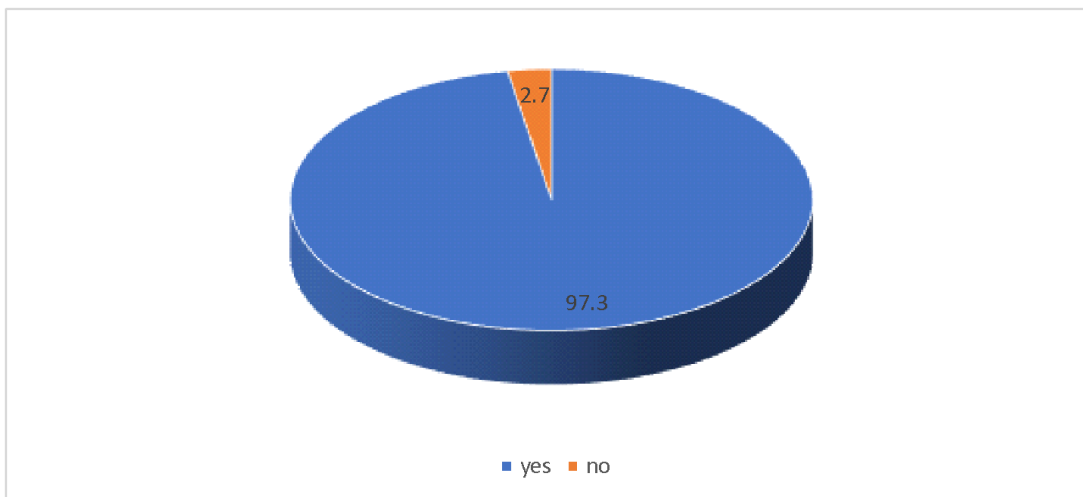
in the study; within them 39.30 percent had between 11-15years and 28.80 percent who had between 16-20 years of experience; and 21.40 percent had more than 20 years of professional teaching experiences. It was also revealed that only 3(10.70%) had lesser that ten years of professional experience. This showed that majority of headteachers in Western Province of Rwanda had adequate experience in education.

#### **4.4 INFLUENCE OF PARENTAL OCCUPATIONS ON INTERNAL EFFICIENCY OF PUBLIC PRIMARY SCHOOLS IN WESTERN PROVINCE OF RWANDA**

The first goal of this study was to determine the impact of parental occupations on internal efficiency in public primary schools in Rwanda's Western Province. To achieve this goal, standardized questionnaires were used to collect data from pupils and teachers, while interview guide was given to headteachers and District Directors of Education (DDE). In addition, a document analysis schedules were used to gather data to assist the fulfillment of this goal. Quantitative data was presented in tables and figures, while qualitative data was presented in textual model was used to present qualitative data. Descriptive statistics, thematic approach, and inferential statistics were used to analysis the collected. Statistical Package for Social Sciences SPSS 22<sup>nd</sup> version was used to calculate descriptive and inferential statistics.

##### **i. Pupils' parenthood or Guardianship in Western Province of Rwanda**

Parents (mothers and fathers) or guardian is a keyword in this study. It is due to this reason that researcher collected the data showing the extent to which pupils have or don't have parents. Collected data was presented in the figure 4.8.

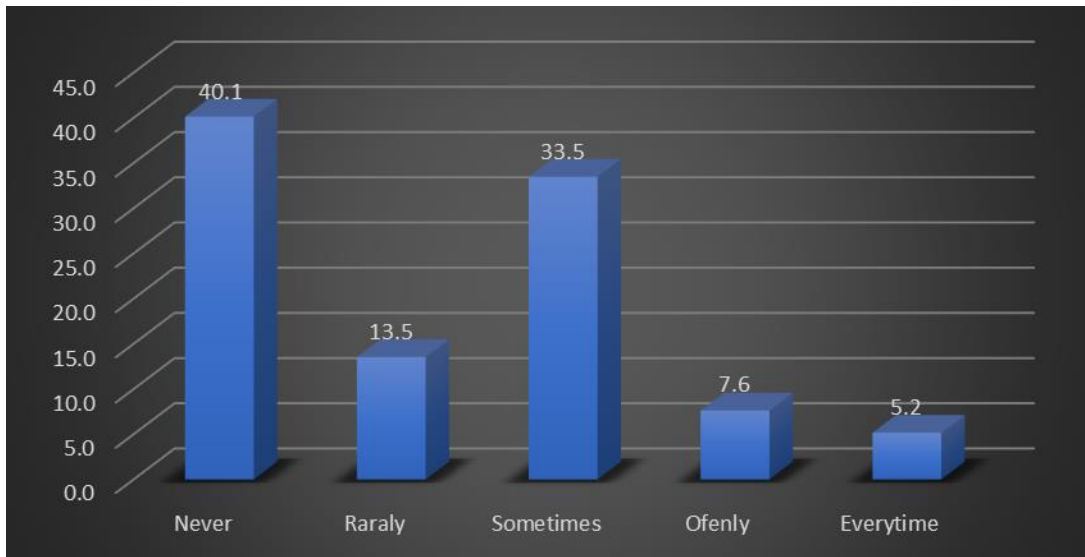


***Figure 4.8 Distribution of pupils by parenthood/ guardianship***

Figure 4.8 shows that majority of the pupils have parents. This was indicated by 396 (97.30%) who has parents. Despite the fact that the government of Rwanda through its ministry responsible for gender and family promotion (MIGEPROF) expresses political will to take off all streets' children and raise them in the family through the campaign known as “*Tubarerere mu Muryango*,” the campaign is yet to achieve the intended goal because the findings revealed 2.70 percent of children in Western Province have neither parents nor guardian and they have no one to care for them.

**ii. Pupils Involvement in Family Activities in Western Province of Rwanda**

The report presented by “save the children” showed that child abuse such as hard work, involvement in the family activities (farming, rearing for animals, domestic chores and assisting parents in businesses) have significantly affected students' academic performance rates in rural schools located in Rulindo district in Northern Province of Rwanda (Lackamp, 2016). Due to this, there was a need to present the extent to which primary six pupils get involved in the family activities in Western Province of Rwanda. Collected information was presented in the figure 4.9.



**Figure 4.9 Pupils Involvement in Family Activities**

Figure 4.9 shows that 40.10 percent of pupils participated in this study have never participated in family activities on school days. This tells us that more than 40 percent of children in Western Province of Rwanda are involved in family activities on school days. This is against the human right commission recommendation saying that children should not be given hard work before 18 years of age (UNICEF, 2019). Furthermore, the study conducted in Nigeria by (Siri, 2014) shows that students who are always absent from school did not perform well in national examinations.

**iii. Parental Activities (Jobs) in Western Province of Rwanda**

Since one of the variables of the study was parental occupations, there was a need to describe parental occupations in this province. Information that shows the trends of activities mostly performed by parents both mothers and fathers in Western Province of Rwanda were presented in the table 4.13.

**Table 4.13 Fathers and Mothers Occupations in Western Province of Rwanda**

<b>Occupations</b>	<b>fathers' occupations</b>		<b>mothers' occupations</b>	
	<b>Frequencies</b>	<b>Percentages</b>	<b>frequencies</b>	<b>Percentages</b>
Jobless	23	5.90 %	3	0.70 %
Farming	220	56.10 %	307	73.10 %
Fishing	7	1.80 %	9	2.20 %
Public occupations	49	11.70 %	38	9.40 %
NGOs occupations	3	0.80 %	4	1.00 %
Trade and business	43	11.00%	42	10.40 %
Driving	18	4.60 %	-	-
Others	32	8.10 %	2	0.50 %

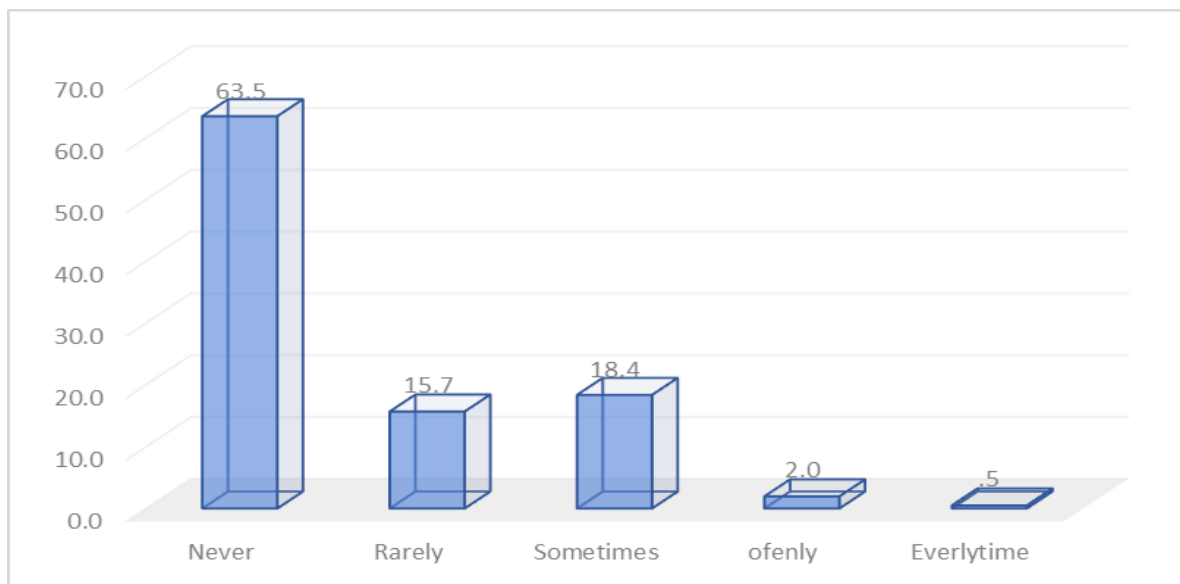
**Source:** Primary Data, (2020)

Table 4.13 shows that majority of family households in Western province of Rwanda were farmers. This was indicated by 220 (56.10%) of fathers and 307(73.10%) of mothers who were farmers. This shows us that they are more female mothers in farming occupations than male in Western Province of Rwanda. These findings corroborate with the findings of NISR (2014) showed that more than 70 percent of private households in Rwanda were involved in agricultural occupations i.e., growing different categories of crops and rearing of animals. Furthermore, the table 4.6 shows that the rate of unemployment is higher in men than in women in Western Province of Rwanda as indicated by (5.90% and 0.70%) for both fathers and mothers respectively.



iv. **Pupils Participations Rate in Farming Activities in Western Province Rwanda**

According to the Rwandan National Institute of Statistics (NISR), more than 70% of the Rwandan population is employed in agriculture-related activities. To this effect, researcher was interested to present the extent to which involvement in farming activities were affecting pupils' regular school attendance. Collected data was presented in the Figure 4.10.

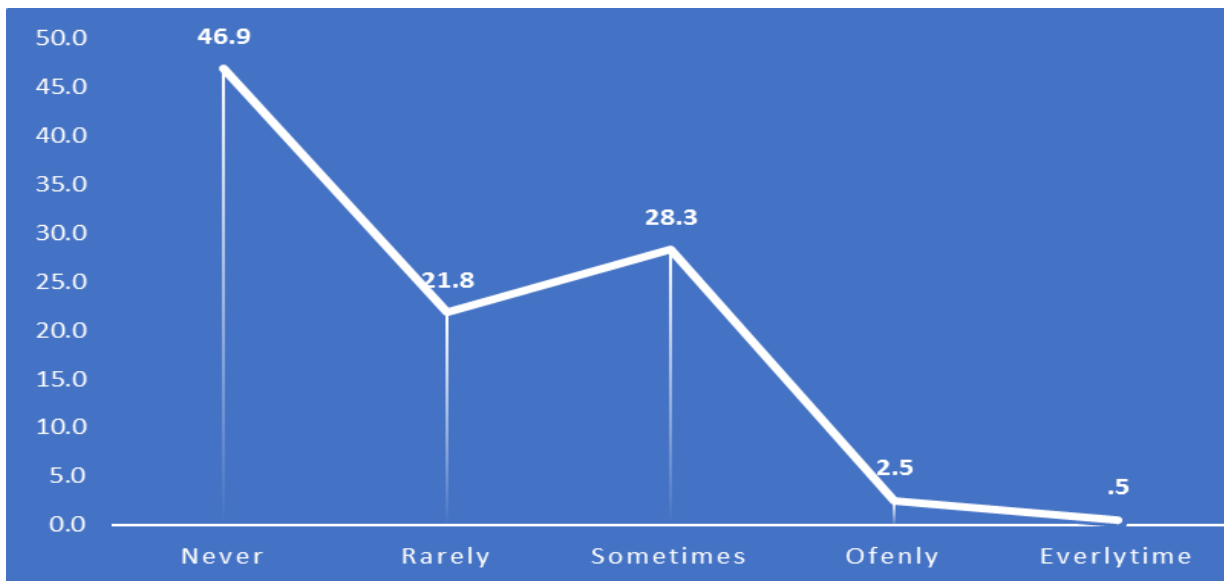


***Figure 4.10 Pupils' Involvement in Farming Activities in Western Province Rwanda***

Figure 4.10 shows that majority of pupils in Western province of Rwanda were not involved in farming activities on school days. This was indicated by 63.5 percent. These findings were against the findings presented by NISR (2012) that in many cases 47 percent failed to attend school due to farming activities in their families.

v. **Household Chores and Pupils' Classroom Attendance**

There was a need to understand the extent to which household chores affect pupils' attendance in When Province of Rwanda. The collected data are presented in figure 4.11.



**Figure 4.11 Household's chores and pupils' classroom attendance**

The figure 4.11 shows that in many cases, household chores have never been a reason for classroom absence. This was indicated by 46.9 percent of the respondent. These findings matched with the findings of the study conducted by Guarcello, Lyon, and Rosati (2005), who found that children's labor has a significant impact on school attendance in developing countries.

#### **4.4.1 Parental Occupations and Academic Performance of Pupils in Western province of Rwanda**

The available literature on students' academic performance rate as embodied in the reports and papers published by crimson foundation (2018), MINEDUC, (2017) and NISR, (2014), showed that Western Province of Rwanda recoded the lowest performance rate, highest dropout rate and the highest repetition rates among the other provinces. However, these studies didn't show the influence of parental occupations on academic performance of the pupils. Collected information to fill the existing gap are presented in the following tables and figures. In Rwanda, Primary

Leaving Examinations (PLE) marks are presented in divisions and aggregate. Rwanda Education Board classify pupils' marks in five division (MINEDUC, 2019) and (Lackamp, 2016) as presented in the table 4.14.

**Table 4.14 Aggregated & allocated Divisions**

N <sup>o</sup>	Division classifications	Marks aggregated
1	Division One (I)	Between 5 -15
2	Division Two (II)	Between 16 – 30
3	Division Three (III)	Between 31 - 37
4	Division Four (IV)	Between 38 – 42
5	Division Five (V) Unclassified	Between 42 – 45

**Source:** Rwanda Education Board (2019)

The Primary Leaving Examination in Rwanda known as Primary Leaving Examinations (PLE) normally took place in early November every year, at the end of academic year which normally runs from January/ February till November. PLE involves five subjects Mathematics, science and elementally technology, English, social sciences and religious studies and Kinyarwanda. Marking and basic marks organizations are being done by independent teachers during the sessions under the directions of Rwanda Education Board (REB) in a few centers at national level. REB collects the results. At the end of January following year, marks become available on REB website, in schools as well as at the district level.

For each subject, pupil gets aggregate between one 1 and 9. Pupil with aggregate one (1) is the best performer whereas pupils with aggregate nine (9) is the worst performer. The total is determined. This ranges from 5 (all subjects scored 1) to 45 (all subjects scored 9). (all subjects scored 9). The students are then divided into five groups based on their cumulative grades. A student will pass an examination if their total score is 41, with four 9s and one 5. This means that

a student who failed entirely in English, social and religious studies, mathematics, physics, and rudimentary technology, as well as Kinyarwanda, passed the tests. This demonstrates how the grading system permits students to pass exams with incredibly low grades. As a result, looking at the pass rate alone is insufficient to assess a school's performance. It's also worth considering distribution between divisions. Schools which have many pupils in division five are poor performers whereas schools which have lesser or no pupil in division five are the best performers.

**Table 4.15 Summary findings of pupils' performances in PLE 2019/2020 by Divisions**

N°	Divisions	Frequencies	Percentages
1	Division I	8	2.00
2	Division II	90	22.10
3	Division III	163	40.00
4	Division IV	87	21.30
5	Division V (Unclassified)	60	14.70
6	<b>Total</b>	<b>408</b>	<b>100.00</b>

**Source:** Rwanda Education Board, (2020)

Table 4.15 shows that in many cases pupils in public primary schools in Western province of Rwanda performed in third category. This was indicated by 163 (40%). This tells us that majority of pupils enrolled in public primary schools are less likely to enroll in public excellent (boarding) schools which in many cases recruit pupils scored with in the first and second grades.

#### 4.4.2 Relationship Between Parental occupations and Pupils' performance in Primary Leaving Examinations (PLE) in Western Province of Rwanda

There was a need to understand the extent to which pupils scores in PLE change based on parental occupations. This was accomplished through the collection of data. Table 4.16 summarizes the results of the analysis.

**Table 4.16 Relationship Between Parental Occupation and Pupils' Performance in PLE**

Variables	Indicators	Mean scores	Std. Deviation	Variance	N	Percentages (%)
Pupils help in parental activities on school days	Never	51.478	7.046	49.646	163	40.10 %
	Rarely	50.945	5.768	33.275	55	13.50 %
	Sometimes	49.500	6.009	36.119	136	33.50 %
	Often	50.774	7.455	55.581	31	7.60 %
	Always	49.333	6.350	40.333	21	5.20 %
Mather's occupation	Jobless	45.666	5.507	30.333	3	0.70 %
	Public occupations	54.026	8.559	73.270	38	9.40 %
	Private or NGOs jobs	46.500	6.350	40.333	4	1.00 %
	Trading and business	49.805	6.576	43.247	36	8.90 %
	Farming	50.250	6.303	39.731	307	75.80 %
	Fishing	52.444	4.719	22.278	9	2.20 %
	Driving	51.667	4.412	19.467	6	1.50 %
	Other occupations	49.500	3.535	12.500	2	0.50 %
Father's occupation	Jobless	47.173	5.882	34.605	23	5.90 %
	Public occupations	51.607	5.889	34.688	46	11.70 %
	Private or NGOs jobs	46.666	2.251	6.333	3	0.80 %
	Trading and business	50.558	6.238	38.919	43	11.00 %
	Farming	50.254	6.726	45.241	220	56.10 %
	Fishing	49.571	5.191	26.952	7	1.80 %
	Driving	52.666	8.087	65.412	18	4.60 %
	Other occupations	52.250	7.006	49.097	32	8.20 %
Ubudehe category	Category one	49.471	5.365	28.787	87	21.30 %
	Category two	49.333	6.020	36.246	96	23.50 %
	Category three	51.380	6.98	48.781	218	53.40 %
	Category four	56.000	8.679	75.333	7	1.70 %
The extent to which performs domestic chores	Never	50.969	6.702	44.922	259	63.50 %
	Rarely	49.875	6.395	40.905	64	15.70 %
	Sometimes	51.186	6.396	40.911	75	18.40 %
	Usually,	48.125	5.026	26.268	8	2.00 %
	Every time	45.500	2.121	4.500	2	0.50 %

**Source:** Primary data (2019)

Table 4.16 presents summary mean scores of pupils at each variable related to parental occupations in Western province Rwanda and their influence on pupils' marks scored in primary leaving examinations 2019/2020.

Taking parentage or guardianship variable into consideration, the findings showed that pupils who either have parents or guardians performed better than pupils who don't have someone to care for them either parents or guardians. As a matter of fact, mean scores for pupils whose parents were 50.57% with Std. deviation of 6.605, whereas mean scores for those who were not cared for, 50.45% with Std. deviation of 5.279. This contends that parents or guardians influence learners' academic achievements. This was in line with the findings of the study conducted by Jean de Dieu (2018), on the influence of parental involvements in students' academic achievements in 12YBE in Nyarugenge district. The study findings revealed that parental involvement improve students' academic achievement.

Considering, parental factors both mothers and fathers' jobs, findings showed that pupils whose parents were jobless performed worse in national examination as indicated by the means scores of 45.66 percent with Std. Dev. of 5.507 and 47.17 percent with Std. Dev. of 5.882 for both mothers and fathers respectively. This is true because jobless parents have limited source of income, they are unable to feed their children as well as to provide schools materials and facilities. This finding corroborates with the findings presented by Hanover research (2015), which reported that higher income families earn 11 times more than the low incomes families. And this growing disparity negatively impacts students from impoverished homes and results in diminished outcomes at school.

Pupils whose parents were public employees performed better than other categories of pupils. This was indicated by a mean scores of 54.026 percent with Std. Dev 8.559 and 51.607 percent

with Std. Dev 5.889 for both mother and father respectively. This is due to the fact that public employees have adequate time to be with their children, through interaction, they discover children learning challenges and contribute to the solution of such problems. Furthermore, public employees have stable income (monthly income). This helps effective planning for pupils' academic re-equipment and facilities than parents with unstable monthly income. This finding contrasted with those presented by Cherian (2010) in a study conducted in China to evaluate the connection between parental occupations and Xhosa children's academic achievement, which revealed that parental occupation has no significant impact on Xhosa children's academic achievement in China.

Furthermore, when comparing kids whose parents were farmers to other groups of pupils, the findings revealed that there were no significant mean differences. For both mothers and dads' jobs, this was indicated by 50.25 percent with a standard deviation of 6.576 and 50.254 percent with a standard deviation of 6.238, which were not far from the groups' averages and standard deviations. This conclusion contradicted Donesty and Okediran's (2012) findings, which stated that students from academic households in Ekiti State, Nigeria, are more likely to score better than students from farming households. It also contradicted the conclusions of a study published in Kenya by Ngetich, (2015), which found that mother (salaried) employment increases enrolment of both girls and boys, whereas parental employment improves only the performance of males.

Last but not least, the findings of the survey revealed that students whose parents work for commercial or non-governmental organizations did worse on national exams than others. Mean recorded scores for both dads and mothers' jobs are 46.66 percent with Std. Dev of 2.251 and 46.50 percent with Std. Dev of 6.350, respectively. This is because, although working for private

or non-governmental groups, the bulk of them perform lower-status occupations that require less education and skills, such as cleaning and security.

In consideration of the pupils level of involvement in family activities, the current study findings showed that the pupils who never get involved in the family activities performed better than their counterparts in examination, this was indicated by the means scores of the 51.47 percent for those who have never involved, 50.94 percent for those who have rarely involved , 49.50 percent for those who have sometimes involved 50.77 percent for those who have often involved and 49.33 percent for those who have always involved in the family activities. There was a mean difference of 2.14 percent for pupils who never help from those who always help their parents in their activities. This illustrated that involvement of pupils in the family activities have negative effect on academic performance.

In addition, Ubudehe category was another important factor considered in this study. The study findings showed that pupils' performance in PLE were associated with Ubudehe categories. i.e. pupils mean score increases from the first to fourth category of Ubudehe. To take a case in point, mean scores for pupils in the fourth category was 56.00 percent with Std. Dev of 8.679, it was 51.38 percent with Std. Dev of 6.98 for pupils in third category, it was 49.33 percent with Std. Dev of 6.20 for pupils in the second category and 49.47 percent with Std. Dev of 5.364. This mean that Ubudehe category significantly correlate with pupils' academic performance.

Lastly, the study also put into consideration the extent to which pupils involved in domestic chores. The findings showed that pupils who have sometimes involved in domestic chores performed better than others. This was indicated by the mean score of 51.18 percent with Std. Dev of 6.396. This tells us that pupils should perform some of the basic domestic activities since



it has no effect on performance. On the other hand, pupils who always involved in domestic chores demonstrated poor performance in national examination as indicated by the mean score of 45.50 percent with Std. Dev of 2.121. This tells us that domestic chores given to pupils on school days affect their academic performances in national examinations. The findings on this variable corroborates with the findings presented by UNESCO (2015); JICA, (2012), confirming that household chores given to children have negatively affected academic

In conclusion, based on the findings showing mean scores and standard deviation of parental occupations variables as presented in the table 4.16, revealed that pupils grade scores in PLE change with the type of occupation that pupils’ parents do. This confirmed that parental occupations influence academic performance of pupils in PLE in primary school in Western Province of Rwanda.

To check the validity and effectiveness of the descriptive findings presented in the data 4.17. t-test was computed to check for relevancy, computed data are presented in the table 4.17.

**Table 4.17: Parental occupations and Pupils Performance Rates in PLE**

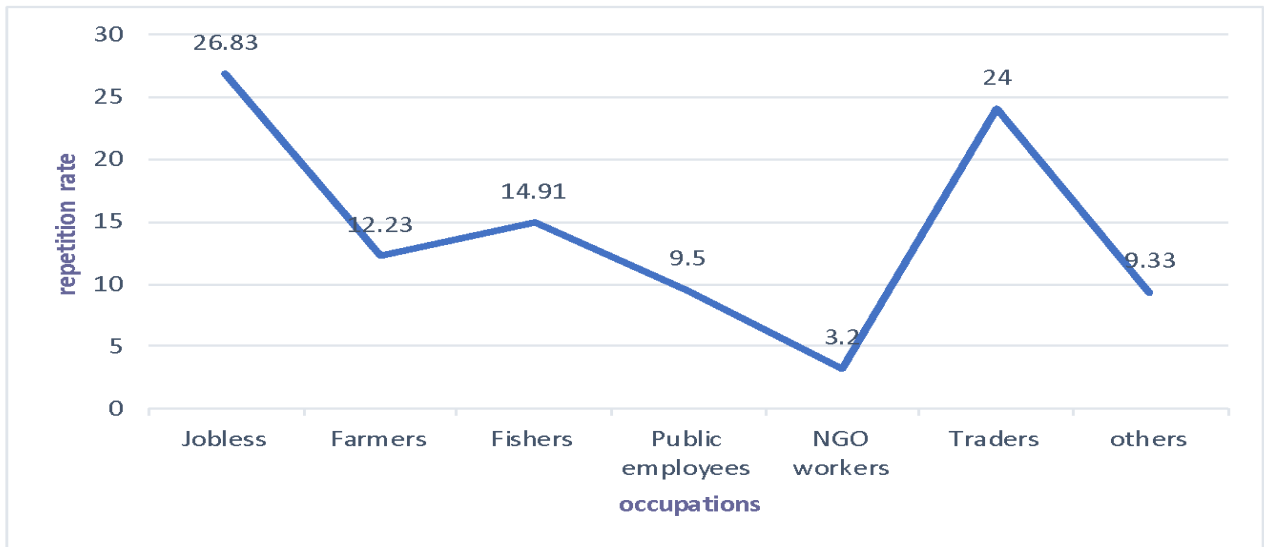
ONE-SAMPLE TEST						
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
fathers' jobs	-445.987	391	.000	-48.19500	-48.4075	-47.9825
Have parents/ guardians	-6170.899	407	.000	-49.54304	-49.5588	-49.5273
pupils help parents in works on school day	-807.940	405	.000	-48.32862	-48.4462	-48.2110
mothers' jobs	-697.101	404	.000	-48.87864	-49.0165	-48.7408
pupils help parents in farming activities	-1116.030	407	.000	-48.96706	-49.0533	-48.8808
report to school late because of home chores	-2033.645	406	.000	-48.94838	-48.9957	-48.9011
extent to which report to school rate	-1040.111	402	.000	-48.69159	-48.7836	-48.5996

**Source:** Primary data (2019)

Table 4.17 shows that there is strong degree of association between parental occupations and pupils academic performance rates in PLE as indicated by  $.000 < p (0.05)$  at two tails over the computed sample variables. This tells us that existing relationship doesn't happen by chance. These findings are in line with the findings published by Udida, Ukway and Ogodo (2012) that parental socio-economic background is a key determinant of academic performance of public secondary schools in Ekiti state Nigeria.

**4.4.3 The Influence of Parental Occupations on Pupils Repetition Rates in Western Province of Rwanda**

In Rwanda's Western Province, there was a need to better understand the relationship between parental occupations and pupil repetition rates. To accomplish this, the researcher gathered data and displayed it in Figure 4.12.



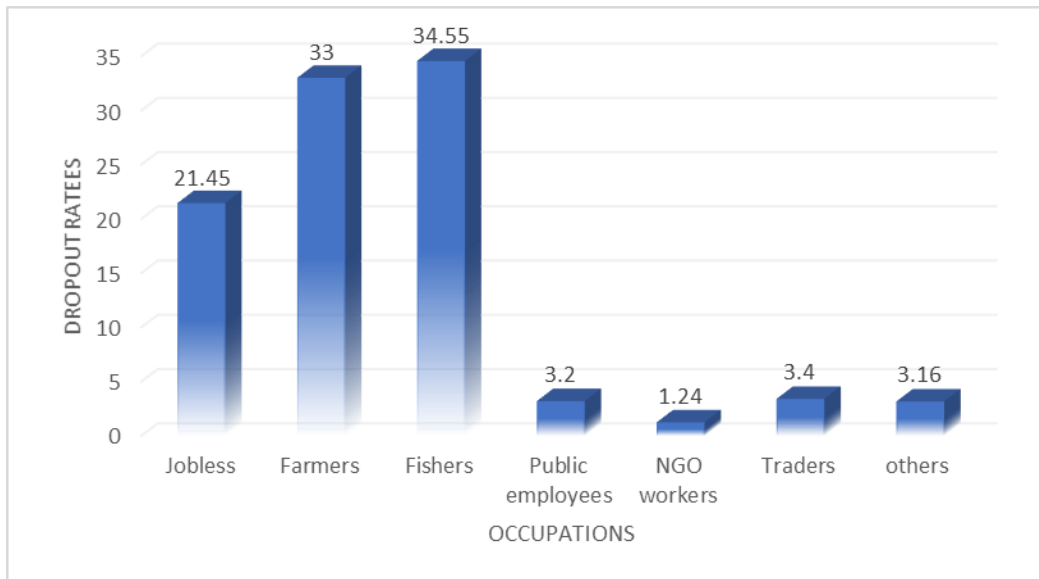
*Figure 4.12 Parental occupations and repetition rate of pupils*

Figure 4.12 shows that repetition rate was high among pupils whose parents were jobless and traders as indicated by 28.83 percent and 24 percent respectively. On the other hand, the table

shows low rate of repetition among pupils whose parents are NGO (Non -Governmental Organizations works) as indicated by 3.2 percent and 9.5 percent respectively. This tells us that pupils repetition rate change with parental occupations. These findings corroborate with the findings presented by Laterite (2018) that in Rwanda repetition rate is very high among pupils whose household are in poorest quantiles.

**4.4.4 The Influence of Parental Occupations on Pupils Dropout Rates in Public Primary Schools in Western Province of Rwanda**

There was a need to understand the influence of parental occupations on dropout rates of pupils in Western Province of Rwanda. Documents were analyzed to collect the data. The collected data are presented in the Figure 4.13.



**Figure 4.13. Parental occupations and Dropout rates**

Figure 4.13 shows that majority of pupils dropped out the school were from fishers and farmers household as indicated by 34.55percent and 33 percent respectively. Pupils whose parents were

jobless also recoded a significant rate of 21.45 percent. However, the same figure shows the lowest dropout rate among pupils whose parents are public employees and NGO workers 3.2 percent and 1.4 percent respectively. This tells us that dropout rate of pupils in public schools in Western Province Rwanda change with parental occupation types. These findings collaborate with the findings published by UNICEF (2017) that dropout rate was very high among pupils were not employed in Rwanda.

#### **4.4.5 Teachers Perceptions on the influence of parental occupation on internal efficiency in primary schools in Western province of Rwanda**

Data was collected from both students and teachers to support the first objective. The goal of the teachers' questionnaires in this study was to contribute additional information to the information gathered from the children' questionnaires. Teachers' questionnaires were organized on a Likert scale. Teachers were asked to indicate how much they agree or disagree with the statement by writing a dummy number in front of it, with 1 denoting strongly disagree (SD), 2 denoting disagree (D), 3 denoting neutral (N), 4 denoting agree (A), and 5 denoting strongly agree (SA) (SA) The presentation and analysis were based on the statements in table 4.18.

**Table 4.18 Teachers’ perceptions on the role of parental occupations on internal efficiency in primary schools in Western province of Rwanda**

STATEMENTS	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
Parental occupations influence internal efficiency of primary schools in Western Province of Rwanda	19	17.3	29	26.4	8	7.3	36	32.7	18	16.4
Busyness of the parents influence academic continuation of the pupils in Western province of Rwanda	10	9.1	26	23.6	7	6.4	42	38.2	25	22.7
Pupils whose parents have formal occupations performed better in class and recoded the highest rate of repetition and dropout than pupils whose parents have informal occupations.	7	6.4	14	12.7	18	16.4	52	47.3	19	17.3
Parents who work for salaries are more committed on academic progression of their children than self-employed parents	4	3.6	22	20	9	8.2	64	58.2	11	10.0
<b>Average</b>	<b>10</b>	<b>9.1</b>	<b>23</b>	<b>20.6</b>	<b>11</b>	<b>9.6</b>	<b>49</b>	<b>45.4</b>	<b>17</b>	<b>15.1</b>

Table 4.18 presents teachers’ responses showing their views on the role jobs performed by parents on academic achievement of public primary schools in Western province of Rwanda.

Analysis and presentation were based on the provided statement:

Making the first statement a case, the findings on this statement revealed that 19 (17.30%) strongly disagree, 29 (26.4%) disagree, 8 (7.3%) were neutral, 36 (32.7%) agree and 18 (16.4%) strongly agreed that parental occupations influence efficiencies of public primary schools in this province of Rwanda located in Western side of the country.

Statement two was \* *Busyness of the parents influence academic continuation of the pupils in Western province of Rwanda* \*. The findings on this statement revealed that 10 (9.10%) strongly disagree, 26 (23.60%) disagree, 7 (6.40%) were neutral, 42 (38.20%) agree, and 25 (22.70%)

strongly agreed that busyness of the parents influence academic continuation of the pupils in Western province of Rwanda.

Statement three was *\* pupils whose parents have formal occupations performed better in class and recoded the lowest rate of repetition and dropout than pupils whose parents have informal occupations \** The findings on this statement indicate that 7 (6.40%) strongly disagree, 14 (12.70%) disagree, 18 (16.40%) were neutral, 52 (47.30%) agree, then 19 (17.30%) strongly agreed that pupils whose parents have formal occupations performed better in class and recoded the highest rate of repetition and dropout than pupils whose parents have informal occupations.

Statement four was *\*parents who work for salaries are more committed on academic progress as well as performance of their children than self-employed parents\** on these concerns, it revealed that 4 (3.60%) strongly disagreed, 22 (20%) disagreed, 9 (8.20%) were neutral, 64 (58.20%) agree and 11 (10%) strongly agreed that parents who work for salaries are more committed on academic performance of their children than self- employed parents. This is true because salaried parents have fixed salaries and working schedule which made it for them to plan for help and support to their children. On the other hand, self-employed parents work every time and everywhere, so it is hard for them to plan for support and help to their children.

On the average responses given by the teachers showed that 10 (9.10%) strongly disagreed, 23 (20.60%) disagreed, 11 (9.60%) were neutral i.e., they didn't respond to the questions, 49 (45.40%) agreed, and 17 (15.30%) strongly agreed that internal efficiencies of public primary schools in Western region of Rwanda was influenced by occupations of the parents.

This showed that the majority of the respondents (teachers) at 66 (60.70%) agreed, 11 (9.60%) did not express their point of views, 33 (29.70%) disagreed that in Rwanda's Western Province,

parental jobs have an impact on elementary school internal efficiency. These findings corroborate with the findings presented in the study conducted in Italy by Gianna and Giannulli (2018), which revealed that the presence of one of the parents in Mathematics related carrier played a significant influence on students' academic achievements in Mathematic related subjects. To the same extent these findings were in line with the findings of the study conducted in Theogene and Andala (2018) that parental occupations affect student academic achievement in private secondary schools in Gasaba Kigali Rwanda.

#### **4.4.6 Responses from interview showing the role of parental occupations on internal efficiencies of public primary schools.**

Data for the conclusions on the influence of parental occupations on internal efficiency of primary schools in Rwanda's Western Province was gathered not only from questionnaires distributed to students and teachers, but also from interviews guide administered to head teachers and district directors of education in Rwanda's Western Province. The obtained data was analyzed using a thematic method, and the findings were presented using textual models.

*“Influence of parental occupations on internal efficiency in primary schools’ pupils’ in Western Province of Rwanda”.*

Semi-structured interview guide was directed to 28 headteachers and to two District Directors of Education selected randomly in Western Province of Rwanda. The goal of this interview guide was to contribute additional information to what had been gathered via questionnaires given to students and teachers, as well as from document analysis schedules. The findings from interview conclude that majority of interviewed participants agreed that parental occupations significantly influence internal efficiency in primary schools in Western Province of Rwanda. “Occupation such as teaching occupation have positive influence on internal efficiency whereas, occupation such as agriculture have negative influence on internal efficiency” confirmed by respondents.

This is true because teachers have adequate time to be with their children not only at school but also when they are preparing their lessons at home. In opposite, parents whose occupation is farming, have little influence on internal efficiency because they are always busy with farm activities. This was supported by the study carried out by Alphonse (2013) in Eastern Province of Rwanda, in the report, he revealed that children whose parents are teachers performed better than children whose parents were farmers.

Furthermore, occupations such as security positions (soldiers and policemen and women) and trade and business occupy almost of parents' time, sometime they are out of the country for different missions this which creates shortage of the time to the children. As a result, parents fail to control and make follow up to their children's education, hence failing to achieve educational goals and this was also confirmed by (York, Gibson & Rankin, 2015).

Equally important, when parents have better occupations which give them high incomes, they make adequate provisions for their children's education. This mean that they provide economic, social, emotional and psychological support to their children and this would make it possible for the children to have good performance in schools than pupils whose parents' occupation earn low income and these was also concluded by (Ushie, Emeka & Owolabi, 2012).

Last but not the least, District directors of education show that parental occupations influence internal efficiency. This is due to the fact that parents whose occupations earn enough money are able to create favorable learning environment by providing everything required to encourage and support learners' learning. Students whose parents' work makes insufficient money, on the other hand, are unable to give suitable modern facilities to boost their children's education owing to instability and financial concerns. To the same extent, interviewed respondents revealed that children whose parents are public employees performed better in primary leaving examinations



than pupils whose parents are private employed. This is based on the government positions' dependability and predictability. When compared to those who work for commercial organizations, parents with government jobs are more secure, and their families are at peace and stability. They are not steady; they are always frustrated about their future lives, affecting students' academic performance in Primary Leaving Examinations. The findings in this section corroborates with the findings of the study presented by Usoni and Abubakar (2015), reported that parental occupations significantly influence student's academic performance in Kuala Terengganu.

#### **4.4.7 Relationship between parental occupations and internal efficiencies of public primary schools in Western province of Rwanda**

There was also a need to establish relationship between occupations of the parents and internal efficiency in primary schools in Western province Rwanda. As results, analysis of variance (ANOVA) was computed in order to draw evidence-based conclusions. The hypotheses tested were null hypothesis (H0) and alternative hypothesis (H1). The null hypothesis to test was H0: There is no statistically significance influence of parental occupations on internal efficiency on public primary schools in Western Province of Rwanda, whereas alternative hypothesis was H1: stated that there is a statistically significance influence of parental occupations on internal efficiency on public primary schools in Western Province of Rwanda. The ANOVA statistical test was used, and the decision criteria was based on the p-value technique. The p-value method Explains that if the levels of significance were 5% or 0.05, the choice to reject or uphold the null hypothesis would be made with a 95% degree of confidence. The p-value is the likelihood of obtaining a sample mean given the value provided in the null hypothesis being true. If the P-value is less than 5% (P0.05), the null hypothesis will be rejected and the alternative hypothesis

will be accepted, however if the P-value is larger than 5% ( $p > 0.05$ ), the null hypothesis will be accepted and the alternative hypothesis will be rejected. The hypothesized outcomes are shown in table 4.19.

**Table 4.19: Parental occupations and Internal Efficiency (performance, dropout and repetition) in primary schools in Western Province of Rwanda**

<i>Parental Occupation</i>						
<b>n°</b>	<b>Internal efficiency</b>	<b>R</b>	<b>Sig</b>	<b>Eta</b>	<b>Eta squared</b>	<b>N</b>
1	Performance	.85	.007	.102	.010	408
2	Dropout	-.42	.002	.198	.039	408
3	Repetition	-.32	.001	.081	.007	408

a.\*Dependent variable: Performance, dropout and repetition  
 $P < .05$

The findings on the calculated sample variables shows the following results .007, .002. and .001 $<p$ .05 we concluded that there is statistically significant influence of parental occupations on internal efficiency in public primary schools in Western Province – Rwanda. Taking the point in case, it was revealed that there is a strong positive correlation between parental occupation and pupils’ performance ( $r = 0.85$ ). This means that improve in parental occupation will lead to the increase of pupils’ scores in Primary leaving examination.

It was also revealed that there is a negative degree of relationship between parental occupation and pupils’ dropout in Western province of Rwanda. This was indicated by ( $r = -0.42$ ). Furthermore, it was revealed a negative degree of correlation between parental occupation and pupils repetition rates in Western province of Rwanda. This was indicated by ( $r = -0.32$ ).

Based on the set condition that if the P-value is less than 0.05, reject the null hypothesis because there is strong evidence to reject it and accept the alternative hypothesis. These findings corroborated Suk Hendra's (1967) conclusions that there is a favorable association between parental employment and students' academic achievement in Indian secondary schools. These findings were also in line with the findings presented by Ntawiha and Orena (2015) who concluded that parental occupations influence students' academic achievement in Nyarugenge and Nyamasheke District.

## **4.5 PARENTAL INCOMES AND INTERNAL EFFICIENCY OF PUBLIC PRIMARY SCHOOLS IN WESTERN PROVINCE OF RWANDA**

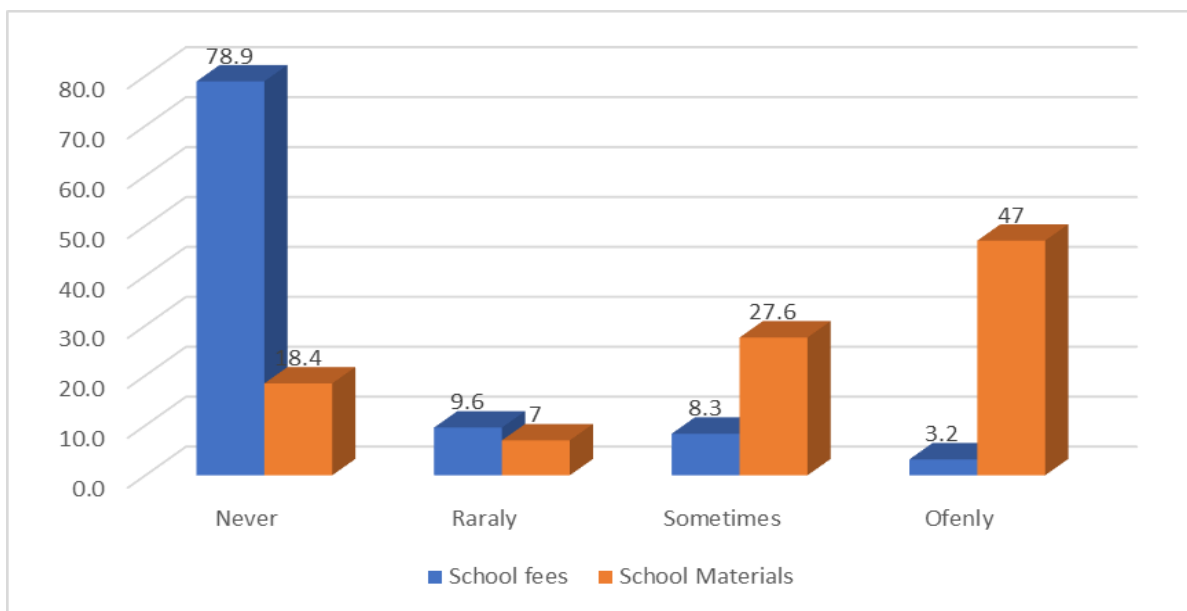
The study's second goal was to look at the impact of parental wealth on the internal efficiency of kids in public primary schools in Rwanda's Western Province. Information for this objective's conclusion was gathered through questionnaires administered to teachers and students, as well as an interview guide administered to headteachers and district directors of education. In addition, data was gathered through a document analysis schedule. Documents from educational institutions such schools, district education offices, and the Rwanda Education Board were reviewed (REB). Quantitative data was analyzed using descriptive and inferential statistics, while qualitative data was analyzed using a thematic method. The findings were presented using tables, graphs, and textual models.

### **4.5.1 Responses from pupils showing the contribution of parental incomes on internal efficiency of public primary schools in Western Province of Rwanda**

The second section of pupils' questionnaire was comprising questions aimed to collect data which helped the researcher to know the income levels of pupils' parents in Western province of Rwanda and its influence on internal efficiency in primary schools.

#### **i. The influence of school fees & materials on pupils' school attendance**

There was a need to establish the extent to which school fees and school materials influence pupils' attendance to school. Collected data are summarized in the graph named 4.13.



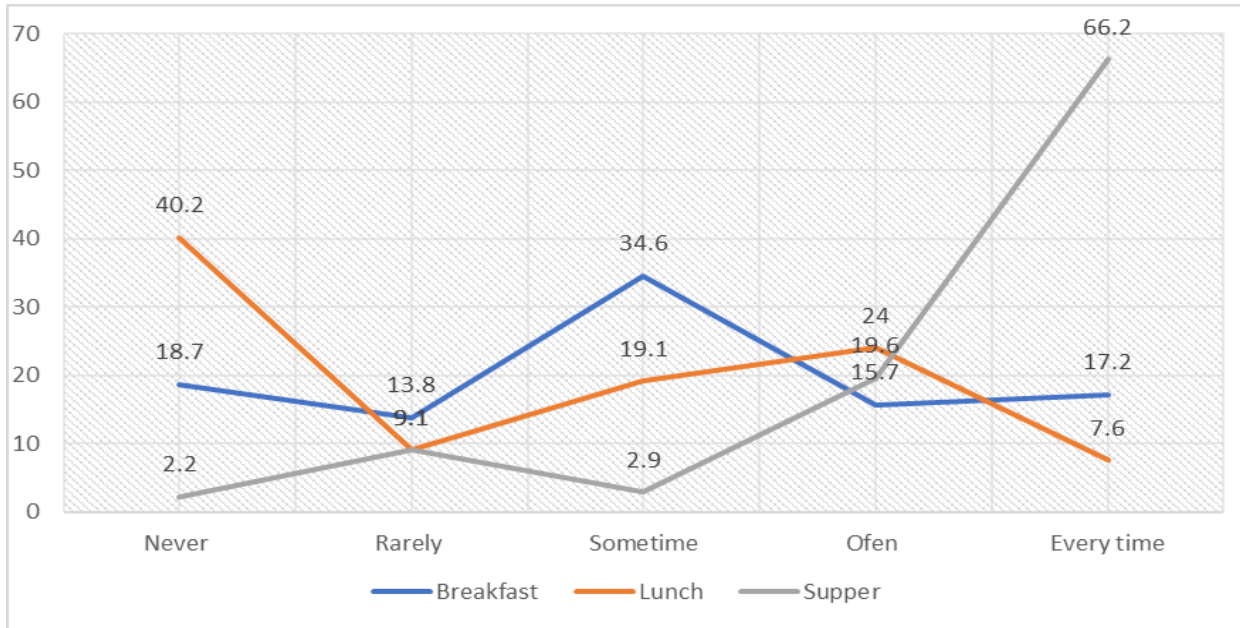
**Figure 4.13 Relationship between school fees & materials and pupils school attendance**

The figure 4.13 shows that the majority of pupils have never failed to attend school because of school fees as indicated by 78.90 percent of the participants. This is true because public primary schools in Rwanda are free of charge, however, 11.5 percent revealed the challenge of hidden cost of education to their schooling even though the public primary schools in Rwanda is assumed to be provided out of charge. Figure 4.13 also shows that the majority of pupils in public schools failed to report themselves to school due to the lack of school materials. This was indicated by 47.00 percent who often fail and 27.60 percent who sometimes fail to report themselves to school. This affirmed that family income level influence learners' truancy which stimulate the rates of pupils' dropping out the schools.

**ii. The Extent to which Pupils Take Meals on Daily basis**

UNICEF (2015) reported that hunger in the families was one of the most influencing factors of learners' dropout all-over the globe. Referring to this point, there was a need to establish the

extent to which pupils in Western province of Rwanda take meals on daily basis (breakfast, Lunch and Supper). Collected data was presented in the figure 4.14.



**Figure 4.14 Extent to Which Pupils Take meals on daily basis**

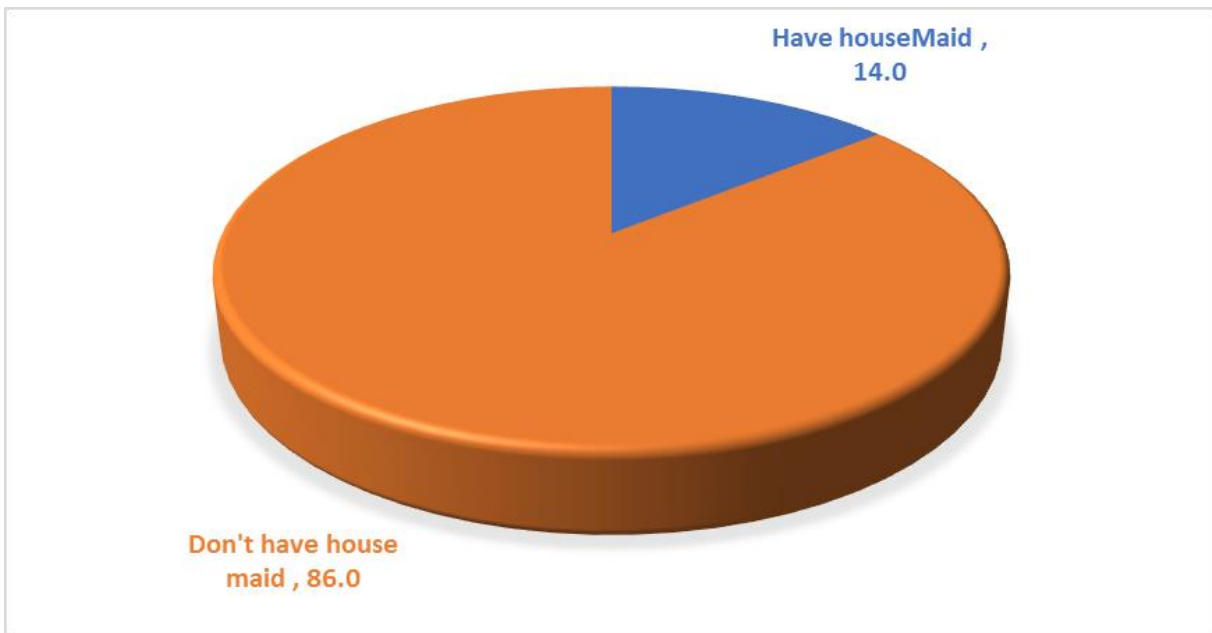
Figure 4.14 presents findings showing the extent to which pupils in public primary schools take meals on daily basis this mean that in the morning (breakfast), in the mid of the day (Lunch) and in the evening (supper).

Taking breakfast as a case: It was indicated that 32 percent of pupils never take breakfast; 34.6 percent sometimes take breakfast, whereas, only 23.30 percent of the pupils take breakfast on the regular basis. This showed that 66.60 percent of the pupils in Western Province Rwanda often report to school without eating. Taking Lunch meal as a case: It was established that 40.20 percent of pupils never take lunch; 19.10 percent take lunch sometimes, and 31.60 percent often take lunch. This tells us that 68.40 percent of pupils in Western Province Rwanda never take lunch. Taking supper as a case: It was established that more than 85.80 percent of the pupils

always take supper however, 14.2 percent sometime go to bed without eating, and this influence the rate of dropout of pupils in the province as it was revealed by several studies that majority of drop out are from low-income families and that financial problem is one of the key factors affecting dropout rate of students [Latif et al, (2015), Haq (2013), Jingrong (2004)].

iii. **The extent to which family use house helper (house girls or house boys)**

Having or not having house helper was an important factor to consider when examining family income and its effects on academic issues of the children. The collected data was presented in the figure 4.15.



**Figure 4.15 House with housemaid and with no house maid**

The majority of the students' families do not have a domestic assistant, as seen in Figure 4.15. In this specific instance, 86.00 percent of the pupils' families do not have housemaids, only 14.00 percent of the pupils' families had house helpers. This confirmed that the majority of households in Western Province have low income. This was supported by interview responses; interviewees

assisted that majority of households live in farming and rearing of animals those activities require a lot of man powers. So, due to multiple tasks in the agriculturally based households, rich families employ more housemaid to assist in domestic chores. In the study conducted by MIGEPROF (2016) revealed that women and children are mostly involved in domestic chores. Consequently, in the study conducted by UNICEF (2018) in collaboration with MINEDUC conformed that domestic chore affect children’s academic achievement.

iv. **Household Chores Performed by Pupils in Western Province of Rwanda**

There was a need to establish household chores mostly performed by pupils on school days and the extent to which affected pupils’ class attendance. The collected data was presented in the table 4.20.

**Table 4. 20: Household chores mostly performed by Pupils on school days in Western Province**

<b>Domestic Chores</b>	<b>Never F %</b>	<b>Rarely F %</b>	<b>Sometime F %</b>	<b>Often F %</b>	<b>Always F %</b>
Extent to which pupils care for siblings on school days	(95) 23.30%	(48) 11.80%	(106) 26.0%	(75) 18.40%	(84) 20.60%
Extent to which pupils look after family animals on school days	(246) 60.30%	(64) 15.70%	(62) 15.70%	(15) 3.70%	(21) 5.10%
Extent to which pupils collect firewood on school days	(285) 69.90%	(88) 21.60%	(26) 6.40%	(6) 1.50%	(3) 0.70%
The extent to which pupils fetch water, wash clothes and prepare food for family on school days.	(77) 18.80%	(56) 13.80%	(141) 34.60%	(64) 15.70%	(70) 17.20%
<b>Average</b>	<b>(169) 41.30%</b>	<b>(64) 16.60%</b>	<b>(84) 20.96%</b>	<b>(40) 10.20%</b>	<b>(45) 11.04%</b>

**Source:** Primary data, (2019)



The table 4.20 presents pupils' findings showing the extent to which household chores hinder pupils regular school attendance. Hence influencing pupils' dropout rate. The questions were in the form of statements, and students were asked to demonstrate how domestic tasks had affected their attendance in class. Presentation and analysis of the findings were based on the provided statements.

The first statement was "*the extent to which pupils care for siblings on school days*". The findings on this statement showed that 95 (23.30%) never care for siblings on school days; 48(11.80%) rarely care for siblings;106 (26.0%) sometimes care for siblings;75(18.40%) often care for siblings and 84(20.60%) always care for siblings on school days.

The second statement was "*the extent to which pupils look after domestic animals on school days*". The findings on this statement showed that 246 (60.30%) never look after domestic animals; 64 (15.70%) rarely look after domestic animals; 62(15.70%) some time look after domestic animals; about 36 (8.80%) often look after domestic animals of their families on school days. These findings matched those of NISR (2014), which found that 58.00 percent of Rwandan private households held livestock.

The third statement was "*the extent to which pupils collect firewood on school days*". The findings on this statement shows that 285 (69.90%) never collect firewood; 88 (21.60%) rarely collect firewood; 26 (6.40%) sometimes collect firewood on school days; and 9 (1.80%) often collect firewood on school days.

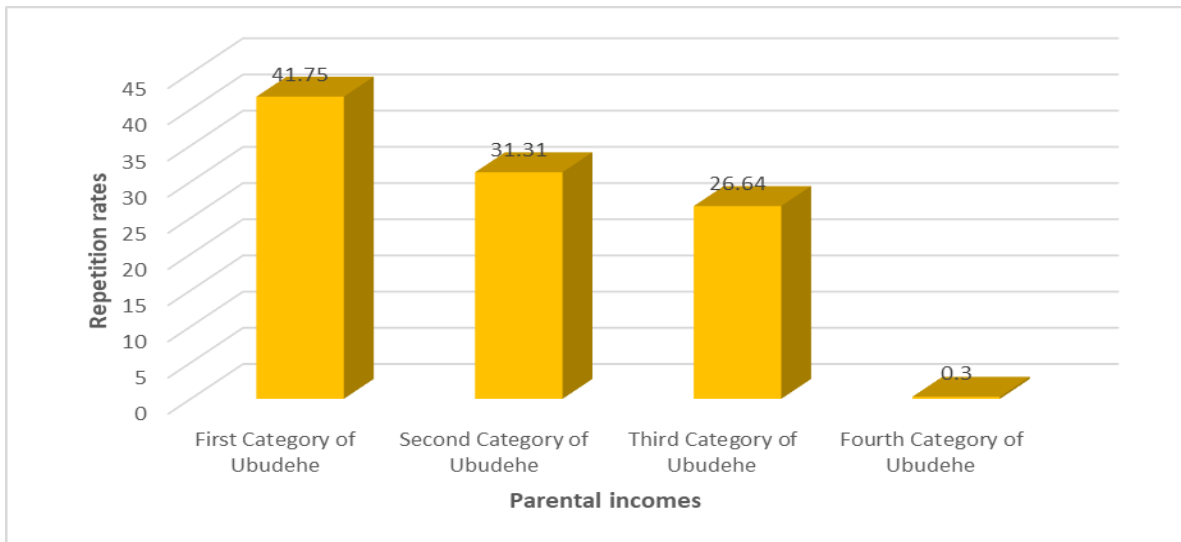
The fourth statement was "*the extent to which pupils fetch water; wash clothes and prepare meals for the family on the school days*". The findings on this statement revealed that 77(18.80%) never perform mentioned activities on school days; 56 (13.80%) rarely perform those activities; 141

(34.60%) sometimes perform the mentioned activities and 134 (31.90%) often fetch water, wash clothes and prepare meals for the family on school days.

On average it was established that 169 (41.3%) never perform domestic chores on school days, 64 (16.6%) rarely perform domestic chores on school days; 84 (20.96%) sometimes perform domestic chores and 85 (21.24%) often perform domestic chores on school days. This revealed that domestic duties allocated to children have had an impact on many children's regular attendance in class, leading to an increase in the dropout rate of kids in Rwanda's Western Province's public primary schools.

#### **4.5.2 Parental incomes and Repetition Rate of Pupils in Primary Schools of Western Province of Rwanda**

There was a need to establish the relationship between parental incomes and repetition rate of pupils in Western province of Rwanda. Data was collected through document analysis schedules after analysis collected data was presented in the figure 4.16.



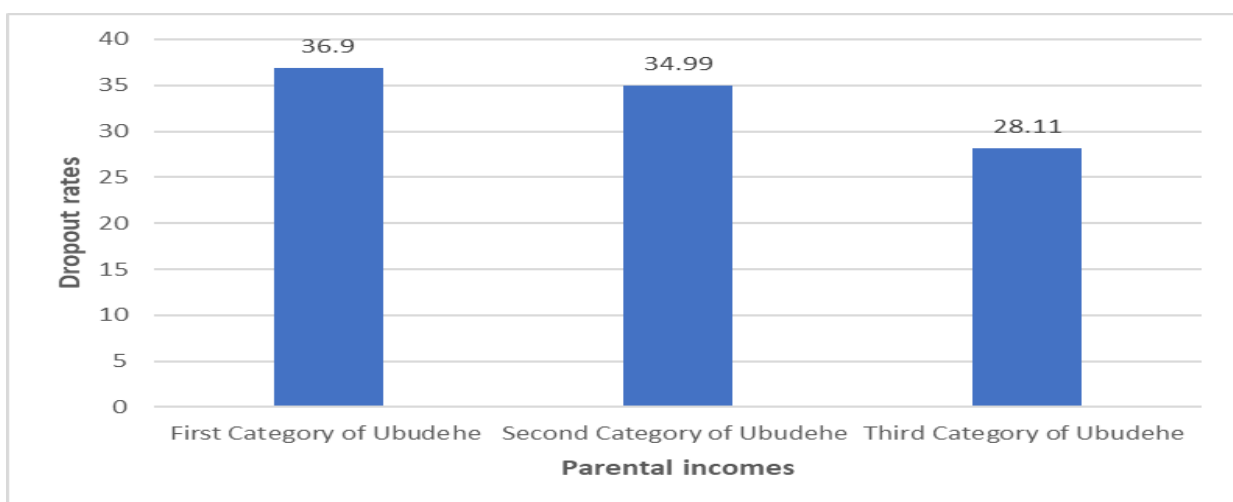
**Source:** Primary data (2019)

**Figure 4.16 Parental incomes and repetition rate of pupils in primary schools**

The figure 4.16 shows that repetition rate change with Ubudehe category of pupils' family, in which first category recoded the highest rate of repetition of 41.75 percent whereas category four recoded the lowest rate of repetition of 0.3 percent. This mean that the low income of the parents the higher repetition rate is. These findings corroborated those of MINEDUC (2017) and UNICEF (2017), which found that the rate of recurrence is extremely high among students from low-income families.

#### **4.5.3 Parental Income and Dropout Date of Pupils in Primary Schools' Western Province of Rwanda**

Dropout rate is an important indicator of internal efficiency, to this effects data showing the influence of parental income on dropout rate of pupils in Western Province of Rwanda was collected through document analysis schedules. After the analysis collected data was presented in the figure 4.17.



**Source:** Primary Data (2019)

***Figure 4.17 Parental income and Pupils Repetition rate in Western Province***

Figure 4.17 shows that dropout rate is very high among pupils whose family are in category one of Ubudehe as indicated by 36.9 percent and reduce through category two and three as indicated by 34.99 percent and 28.11 percent respectively. This tells us that dropout rate among pupils in Western Province of Rwanda change with parental incomes. These findings were against the findings of the study carried out by Cherian (2014) in Tokyo which concluded that there is no relationship between parental income and students' dropout rates.

**4.5.4 Teachers' perception on the role of parental incomes on internal efficiency of public primary schools in primary schools in Western province of Rwanda.**

Teaching staffs refer to personnel who deal with learners' affairs every day. Therefore, asking them about pupils' issues was the right choice. Teachers were among the groups targeted to administered research instruments for this study. Questionnaire designed for teachers was distributed to 110 teachers in primary schools in Western province Rwanda. Questions asked were in Likert scale format. Teacher was asked to show the extent to which he/she agrees or disagrees with statement by ticking on the right place on the provided questionnaire. After the analysis, collected data was presented in the table 4.21.

**Table 4.21: Teacher’s responses on influences of parental occupations on Internal efficiency**

STATEMENTS	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
Lack of basic school materials influence dropout and repetition rates of pupils in primary schools in Western Province of Rwanda.	8	7.3	32	29.1	11	10.0	45	40.9	14	12.7
Lack of school fees influence dropout and repetition rates of pupils in primary schools in Western province Rwanda	7	6.4	10	9.1	9	8.2	52	47.3	31	28.2
Chores and other domestic works given to pupils in Western province of Rwanda on school days influence pupils dropout, repetition and completion rates.	8	7.3	13	11.8	4	3.6	51	46.4	34	30.9
Lack of adequate nurture in the families in Western province of Rwanda influence pupils’ academic progression.	7	6.4	10	9.1	3	2.7	51	46.4	39	35.5
Pupils who often report to school without eating are likely to dropout or repeating schools	8	7.3	8	7.3	3	2.7	53	48.2	38	34.5
<b>Average</b>	<b>8</b>	<b>7.3</b>	<b>15</b>	<b>13.1</b>	<b>6</b>	<b>5.6</b>	<b>50</b>	<b>45.8</b>	<b>31</b>	<b>28.2</b>

Teachers' comments to the effects of family incomes on internal efficiency in public primary schools in Rwanda's Western Province are presented in table 4.21. The stated statements were used to base the analysis and presentations.

The statement one was “*lack of basic school materials influences pupils’ dropout and repetition rates of pupils in primary schools in Western province of Rwanda*”. The findings on this statement revealed that (8, 7.30%) strongly disagree; 32(29.10%) disagree; 11(10.0%) were neutral; 45(40.90%) agreed; and 14(12.70%) strongly agreed that lack of basic school materials influences repetition and dropout rates of pupils in primary schools.

The second statement was “*the lack of school fees influences dropout and repetition rates of pupils in primary schools in Western province Rwanda*”. The findings on this statement revealed that 7(6.40%) strongly disagreed; 10 (9.10%) disagreed; 9(8.20%) were neutral; 52(47.30%) agreed; and 31(28.20%) widely agreed that the lack of school fees has an impact on dropout and

repeat rates among primary school students in Rwanda's Western Province. The third statement was “*chores and other domestic works given to pupils in Western province of Rwanda on school day influence pupils’ dropout, repetition and completion rates*”. The findings on this statement revealed that (8, 7.30%) strongly disagreed; (13, 11.80%) disagreed; (4, 3.60%) were neutral; (51, 46.40%) agreed and (34, 30.90%) strongly agreed that chores and other domestic activities given to pupils on school days in Western Province of Rwanda influence dropout, repetition and completion rates.

The fourth statement was “*lack of adequate nurture in the families in Western Province of Rwanda influences academic progression of pupils.*” The findings on this statement revealed that (7, 6.40%) strongly disagreed; (10, 9.10%) disagreed; (3, 2.70%) were neutral; (51, 46.40%) agreed; (39, 35.50%) strongly agreed that lack of adequate meals in some families in Western province Rwanda influence academic progression of pupils.

The fifth statement was “*pupils who often report to school without eating are likely to dropout or repeating schools.*” The findings on this statement revealed that (8, 7.30%) strongly disagreed; (8, 7.30%) disagreed; (3, 2.70%) were neutral; (53, 48.20%) agreed and (38, 34.50%) strongly agreed that pupils who often reported to school without eating are likely to repeat or dropout schools in Western Province of Rwanda.

Parental incomes influence internal efficiency in primary schools in Rwanda's Western Province, according to an average of (8, 7.30 percent) significantly disagreed; (15, 13.10 percent) disagreed; (6, 5.60 percent) were neutral; (50, 45.80 percent) agreed; (31, 28.20 percent) strongly agreed. The majority of teachers (74%) agreed that family earnings have an impact on the internal efficiency of elementary schools in Rwanda's Western Province.

These findings were against the findings presented in Tokyo, Japan by Machebe, Ezegbe and Onuoha (2017) which revealed that there is no significance relationship between parental incomes and students’ dropout rate in Tokyo, Japan. This might be true because Japan is a developed county where income of the parents has no effects on student academic performance

because the country keeps on developing its learning institutions. process developed learning institutions, it was in line with the findings of study conducted on the influence of parental income on students' dropout rates by Deguzman and Gallardo (2017) which revealed that parental income level is the key factor influencing academic progression of learners in Nigeria.

#### **4.5.5 Relationship between parental incomes on pupils' performance rate in PLE in Western Province of Rwanda**

There was a need to understand the extent to which pupils perform in PLE in relation to parental incomes. This was done based on the recommendations given by Hynes (2018); MINEDUC (2015); and Deguzman & Gallardo (2017) that students with poor performance are likely to dropout the schools. Information showing pupils performance rates based on incomes of the parents were collected. After analysis, the collected data was presented in table 4.22.

**Table 4.22 Relationship between Parental income and pupils' performance in PLE in Western Province Rwanda**

Variables	Indicators	Mean scores	Std. Deviations	Variances	N	Percentages (%)
Ubudehe category	Category one	49.47	5.365	28.787	87	21.30 %
	Category two	49.33	6.020	36.246	96	23.50 %
	Category three	51.38	6.984	48.781	218	53.40 %
	Category four	56.00	8.679	75.333	7	1.70 %
Breakfast meal	Never	50.43	6.986	48.809	76	17.70 %
	Rarely	49.82	5.899	34.804	56	13.80 %
	Sometimes	50.49	6.436	41.423	141	34.60 %
	Often	50.81	6.767	45.806	64	15.70 %
	Always	51.15	6.805	46.308	70	17.20 %
Lunch meal	Never	49.38	4.821	23.245	31	7.60 %
	Rarely	48.94	5.317	28.275	37	9.10 %
	Sometimes	49.75	5.439	29.589	78	19.10 %
	Often	50.11	7.238	52.389	98	24.00 %
	Always	51.82	7.010	49.153	164	40.20 %
Supper meal	Never	49.22	4.294	18.444	9	2.20 %
	Rarely	50.59	6.977	48.692	37	9.10 %
	Sometime	52.50	7.103	50.456	12	2.90 %
	Often	50.08	6.388	40.815	80	19.60 %
	Always	50.67	6.621	46.850	270	66.20 %
The extent to which miss school because of school materials	Never	50.63	6.658	44.341	313	78.70 %
	Rarely	48.53	5.350	28.623	39	9.60 %
	Some times	52.23	6.267	39.276	35	8.30 %
	Often	52.53	8.181	66.936	13	3.20 %
	Always	48.00	4.609	21.250	9	2.20 %
Family housemaid	Yes, have	52.017	6.688	44.732	57	14.00 %
	No, don't have	50.32	6.534	42.696	350	86.00 %
Care for siblings	Never	51.36	6.917	47.852	95	23.30 %
	Rarely	50.62	5.884	34.622	48	11.80 %
	Sometimes	49.471	6.899	47.604	106	26.00 %
	Often	50.70	6.544	42.832	75	18.40 %
	Always	50.90	6.077	36.931	84	20.60 %
Look after family animals	Never	51.56	6.911	47.765	245	60.30 %
	Rarely	48.82	5.405	29.224	64	15.70 %
	Sometimes	49.37	6.057	36.696	62	15.20 %
	Often	51.53	6.222	38.695	15	3.70 %
	Always	47.09	4.689	21.990	21	5.10 %
Collecting fire woods	Never	51.40	6.550	42.911	285	69.90 %
	Rarely	48.42	6.494	42.178	88	21.60 %
	Some times	49.00	5.433	29.520	26	6.40 %
	Often	49.50	4.460	19.900	6	1.50 %



Table 4.22 above presented findings showed pupils performance rate in relation to parental income indicators. This was done with the aim to predict the likelihood of pupils to drop out of schools based on mean scores and Std dev.

Taking Ubudehe category of pupils' family into consideration, it was found that pupils in the first category of Ubudehe face lower performance when compare with the performance of pupils whose families are in the fourth category. This was indicated by a mean score of (49.47% with Std.Dev 5.365) against mean scores of (56.00% with Std.Dev of 8.679) for pupils in the first and fourth category of Ubudehe respectively. This validates that probability of pupils in the first category of Ubudehe to drop out of school is greater than those of their counterparts in the fourth category. This might be true, due to the fact that households in the fourth category of Ubudehe are more economically stable than households in the first category.

As the extent to which pupils have taken meals on daily basis i.e. breakfast, Lunch, and evening meal is concerned, lunch time. i.e. food taken by pupils at mid-day at school have significant influence on pupils' performance. The findings showed that pupils who have never taken lunch recoded lower mean score compared with other groups. This was indicated by the mean score of (48.94% with Std.Dev 5.317) against mean score of (51.82% with Std.Dev of 7.010) for pupils who rarely took lunch and those who always took lunch respectively. This proves that pupils who never eat lunch are likely to dropout out the school. These findings have corroborated with the findings presented by JICA, (2012); and UNESCO, (2015) which confirmed that shortage of basic needs in the family influence drop out in sub- Saharan Africa.

Considering school facilities and school materials, it was established that pupils who never miss school, performed better than pupils who were often absent from school because of school materials and facilities. This was indicated by the mean score of 50.63 percent and 48.00 percent

for pupils who have never been absent from school and those who were often absent from school because of school materials and equipment respectively. This justifies that pupil who often struggle with school materials and facilities is likely to drop out the school. These findings were consistent with those given by Mutegi, (2015); Philothere, (2015) found that physical facilities in a student's environment have an impact on their academic progress.

As far as the variable of having housemaid is concerned, the findings indicated that pupils whose families have housemaid performed better than pupils whose families don't have. This was indicated by mean score of (52.01% with Std.Dev of 6.688) against mean score of (50.32% with Std.Dev of 6.534) for pupils whose families had housemaid and those who didn't have housemaid respectively. This is true because pupils whose family do not have housemaid are always involves in household chores before and after school.

Subsequently the three indicators namely the extent to which cared for siblings, looked after domestic animal and fetched water & collect firewood on school days. For all the three variables, it was established that pupils who have never get involved in those activities performed better than others with mean score of 51.36 percent, 51.56 percent and 51.40 percent respectively. On the other hand, pupils who were always involved in these activities recoded the lowest scores as indicated by the mean of 49.47 percent; 47.09 percent, and 48.42 percent. Since mean score of pupils who were always involved in the mentioned above chores scored lesser than average. i.e., they are likely to drop out of the school. The findings presented in this section corroborates with the findings presented by crimson research team that household chores given to children influence dropout rate of the pupils in the public secondary schools of Rwanda (Hynes et al, 2018).

In conclusion, basing on the study findings it was established that pupils who come from low-income families or from economically disadvantages families did not perform well.

Following the descriptive analysis reported in table 4.22, it was necessary to determine whether the existing association was not the result of chance. To this end, the chi-squire was computed and the results were presented in table 4.23.

**Table 4.23 Parental incomes and pupils’ academic performance in PLE**

One-Sample Test						
	T	df	Sig. (2-tailed)	Mean Difference	95% Conf- Interval of the Difference	
					Lower	Upper
Ubudehe categories	-1171.093	407	.000	-48.21461	-48.2955	-48.1337
Pupils miss school because of school fees	-1062.723	407	.000	-49.12392	-49.2148	-49.0331
Extent to which pupils take break fast	-728.969	406	.000	-47.57983	-47.7081	-47.4515
Extent to which pupils take lunch	-745.850	407	.000	-46.76853	-46.8918	-46.6453
Extent to which pupils take supper	-886.628	407	.000	-46.18520	-46.2876	-46.0828
Having housemaid	-2828.164	406	.000	-48.71005	-48.7439	-48.6762
Extent to which pupils care for their siblings	-669.088	407	.000	-47.55775	-47.6975	-47.4180
Extent to which pupils looks after animals on schl day	-858.258	407	.000	-48.79304	-48.9048	-48.6813
Extent to which pupils collecting firewood on schl day	-1340.805	407	.000	-49.15333	-49.2254	-49.0813

Table 4.23 reveals that there is a strong relationship between parental incomes and pupil grade scores in PLE, as evidenced by .000 p (0.05) for all studied variables. This implies that there is a link between parental income and student achievement. Those findings were similar to those of Ntawiha (2016), who found a low positive association between parental incomes and kids' academic achievement in public secondary schools in the Nyamasheke and Nyarugenge Districts.

#### **4.5.6 The interview responses showing perceptions of headteachers and DDE on the role of parental incomes on internal efficiencies of public primary schools**

Information for the conclusion on the influence of parental incomes on internal efficiency of primary schools in Rwanda's Western province was gathered not only through questionnaires given to students and teachers, but also through semi-structured interviews with headteachers and district directors of education. Thematic analysis was utilized to evaluate the data, and the study findings were presented using a textual model.

*“Parental incomes and internal efficiency of in primary schools in Western Province of Rwanda”.*

The most of the twenty-eight (28) head teachers and two (2) directors of education interviewed claimed that family income effects the internal efficiency of primary schools in Rwanda's Western Province. Discussion and interpretation of findings given were distributed in three groups:

*The first group of interviewees:* Parental income refers to what parents earn in terms of salaries, wages, profits and any other source of money that help parent at home to finance different needs of the children at home such needs include school fees, school materials and school facilities and basic needs (food, cloths, shelters, love and belongingness). It was grouped into two categories, namely *low-income families*, and *high-income families*. Low-income families are families whose monthly income is unable to satisfy the basic needs of that family members. Whereas on the other hand, high income families, were described as families whose monthly income satisfied the basic needs for the family members and save a certain amount for the future.

The level of family income determines the type of school that the springs will attend. It is hard for low-income families to provide successful education to their children. Families with low income especially those identified in the first categories of Ubudehe are unable to provide adequate facilities to the children such as food, school uniforms, shoes, school materials (books,

notebooks etc.). Interviewees also noted that, a child who often report to school without school materials are experiencing school duplications and duplication is an indicator of internal inefficiency of school.

They further note that majority of pupils from poor households, especially those allocated in the first and second categories of Ubudehe are often absent from the schools due to the fact that they are assisting their mothers to look for food and this influence internal efficiency of schools where they are members. And this was supported by Danesty and Okedian (2012) who have commented that low-income parents are unable to create favorable learning environment in their home which a barrier to the academic progress of their children.

*The second group of interviewees:* The second group of interviewees categorized parental income in three categories. The first category was *low-income families*, category two was *medium income families* and category three was *high income families*. The lower income families were described as family with deficient budget. This means that family income is lesser than family expenses; the medium income family were described as families with balanced budget. This means that family income equals to family expenditure. This was not considered because has no effects on this study. Then high-income families were described as families which have surplus budget. This means the families whose incomes is greater than family expenditures.

Parental incomes influence internal efficiency. This was due to the facts that pupils from rich household tend to remain focused on school activities. Since the parents provide to them all necessary school materials. In addition, rich households are able to employ home teachers who provide learning support and monitor academic progress in the family. On the other hand, pupils from low-income families tend to leave school very early due to various learning constraints in their academic journey such as lack of school fees, school materials (school uniforms) and school facilities (notebooks, textbooks, pens, mathematical sets, computers etc.) as well as the shortage

of basic needs like food. This emphasizes that, the higher the family income is the lower dropout and repetition rate will be, and the lower family income is the higher dropout and repetition rates will be. The support of these findings was in the study carried out in Uganda, Ntitika (2014) and in Tanzania, Victory (2016) which was aimed to understand dropout and repetition rates in rural regions. Those studies have revealed low income of the households is an important key determinant of dropout and repetition rates.

#### **4.5.7 Hypothesis Tested on the role of parental incomes on internal efficiency of primary schools in public primary school in Western province Rwanda**

To establish a relationship between parents' earnings and internal operations in primary schools in Rwanda's Western province, a correlational coefficient was calculated. There was a pair of mutual exclusive hypothesizes which are null and alternative hypothesizes. They are called mutual exclusive hypothesizes because we reject null hypothesis to accept alternative hypothesis or we accept null hypothesis to reject alternative hypothesis.

The null hypothesis (H<sub>0</sub>) investigated here was that parental income has no effect on internal efficiency in Rwandan primary schools in the Western Province. Alternative hypothesis (H<sub>1</sub>): Parental income has a major impact on internal efficiency in Rwandan primary schools in the Western Province. The statistical test used was the Karl Pearson product moment correlational coefficient, with the p-value approach as the decision rule. If the thresholds of significance to reject or uphold the null hypothesis were 5% or 0.05, the decision to reject or uphold the null hypothesis would be made with 95 percent confidence. The p-value is the likelihood of obtaining a sample mean given the value provided in the null hypothesis being true. If the p-value is less than 5% (P<0.05), the null hypothesis will be rejected and the alternative hypothesis will be accepted, however if the p-value is larger than 5% (p>0.05), the null hypothesis will be accepted

and the alternative hypothesis will be rejected. Table 4.24 shows the outcomes of the hypothesis tests.

**Table 4.24: Correlation between incomes of the parents and internal efficiency in primary schools in Western province of Rwanda**

*Correlations*			
n°	Independent Variables	Statistical test	Dependent Variable (Marks scored by pupils in national examinations)
1	Ubudehe category	Pearson Correlation Sig.(2-tailed)	.157 .002
2	Extent to which miss school because of school materials and facilities	Pearson Correlation Sig.(2-tailed)	-.943 .004
3	Meal (lunch)	Pearson Correlation Sig.(2-tailed)	.144 .004
4	Extent to which looks after family animals on school days	Pearson Correlation Sig.(2-tailed)	-.164 .001
5	Extent to which collect wire and fetch water on school days	Pearson Correlation Sig.(2-tailed)	-.151 .002

\*\* . Correlation is significant at the 0.05 level (two-tailed).

Listwise N=406

Computation was based on the confidence level of 95%

The findings presented in the table 4.24 shows two important findings. \*Correlation coefficient levels and \*\* significance levels.

The data suggest that there is a low positive degree of link between Ubudehe category of pupils' family and marks achieved by pupils in PLE, as shown by 0.157 significant at 0.002 p0.05 based on Karl Pearson product moment correlational coefficient.

Putting into account the extent to which pupils look after family animals on school days, the output shows that there is low negative degree of relationship between the two variables. As indicated by -0.164 significant at  $0.001 < p < 0.05$ . This means that looking after family animals on school days have negative influence on pupils scores in schools.

Taking into account extent to which pupils fail to report to school due to the lack of school materials it was concluded that lack of school materials has strong negative degree of relationship on academic progression of pupils in primary schools in Western province of Rwanda as indicated by -0.943 significant at 0.004.

Basing on the extent to which pupils take meals, it was concluded that meals taken by pupils correlate with pupils scores in PLE at 0.144 significant at  $0.004 < p < 0.05$ . This means that an increase in the number of pupils who get meal (food) at school improves grade scores of pupils in PLE.

Basing on the extent to which pupils collect firewood and fetch water on school days the output shows that there is a low negative degree of relationship between the two variables. This means that time taken by pupils fetching water and collecting firewood on school days reduce grade scores of pupils in PLE.

The output of the computed sample variables shows significant levels of 0.002; 0.004, 0.004, 0.001, and 0.002 all  $< p < 0.05$ . Based on the set rule saying that if critical value is lesser than 5% or  $p < 0.05$  reject null hypothesis and accept alternative hypothesis. There is strong evidence to reject null hypothesis. As a result, we find that parental income has a considerable impact on the internal efficiency of primary school students in Rwanda's Western Province. These findings matched those of Tuyisenge, et al., (2015), who found that parental wealth is one of the determinants influencing academic achievement of pupils at public day secondary schools in Kigali's Gasabo district.



## **4.6 PARENTAL EDUCATIONAL LEVELS AND INTERNAL EFFICIENCY OF PUBLIC PRIMARY SCHOOLS IN IN WESTERN PROVINCE OF RWANDA**

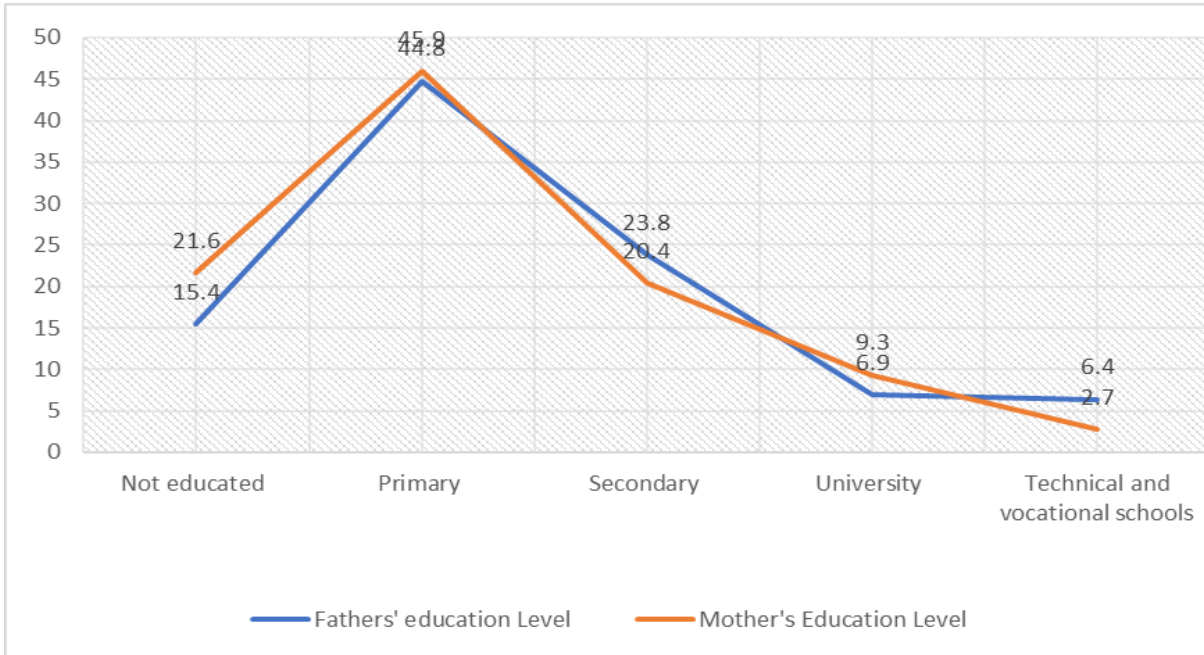
The third objective of this study was to determine the impact of parental education levels on internal primary schools' efficiency in Rwanda's Western Province. Information for the conclusion on this objective was gathered through surveys given to teachers and students, as well as an interview guide given to headteachers and district directors of education in Western Province districts. In addition, information was gathered using document analysis schedules. In schools, reviewed documents were discovered. The thematic method was utilized to examine acquired qualitative data, while descriptive and inferential statistics were employed to analyze collected quantitative data. The findings were presented using tables, graphs, and textual models. The following was the order of the presentations: findings from students; findings from teachers; schedule of interviews; document analysis; summary of mean, standard deviation, and output from hypothesis testing.

### **4.6.1 Pupils Responses showing the Influence of Parental Educational Levels on Internal Efficiency of Public Primary Schools in Western Province Rwanda**

This section determined the impact of parental educational levels on the internal efficiency of public elementary schools in Rwanda's Western Province. To achieve this objective, there was a need to understand descriptive statistics of mothers and fathers' education levels, i.e. numbers of mothers and fathers who have formal education, education levels, Language spoken, and parental involvement in learning activities of the pupils.

i. **Educational Levels of Parents in Western Province of Rwanda.**

For this study, the level of parental education was a crucial aspect to evaluate. To this aim, information linked to this variable was collected. The acquired data was given in figure 4.16 after the analytical process.



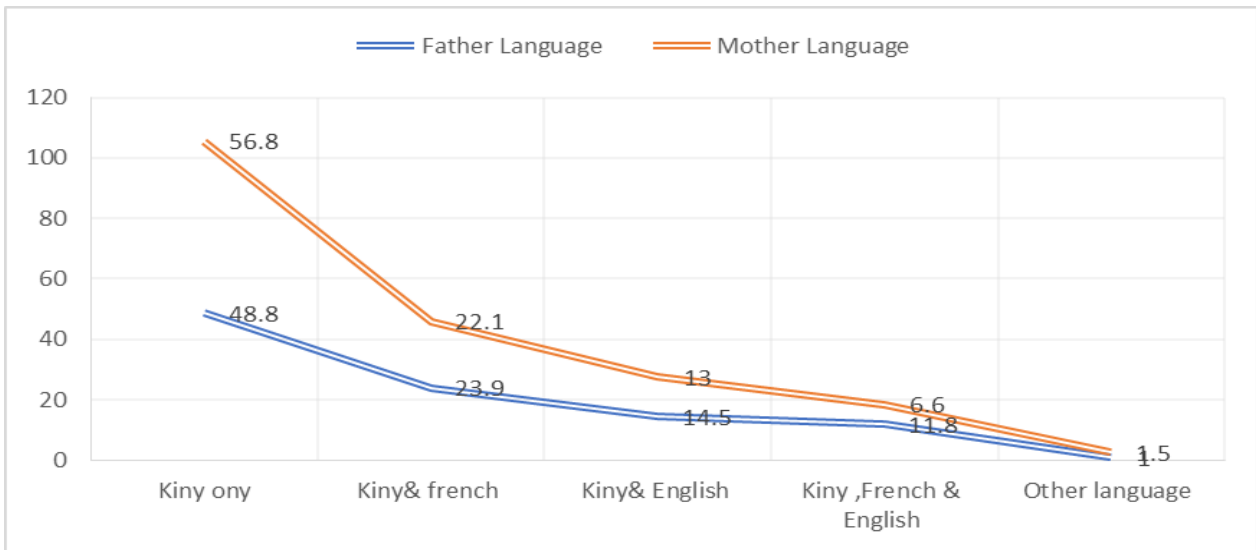
**Source:** Primary data (2019)

**Figure 4.18 Distribution of parents by educational levels**

The figure 4.18 shows that majority of the parents in Western Province of Rwanda have primary level of education as indicated by (45.90%; 44.80%) fathers and mothers respectively. About (21.60%) of mothers and (15.40%) of fathers did not attend any formal schooling. About (23.80%) of fathers and (20.40%) of mothers had secondary levels of education whereas only (9.30%) of mothers and (6.90%) of fathers had university level.

ii. **Languages Mostly spoken by parents in Western Province Rwanda**

Language is an important tool for communication. It plays crucial role in teaching and learning process. Due to the values of parental language in learning process of the pupils, there was a need-to-know languages mostly spoken by parents in Western province. Collected data was presented in the figure 4.19.



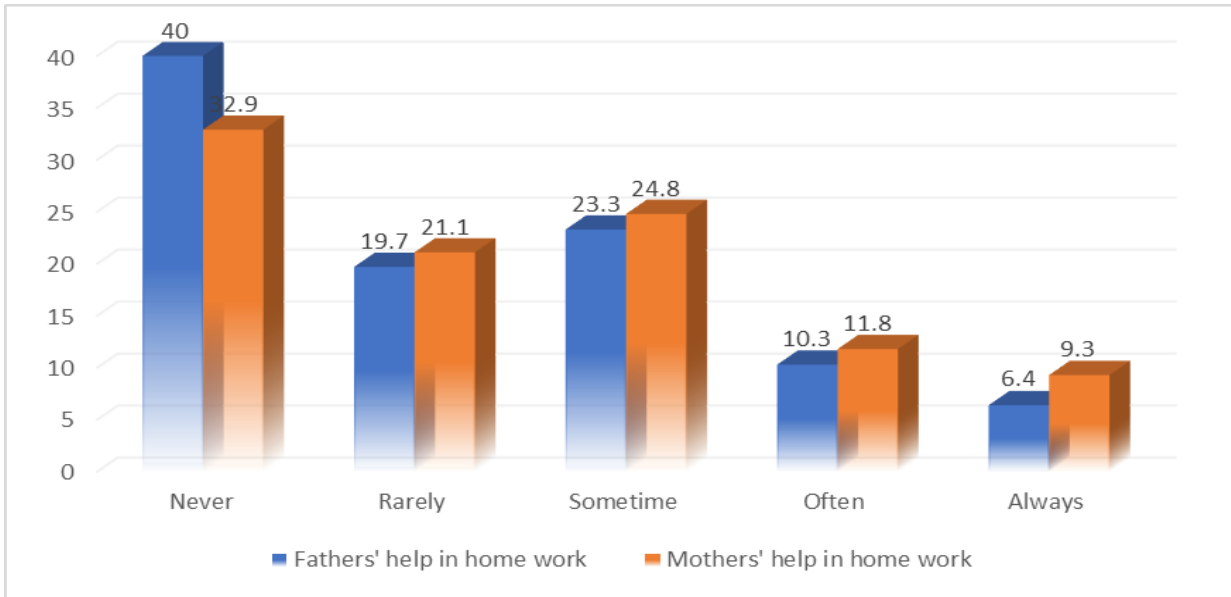
**Source:** Primary data (2019)

**Figure 4.19 Languages mostly spoken by parents in Western Province of Rwanda**

Figure 4.19 showed that majority of the parents in Western Province of Rwanda speak only mother tongue (Kinyarwanda). This was indicated by the rates of (56.80% and 48.80%) for both mothers and father respectively. About (22.10%) of mothers and (23.90%) of fathers speak both Kinyarwanda and French. About (13.00%) of mothers and (14.50%) of fathers speak both Kinyarwanda and English. And about (6.60%) of mothers and (11.80%) of fathers were able to speak English, French and Kinyarwanda. Only 1.50 percent were able to speak additional languages such Kiswahili, Kirundi, Kigande and Lingala.

iii. **Pupils Responses Showing Parental help to Pupils in doing homework**

There was need to know the extent to which parents (mother & father) involved in academic activities of their children. Collected data was presented in the figure 4.20



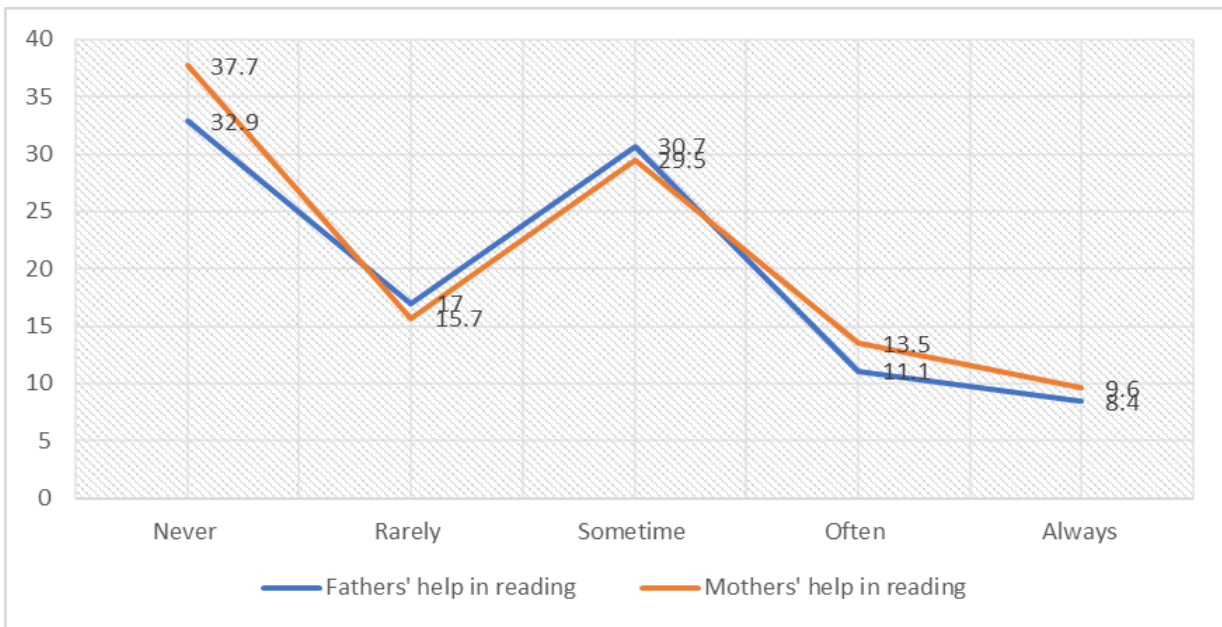
**Source:** Primary data (2019)

**Figure 4.20** Extent to which parents help pupils in doing homework

Figure 4.20 shows that majority of parents in Western Province of Rwanda didn't help the children to do homework as indicated by (40.00% and 32.90%) of fathers and mothers respectively who have never helped their children. About (17.70%) of fathers and (21.10%) of mothers have rarely helped their children (23.30%; 24.80%) of fathers and mothers respectively have sometimes help children when doing homework. However, only (16.70% of the fathers and 21.10%) of the mothers always help the children do homework.

iv. **The Extent to which Parents Help Pupils to Read Books**

There was a need to understand the extent to which parents in Western province Rwanda help their children to read books. This was essential in this study because reading skills is very important for pupils' academic progress. The collected data was presented in the figure 4.21

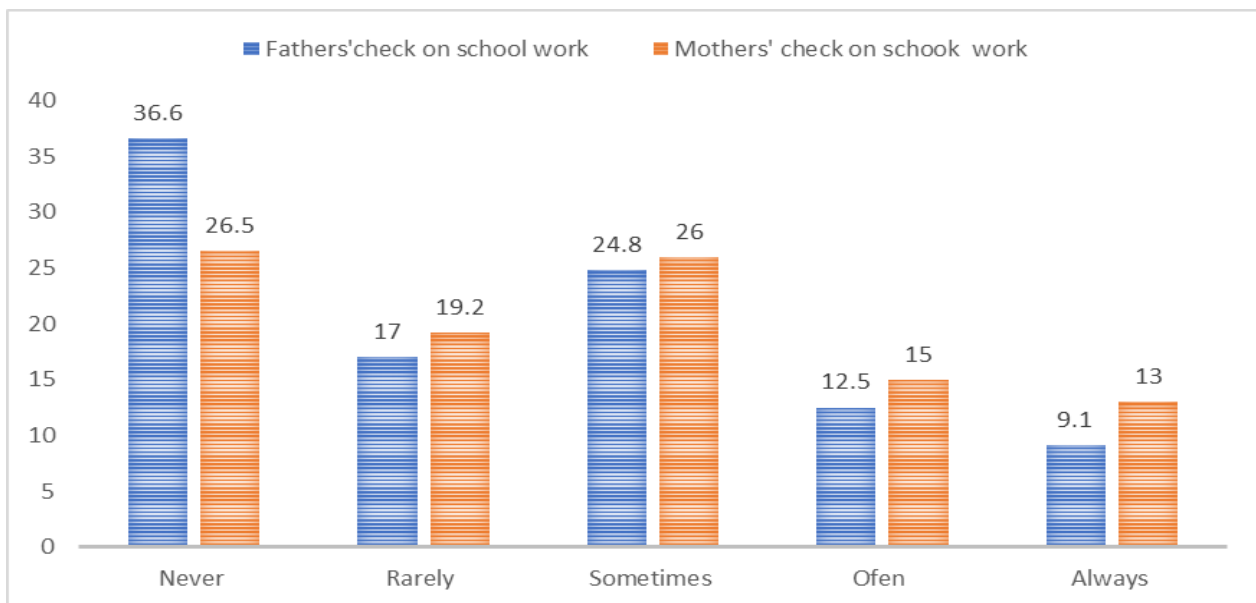


**Figure 4.21** Extent to which parents help pupils to read books

Figure 4.19 shows that (32.90%) of fathers and (37.70%) of mothers never help their children to read book; (17.00%) of father and (15.70%) of mothers rarely help their children; (30.70%) of fathers and (29.50%) of mothers sometime help their children to read books; (11.10% and 13.50%) of fathers and mothers respectively often help their children to read books; (8.40% and 9.60%) of fathers and mothers respectively always help their children to read books. This tells us that majority of parents in Western province Rwanda do not help children to read.

## V. Findings showing the Extent to which the Parents Check for Pupils School Works

The study sought to establish the extent to which parents involved in schooling activities of their children. This was done by asking pupils to show the extent to which their parents check on school works. The collected data was presented in the figure 4.22.

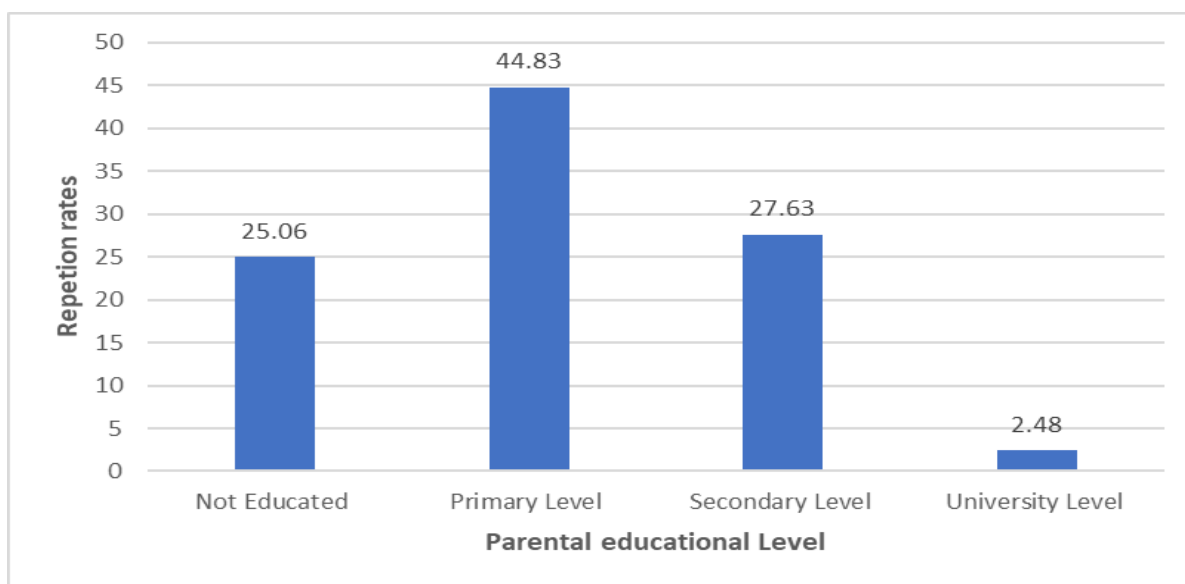


*Figure 4.22 Extent to which parents check over pupils' school works*

Figure 4.22 shows that majority of parents in Western Province didn't follow up the academic activities of their children. This was indicated by (53.60%) of fathers and (45.70%) of mothers who have never check pupils' school works, (24.80%) of fathers and (26.00%) of mothers who sometimes check pupils' school works; only (21.60% and 28.00%) fathers and mothers respectively often check school works assigned to their children by the teachers at school. It was also shown that women in Rwanda's Western area are more interested in their children's academic endeavors.

#### 4.6.2 Parental Educational Levels and Pupils' Repetition Rates in Public Primary Schools in Western Province of Rwanda

Parental educational level is one among the key variables to consider when examining socio-economic parameters. In addition, available literature shows that parental educational levels correlate with repetition rate of students worldwide as established by different researchers from different research institutions such as Gianna and Giannulli (2018), UNICEF (2013), UNESCO (2014). It was of great value to collect data that shows relationship between parental educational levels and repetition rate of pupils in Western province of Rwanda as summarized in the table 4.23.



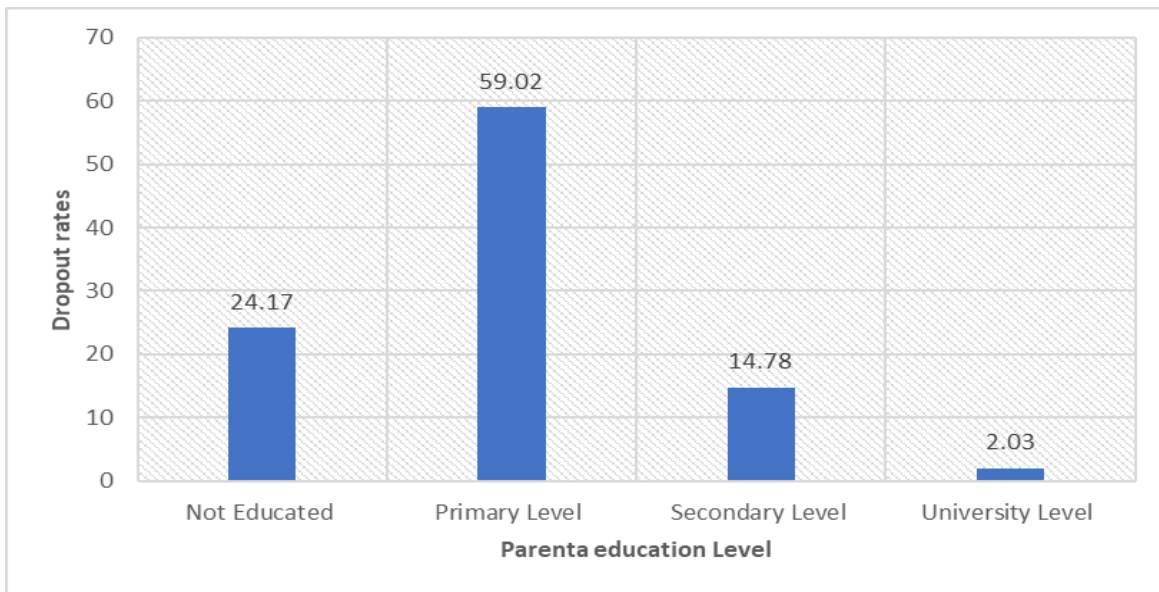
**Figure 4.23 Parental educational level and pupils repetition rates**

Figure 4.23 shows that repetition rate is very high among the pupils whose parents have primary level of education as indicated by 44.83 percent and decreased to 2.48 percent for pupils whose parents are university graduate. This indicates that the rate of repeat in Rwanda's Western province decreases as one's educational degree rises. These findings are consistent with those of

Ntawiha (2016), who found that parental education levels have a high relationship with student dropout rates in public secondary schools in Nyarugenge and Nyamasheke Districts in Rwanda.

#### **4.6.3 Influence of Parental Educational Levels on Dropout Rates of Pupils in Public Primary Schools in Western Province of Rwanda.**

The literature on the impact of parental educational levels on student dropout rates in various parts of the world produced mixed results. This work is a response to Farooq et al., (2011), Fannie and Mueller (2008), and De Guzman and Gallardo (2017). Figure 4.24 depicts the information gathered.



***Figure 4.24 Parental educational Levels and pupils' dropout rate***

Figure 4.24 shows that dropout is very high among pupils whose parents have primary level of education as indicated by 59.02 percent and decrease up to 2.03 percent for pupils whose parents are university graduate. This demonstrates that there is a strong link between parental educational attainment and dropout rate. This was also validated in research undertaken by Laterite (2017) in support of UNICEF on the advice of ministry of education of Rwanda.



### 4.6.3 Findings Teachers' Perceptions on the Role of Parents' Education Levels on Internal Efficiency of Public Primary Schools

Information for the conclusion on the impact of parental educational levels on internal efficiency in public primary schools in Rwanda's Western Province was gathered not only from students' questionnaires, but also from teaching personnel. Teachers in primary schools were given questionnaires in the form of a Likert scale. Teachers were asked to indicate how much they agreed or disagreed with the statements by clicking the appropriate box on the questionnaires provided. Table 4.25 summarizes the information gathered.

**Table 4.25 Responses showing teachers' perceptions on the role of parents' education levels on internal efficiency of public primary schools in Western province of Rwanda.**

Statements	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
Educated parents are more committed on academic progression of their children than non- educated parents	3	2.7	10	9.1	6	5.5	57	51.8	34	30.9
Pupils from non-educated households are more likely to repeat and dropout classes that pupils from educated households	2	1.8	10	9.1	10	9.1	58	52.7	30	24.3
Educated parents act as second teacher to their children, and possess positive attitude to word children schooling	7	6.4	9	8.2	11	10.0	66	60.0	17	15.5
Parental attitude to word pupils' repetition and dropout in schools change with the change of educational level.	4	3.6	10	9.1	11	10	58	52.7	27	24.5
<b>AVERAGE</b>	<b>4</b>	<b>3.6</b>	<b>10</b>	<b>9.6</b>	<b>9</b>	<b>8.1</b>	<b>60</b>	<b>54.2</b>	<b>27</b>	<b>24.4</b>

Teachers' comments to the influence of parental educational levels on children' repetition rates in elementary schools in Rwanda's Western province are presented in table 4.25. The stated statements were used to base the analysis and presentations.

Statement one was “*educated parents are more committed on academic progression of their children than non- educated parents*”. The results here, shows that (3, 2.70%) strongly disagree; (10, 9.10%) disagree; (6, 5.50%) were neutral; (57, 51.80%) agree, and (34, 30.90%) strongly agree that educated parents are more committed on academic progression of their children than less educated parents.

The second statement was “*pupils from non-educated households are more likely to repeat and dropout classes than pupils from educated households*”. The computed outputs revealed that that (2, 1.80%) strongly disagree; (10, 9.10%) disagree; (10, 9.10%) were neutral; (58, 52.70% agree, and (30, 24.30%) strongly agree that pupils from non- educated households are more likely to repeat and dropout classes than pupils from educated households.

The third statement was “*Educated parents act as second teacher to their children, and possess positive attitude to word schooling of the children*”. The results showed that (7, 6.40%) strongly disagree; (9, 8.20%) disagree; (11, 10.00%) were neutral; (66, 60.00%) agree, and (17, 15.50%) strongly agree that educated parents act as second teachers to their children and possess positive attitude to word schooling of the children.

The fourth statement was “*parental attitude to word pupils’ repetition and dropout in schools change with the change of parental education level*”. The results from the computed data indicated that (4, 3.60%) strongly disagree; (10, 9.10%) disagree; (11, 10.00%) were neutral; (58, 52.70) agree, and (27, 24.50%) strongly agree that parental attitude on pupils’ class repetition and dropout changes with the change in educational level of the parents.

On average, the findings from teachers’ responses indicated that (4, 3.60%) strongly disagree; (10, 9.60%) disagree; (9, 8.10%) were neutral; (60, 54.20%) agree, and (27, 24.40%) strongly agree that educational level of the parents influence internal. The table 4.24 also shows that only 13.20 percent disagree, 8.10 percent did not answer the questions. In Rwanda's Western province, almost 78.60 percent feel that parental educational level has a major impact on internal efficiency in public elementary schools. These findings matched those of Emeka (2012), who discovered

that children of educated parents are more driven to succeed in school than children of less educated parents. In similar ways, Mamet and Mudassar (2017), asserted that educated parents possessed favorable attitude towards education, this improves students' motivation and effective progress in schools.

#### **4.6.5 Findings from Interview guide Showing Influence of Parental Educational Levels on Internal efficiency in public primary schools in Western Province of Rwanda**

Information that formed the basis for conclusion on the influence of parental educational levels on internal efficiency in public primary schools in Western province of Rwanda, was not only collected from questionnaires distributed to pupils and teachers but also, from interview directed to headteachers and to DDEs. Thematic approach was used to analyze the collected data and textual model was used to present the findings. Thematic approach was suitable for this study because there was a need to understand people' views and opinions about the raised issues.

It was found that parental education level was categorized into two group (Illiterate or non-educated parents and literate or educated parents). In the social learning theory that Bandura developed in 1969 shows that parents are primary role models to their children, and Musgrave (2000), have asserted that children from educated parents are always likely to follow the footsteps of their parents and work actively in their studies. So, the interview responses showing the influence of parental educational levels on internal efficiency in primary schools in Western province Rwanda was summarized in the following themes.

##### **➤ Educated parents act as the second teachers to their children**

An educated parent acts as the second teacher to his/her child and this improves academic progress of the child than a child whose parents are not educated. Educated parents provide

academic support to their children through participation in the school activities such as doing homework, reading books, revising learnt content etc. Children from highly educated parents are good at instructional language, this helps them to perform better in classroom activities and reducing children's probability to repeat the class. This corroborates with the findings presented by Musarat, (2013) in his research conducted on 250 students from University of Sargodha, Pakistan, and revealed that students from educated parents recorded better G.P.A. than students from uneducated parents. To the same extent, Ahmad et al. (2013) also stated that a parent with an educational background would be in good position to be the second teachers to his/her children and he/she will deliberately guide and advises the children on the best way to improve performance at school.

➤ **Educated parents invest more in their children' education**

Educated parents possess an advanced positive attitude towards social and economic benefits of education. They incur huge financial cost to enroll their children in private school where school fees paid is high but providing quality education i.e., repetition rate will be low. Furthermore, educated parents whose children enroll in public schools are more committed than their counterparts whose parents have never attended formal schools. They are ready to provide every school material, school tools, school feeding and any other financial support required to boost academic progression of their children, these findings were supported by Ahmad (2013) noted that children from families where parents have less education tend to perform systematically worse in school than pupils whose parents have high education level. To him, educated parents provide intellectual, economical, psychological and emotional support to their children which in turn make them be more comfortable and adjust to the learning environment and this result in high academic performance

➤ **Educated parents provide learning motivation to their children**

Motivation is a driving force pushing someone to do something. Educated parents provide their offspring internal and external motivation to learn. A child in academic household born with learning motivation received from his/her parents' genes during the process of genetic transmission. Whereas external motivation is received from friendly and conducive learning environment created by the parents as results of their educative knowledge and experiences. This stimulates child's academic progression without wastage (dropout & repetition). Rana (2015), argued that parental education is such a motivating force for a child which paves and it is an admitted fact that the children of educated parents are more confident, resourceful and experienced than the children whose parents lack education.

Furthermore, Majority of interviewees revealed that majority of the parents in rural region of Western Province of Rwanda do not maximally participate in the schooling of their children. The major reason for this, was low level of literacy and numeracy among parents. For example, majority of adults is enough, no need to add people in the province speak only mother tongue (Kinyarwanda) whereas, the language of instruction at school is English. This undermines schooling of the children. Furthermore, non-educated parents lack sufficient knowledge of their roles in education leading to the increment of repetition rate among their children. From there, we can conclude that the higher parental education, the lower pupils repetition rate will be, and the lower parental education levels, the high pupils repetition rate will be.

**4.6.6 Relationship Between Parental Education Levels and Pupils’ Academic Performance in Primary Leaving Examination in primary schools in Western Province Rwanda.**

There was a need to establish mean scored by pupils based on the indicators of parental educational levels because pupils’ repetition in classes is associated with academic performance of the pupils. i.e., that low performance stimulates repetition of the pupils. The computed results were presented in the table 4.26.

**Table 4.26 Relationship between parental educational levels and student performance in PLE in Primary schools in Western Province of Rwanda.**

Variables	Indicators	Mean scores	Std. Deviation	Variance	N	Percentages (%)
Father’ education	Not educated	50.00	6.508	42.355	63	15.40 %
	Primary	50.03	6.383	40.748	188	46.10 %
	Secondary	51.87	7.202	51.872	100	24.50 %
	University	51.06	4.861	23.638	29	7.10 %
Mothers’ education	Not educated	48.86	6.067	36.809	88	21.60 %
	Primary	49.95	6.118	37.439	187	45.90 %
	Secondary	52.26	7.107	50.514	83	20.40 %
	University	53.23	6.945	48.240	38	9.30 %
Father’ language	Kiny only	50.10	6.256	39.147	198	48.30 %
	Kiny & French	49.86	6.475	41.930	97	23.60 %
	Kiny & English	52.67	7.525	56.636	59	15.10 %
	Kiny, French & English	51.35	6.383	40.744	48	12.00 %
Mothers’ language	Kiny only	50.18	6.134	37.636	231	56.80 %
	Kiny & French	49.87	6.412	41.120	90	22.10 %
	Kiny & English	52.01	7.407	54.865	53	13.00 %
	Kiny, French & English	53.74	8.373	70.123	27	6.600 %
Fathers’ help in home work	Never	50.04	6.404	44.955	163	39.60 %
	Rarely	50.46	6.199	38.429	80	19.60 %
	Some time	50.86	5.760	33.183	95	23.50 %
	Always	52.18	7.913	62.631	43	10.90 %
Mothers’ help in home works	Never	50.49	7.113	50.598	134	32.90 %
	Rarely	49.72	5.337	28.486	86	21.10 %
	Sometimes	50.39	6.499	42.222	101	24.80 %
	Always	53.26	7.660	58.686	38	9.30 %
	Never	50.26	6.844	46.841	134	32.70 %
	Rarely	51.13	6.997	48.968	69	17.10 %

Fathers' help to read	Some times	50.31	5.969	35.636	125	30.60 %
	Always	51.02	7.549	56.999	34	8.40 %
Mothers' help to read	Never	50.39	7.206	51.928	129	31.70 %
	Rarely	49.85	5.970	35.647	64	15.70 %
	Some times	50.55	6.139	37.695	120	28.50 %
	Always	53.53	7.866	61.887	39	9.60 %

The table 4.26 shows that majority of parents in Western province of Rwanda have primary level of education as indicated by 46.10 percent of fathers and 45.90 percent of mothers. About mean score: It was established that pupils whose parents were uneducated, scored the lowest mean in PLE (48.86% and 50.00%) mothers and fathers respectively. Whereas pupils whose parents were educated scored the highest mean (53.23% and 51.06%) mothers and fathers respectively. This insists that education levels of the parents influence pupils' performance rate. This was supported by Musarat (2013) in the study conducted on 250 students from University of Sargodha Pakistan, revealed that there is a significant relationship between parental education levels and students Grade Point Average (G.P.A).

It was also revealed that mothers' education had significant influence on pupils' academic achievement than fathers' education (see table 4.26). Importance of mothers' education was also emphasized by UNESCO (2014) that education of mothers helped to reduce stunting rates among children on the globe. For example, In Vietnam, infants whose mothers reached lower secondary education were 67.00 percent less likely to be stunted. UNESCO (2014) further noted that if all mothers in developing countries had at least primary level of education, 1.7 million children would be saved from stunting and if those mothers had a secondary education, 12.2 million children would be saved from stunting. This is due to the fact that educated mothers ensure that their children are vaccinated; sufficiently breastfed; fed with rich food etc.

Table 4.26 also showed languages spoken by parents in Western Province Rwanda. It was revealed that majority of parents speak only mother tongue (Kinyarwanda) as indicated by (48.30%; 56.80%) fathers and mothers respectively. English language as medium of instructions in schools was spoken only by (15.10% and 13.00%) fathers and mothers respectively. About mean scores: it was revealed that pupils whose parents speak English showed the highest mean than others (52.67%; 52.01%) fathers and mothers respectively. The current findings corroborated with those of the study carried out by Benimana and Theogene (2016) which revealed that pupils whose mothers were unable to speak instructional language used at schools recorded the lowest mean score the examinations.

Table 4.26 also showed the extent to which parents helped children to do homework: It was revealed that majority of the parents in Western province of Rwanda have never helped their children to do homework. This was indicated by 39.60 percent fathers and 32.90 percent mothers. It was also revealed that only 10.90 percent of fathers and 9.30 percent of mothers often assist their children to do the homework assigned from school.

Based on mean scores: it was revealed that pupils whose parents always help them to do the homework showed higher score that pupils who have never been helped by the parent. This was indicated by mean of 52.18 percent for fathers and 53.26 percent for mothers. These findings corroborated with the findings of the study carried out by Jean de Dieu (2018) which showed that there was a positive degree of relationship between parental involvement and students' academic performance in 12YBE in Nyarugenge District.



Furthermore T-test was also computer to determine if the existing relationship between parental educational level and the mean scored by pupils in PLE in Western Province was valid.

Computed data are presented in the table 4.27.

**Table 4.27 Parental Educational Levels and Pupils Academic Performance**

<b>One-Sample Test</b>						
	T	Df	Test Value = 5.57			
			Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Father education	-60.266	407	.000	-3.14353	-3.2461	-3.0410
Mother education	-67.755	406	.000	-3.31447	-3.4106	-3.2183
Father language	-67.304	405	.000	-3.64635	-3.7529	-3.5399
Mother language	-76.123	406	.000	-3.83044	-3.9294	-3.7315
Father 'help in homework	-53.517	406	.000	-3.33413	-3.4566	-3.2117
Mother' help in homework	-48.445	406	.000	-3.13511	-3.2623	-3.0079
Father 'help to read	-49.272	406	.000	-3.12037	-3.2449	-2.9959
Mother help to read	-46.514	406	.000	-3.03437	-3.1626	-2.9061
Father' check on school work	-47.938	406	.000	-3.16459	-3.2944	-3.0348
Mother' check on school work	-42.746	406	.000	-2.87713	-3.0094	-2.7448

**Source:** Primary Data, (2020)

The figure 4.27 shows that there is a strong degree of association between parental educational levels and student grade scores in PLE in primary schools in Western province Rwanda as indicated by  $0.000 < p (0.05)$  to all sampled variables. This confirmed that parental education influence academic performance of pupils in primary schools. These findings were against the findings published by Machebe, Ezedge and Onuaha (2017), which concluded that there is no significant relationship between parental levels of education and student academic performance in in secondary schools in Tokyo-Japan.

#### **4.6.7 Hypothesis Tested to Establish the Influence of Parental Education Level on Internal Efficiency in Primary Schools in Western province of Rwanda**

Regression analysis was computed to establish the influence of parental educational levels on internal efficiency of primary schools in Western province Rwanda. There was a pair of mutual exclusive hypothesizes which were null hypothesis and alternative hypothesis. They were mutual exclusive hypotheses since one is accepted another get rejected. This mean that once you reject null hypothesis, you accept alternative one, or accept null hypothesis to reject alternative hypothesis.

The third null hypothesis (H<sub>0</sub>) tested in this study was, “*there is no significant influence of parental educational levels on internal efficiency of primary schools in Western Province of Rwanda*”. Whereas the third alternative hypothesis (H<sub>1</sub>) tested was, *there is a significant influence of parental educational levels on internal efficiency of primary schools in Western province of Rwanda*. The statistical test computed was linear regression. Decision rule was based on p-value approach. P-value approach stated that if the level of significance to hold the decision to either reject or uphold the null hypothesis was 5% or 0.05, which mean 95 percent degree of confidence. Then, the probability obtained a sample mean given the value stated in the null hypothesis was true stated as p-value. If p-value is less than 5% ( $P < 0.05$ ), the null hypothesis will be rejected and accept alternative hypothesis, while, if P-value is greater than 5% ( $p > 0.05$ ) null hypothesis will be accepted and reject alternative hypothesis. Hypothesis tested results were presented in the table 4.28. and 4.29.

**Table 4.28: Model Summary Showing Parental Educational Levels and Internal Efficiency**

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.235 <sup>a</sup>	.055	.031	6.48635	.055	2.308	10	394	.012

a. Predictors: (Constant), mother' check on school work, father education, mother language, father 'help in homework, mother education, father language, father 'help to read, mother help to read, father' check on school work, mother' help in homework

b. Dependent Variable: average marks scored by pupils in %

Table 4.28 shows that there is a low positive degree of relationship between parental educational levels and internal efficiency of primary school in Western Province of Rwanda. This was indicated by r equal to 0.235. The table 4.27 also presented r square of 0.055. This means that parental educational levels can only explain 5.50 percent of internal efficiency of schools in Western province of Rwanda. These findings are in line with the findings presented by Habyarimana (2018) where concluded that there is low positive degree of relationship between parental educational levels and academic progression of students in public secondary schools in Nyarugenge district.

**Table 4.29 Coefficients on Parental Educational Level and Internal Efficiency**

Model	Unstandardized Coefficients		Standardized coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
(Constant)	47.793	1.069		44.718	.000	45.692	49.895
Father education	-.484	.357	-.077	-1.359	.175	-1.185	.216
Mother education	1.487	.392	.223	3.798	.000	.717	2.257
Father language	.232	.366	.038	.635	.526	-.487	.951
Mother language	.225	.398	.035	.565	.573	-.558	1.007
Father 'help in homework	.176	.361	.034	.489	.625	-.533	.886
Mother' help in homework	.127	.411	.025	.308	.758	-.681	.934
Father 'help to read	-.266	.409	-.052	-.650	.516	-1.071	.538
Mother help to read	.116	.391	.023	.297	.766	-.653	.885
Father' check on school work	-.099	.393	-.020	-.252	.801	-.872	.674
Mother' check on school work	-.124	.352	-.026	-.353	.725	-.817	.569

a. *dependent variable: average marks scores of pupils in%*  
*\*P<.05*

**Source:** Primary data, (2019)

The table 4.29 showed that mother’s education significantly influences academic progression of pupils more than other variables. This was shown by standard coefficient beta of 0.223 equal to 22.3 percent significant at .000.

Table 4.29 shows critical values on each indicator of parental education level. It was established that fathers’ education was sig.175>.05; mothers’ education was sig .000<.05; fathers’ language sig.526>.05; mothers’ language was sig .573>.05; fathers’ help in homework was sig .625>.05; mothers’ help in home work was sig .758>.05; fathers’ help to read was sig .516>.05; mothers’ help to read was sig .766>.05. From critical values presented, majority of them were lesser than p-value of .05. Based on the set rule, there is no strong evidence to reject null hypothesis. We

therefore concluded that there are no significant influences of parental educational levels on internal efficiency in primary schools in Western province of Rwanda. These findings were against the findings presented by Mudassir & Norsuhaily (2015); Nassehinia & Ahri (2016), and Ngetich (2015) where throughout their studies have reportedly showing that parental educational levels influence drop out and repetition rates, enrollments and completion rates of students.

#### **4.7 INFLUENCE OF FAMILY HOUSING CONDITIONS ON INTERNAL EFFICIENCY IN PUBLIC PRIMARY SCHOOLS IN WESTERN PROVINCE RWANDA**

The literature shows that numerous researches have been carried out to establish housing conditions in Rwanda (NISR, 2014; MINAROC, 2020; MINICOFIN, 2019). However, these studies did not show the influence of housing conditions on internal efficiency. To the same extent Harker (2007), have reportedly argued that housing condition affects academic achievement of students. To this effect, there was a need to establish the influence of family housing conditions on internal efficiency in primary schools in Western Province of Rwanda. To achieve this, data was collected from questionnaires administered to pupils and to teachers, and semi structured interview administered to headteachers and district directors of education.

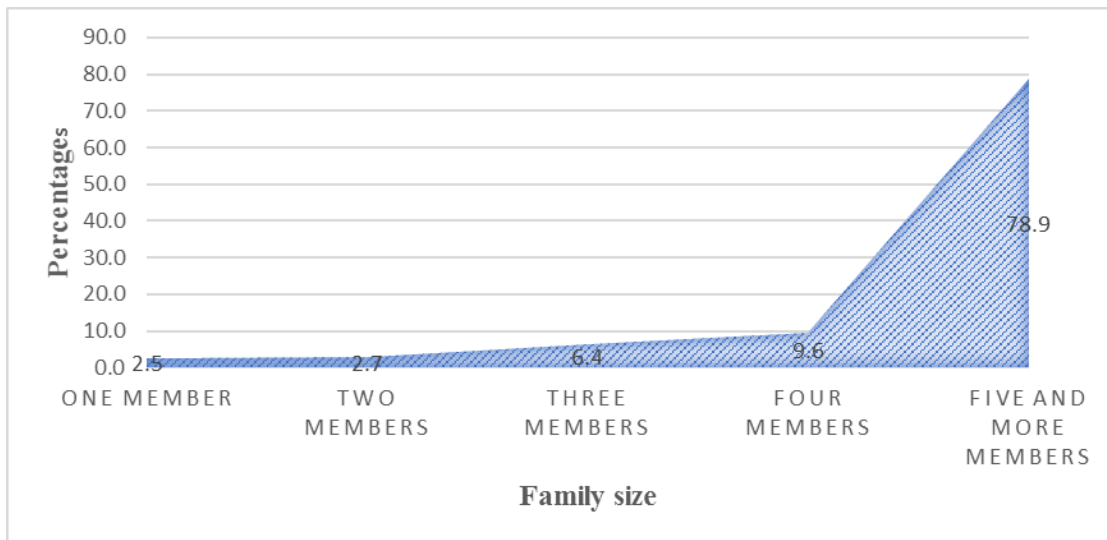
There were two categories of questionnaires (for pupils and for teachers). Questionnaire for pupils was distributed to 408 respondents. It was designed in the ways that helped the researcher to understand family housing conditions of pupils' families and its influence on internal efficiency in primary schools. Questionnaire for teachers was distributed to 110 teachers. It was designed in the ways that helped to understand general overviews of pupils' family living conditions and its influence on academic progression of pupils. Interview guide and document analysis provided the supporting and balancing data to what collected from questionnaires. Descriptive statistics and inferential statistics were computed on quantitative data using SPSS 22<sup>rd</sup> Version. Qualitative data was analyzed using thematic approach. Tables, graphs, and textual models were used to present the findings.

#### 4.7.1 Findings from pupils showing the influence of family housing conditions on Internal Efficiency in primary schools in Western Province of Rwanda

Pupils were asked to provide the answers showing the housing to the researcher the pupils family size, number of rooms making family house, source of power used in the family, distance used to get clean water and nature of family house.

##### i. Distribution of Pupils by Family Size

There was a need to understand the numbers of people making a family or a household in Western province of Rwanda. To achieve this each pupil participated in this study was asked to state out the number of pupils in their family. The collected data was presented in the figure 4.21.



**Figure 4.21** Distribution of pupils by family size

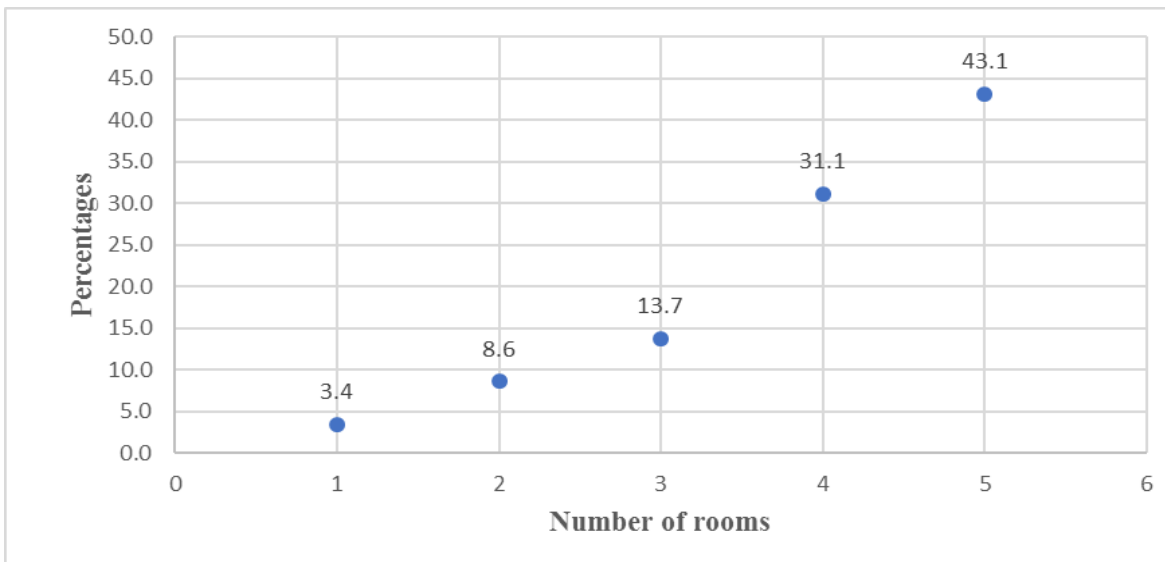
**Source:** Primary data, (2019)

Figure 4.21. shows that majority of pupils' families in Western Province of Rwanda are composed by five and more than five members. This was indicated by 78.90 percent of the participants. These findings were supported by the findings presented by NISR (2020), in the

report named demographic health survey (DHCR5) shows that there is an average of 5 people in the households in Rwanda.

ii. **Distribution of Pupils by the Size of the Family House**

There was a need to compare number of family members against number of rooms composed the family. To achieve this, pupils were asked to give number of rooms of the family house. The collected data are presented in the Figure 4.22.



**Figure 4.22** *Distribution of pupils by family house size*

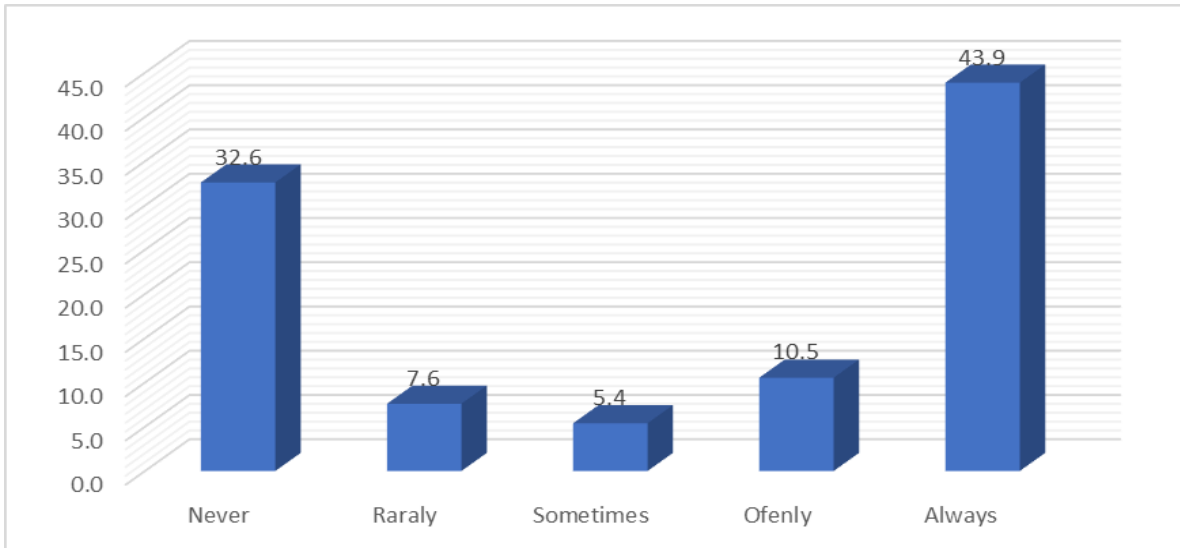
**Source:** Primary data, (2019)

Figure 4.22 shows that majority of the pupils' family house have five and more than five rooms. This was indicated by 43.10 percent and 31.10 percent whose family house have 4 rooms. This tells us that pupils' family house in Western Province are adequate enough, though there is a significant number of pupils (3.4%) who live in single room. And based on the findings presented by Harker (2007), and Ngetich (2015), nature and size of family house influence academic achievement of students.



iii. **Distribution of Pupils by Electricity Usage in the family**

Data showing the extent to which pupils use electricity in homebased learning was collected. After analysis collected data presented in the figure 4.23.



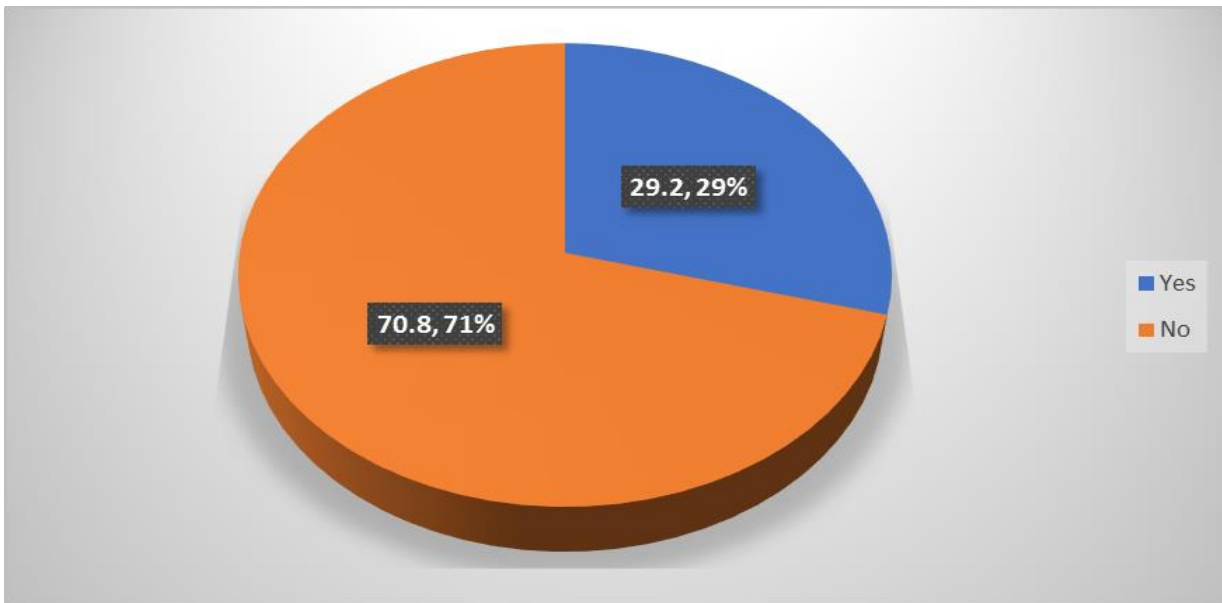
**Figure 4.23** *Distribution of pupils by electricity use*

**Source:** Primary data, (2019)

Figure 4.23 shows that majority of pupils in Western province of Rwanda use electricity in home base learning. This was indicated by 43.90 percent, though there a significant number of pupils who never use electricity in home learning. This was indicated by 32.6 percent. This was in line with the findings presented by national institute of statistics of Rwanda NISR (2014) where revealed that only 18 percent of households in Rwanda have access to electricity, 57 percent rely on lamps (40% use kerosene lamps, 10% use candles and 10% use firewood). It was also reported that in Rural regions where Western province located 82 percent of households use firewood. Furthermore, the responses from interviewees emphasized that the lack of power in the family affect academic achievement of students in Western province of Rwanda.

iv. **Distribution of Pupils by Access to Clean water**

Water is life and access to clean water is one of the biggest challenges facing learners in sub-Saharan Africa more specifically in rural areas (UNESCO,2014); (UNICEF,2013). There was a need to understand the rates pupils and their families in Western Province who have access clear water. The collected data was organized and presented in the figure 4.24.



**Figure 4.24** *Distribution of pupils by access to clean water*

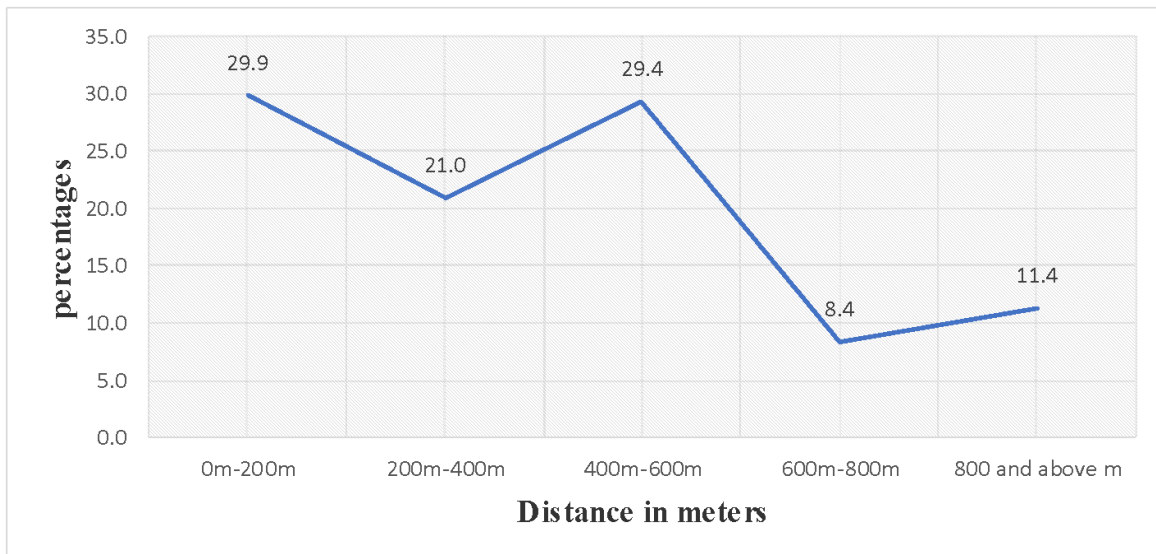
**Source:** Primary data, (2019)

The figure 4.24 shows that 71.00 percent of pupils’ families in Western Province of Rwanda do not have clean water in the households’ compound. This means that they fetch water outside the household compound. only 29 percent have clean water in the family compound. These findings were in line with the findings presented by NISR (2015) in the report known as Demographic health survey (DHSR4) revealed that 73 percent of private households in Rwanda have access to

clean water within which 37 percent collect water from protected springs and well; 28 percent got it from public taps outside the family compound.

**V. Distribution of Pupils by Distance used to get clean water**

In the figure 4.24 above shows that 71 percent of pupils’ families fetch clear water out side of the households’ compound. To this effect, there was a need to establish the distance used by family members in order to fetch clear water. The collected data was presented in the Figure 4.25.



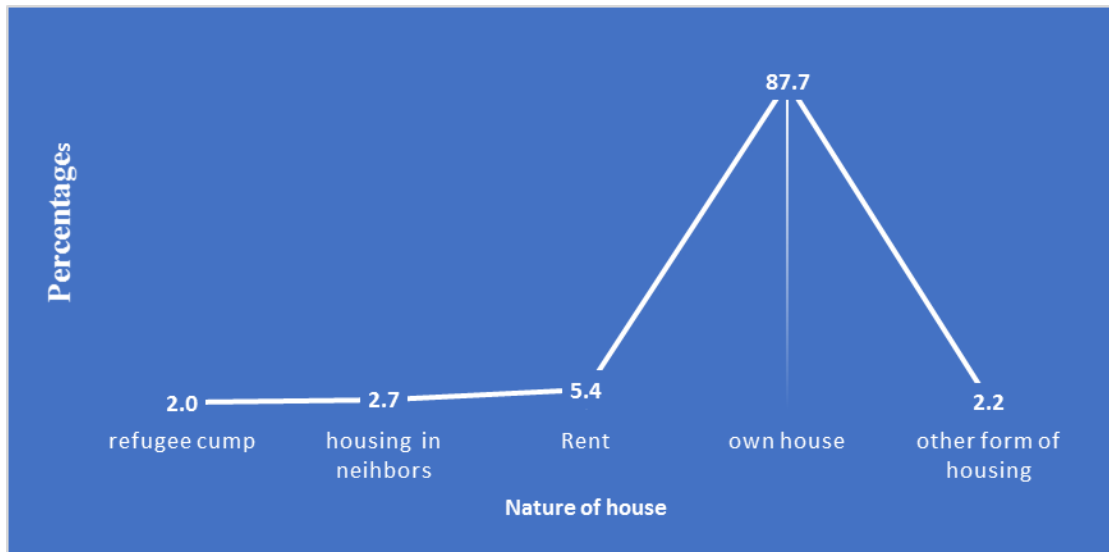
**Figure 4.25 Distance used by pupils’ families to get clean water**

**Source:** Primary data, (2019)

The figure 4.25 shows that majority of pupils’ families use less than 600 meters to fetch clear water for domestic use as indicated by 80.30 percent. This was supported by the government policy which was aimed to provide clean water to all citizens of Rwanda in Zero Kilometer by 2020 as presented in vision 2020 policy MINICOFIN (2003)

v. **Distribution of Pupils by Nature of Family House**

Basing on the recommendation given by Harker (2007) revealing the influence of students' homes on students' academic achievement in London There was a need to establish nature of pupils' family houses in Western province of Rwanda. The collected data was presented in the figure 4.26.



**Source:** Primary data (2019)

**Figure 4.26 Nature of pupils' family living house**

The figure 4.26 shows that majority of pupils' families in Western province of Rwanda live in their own houses as indicated by 87.70 percent of the respondents. It also shows that 5.4 percent live in rental houses, 2.7 percent do not have home, they are assisted by neighbors. This is due to the natural calamity such as strong winds, land slide and too much rain that cause some family to lose their houses. United nation higher commission for refugees UNHCH (2018) have revealed natural calamity as the main challenge hindering peace and stability of people in

Western province of Rwanda. These findings were also in line with the findings published by the national institute of statistics for Rwanda NISR (2014) which showed that 90% of households in Rwanda living in their own house and 9% were living in rental houses. Whereas Harker (2008) found that homeless and streets learners are likely to repeat and dropout schools due to the distribution caused by moving from one home to the other since they have no permanent residents.

#### **4.7.2 Teachers Responses Showing the Influence of Family Housing Conditions on Internal Efficiency in Primary Schools in Western Province of Rwanda**

Teachers were among the group of respondents in this study. Data from every teacher was collected through questionnaire. Teachers' questionnaires were organized in Likert scale format and they were asked to show the extent to which he/she agrees or disagrees with the statement showing the influence of family housing conditions on internal efficiency in primary schools in Western Province of Rwanda. Analysis and presentation were based on each statement. The collected data are presented in the table 4.30.

**Table 4.30: Teachers’ responses showing the influence of family housing conditions on internal efficiency in primary school in Western province of Rwanda**

STATEMENTS	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
Availability of electricity in the family house influence the completion rate of pupils in primary school in Western province Rwanda.	4	3.6	7	6.4	8	7.3	65	59.1	26	23.6
A pupil whose family lives in the own house is more likely to complete primary school on time than pupil whose family lives in temporary house.	1	0.9	5	4.5	5	4.5	65	59.1	34	30.9
Homeless and streets children cannot complete their studies on time	4	3.6	6	5.5	7	6.4	68	61.8	25	22.7
Pupils whose families use tradition source of light (e.g., Kerosene, firewood) are likely to face learning challenge and this can increase the rates of dropout and repetition.	2	1.8	11	10.0	8	7.3	69	62.7	20	18.2
Pupils who often use long distance to fetch water for domestic use on school day are likely to face learning challenges leading to delayed completion.	7	6.4	9	8.2	11	10.0	66	60.0	17	15.5
Homeless and streets pupils have no fixed place to live, they move from one place to another, and this influence internal inefficiency of their schools	3	2.7	10	9.1	6	5.5	57	51.8	34	30.9
<b>AVERAGE</b>	<b>4</b>	<b>2.3</b>	<b>8</b>	<b>7.4</b>	<b>8</b>	<b>6.4</b>	<b>65</b>	<b>59.1</b>	<b>26</b>	<b>23.8</b>

Table 4.30 shows teachers’ responses showing the influence of family housing conditions on internal efficiency in primary schools in Western province of Rwanda. Presentation followed provided statement as follow:

The first statement was “*availability of electricity in the family house influence the completion rate of pupils in public primary school in Western Province of Rwanda*”: The findings on this statement show that 4 (3.60%) strongly disagree; 7(6.40%) disagree; 8 (7.30%) were neutral; 65(59.10%) agree and 26(23.60%) strongly agree that availability of electricity in the family

house influence the completion rate of pupils in public primary schools in Western province of Rwanda.

The second statement was “*pupils whose families live in their own houses are more likely to complete primary school on time than pupils whose families live in the temporary houses*”. The findings on this statement show that 1(0.9%) strongly disagree 5 (4.5%) disagree 5 (4.50%) were neutral 65 (59.10%) agree, and 34 (30.90%) strongly agree that pupils whose families live in their own houses are more likely to complete primary school on time than pupils whose families live in the temporary houses.

The third statement was “*homeless and street children cannot complete school on time*”: The findings on this statement showed that 4 (3.60%) strongly disagree; 6(5.50%) disagree; 7 (6.40%) were neutral; 68 (61.80%) agree; 25 (22.70%) strongly agree that homeless and street children can’t complete primary school on time.

The fourth statement was “*pupils whose family use traditional source of light (e.g., Kerosene, firewood) are likely to face learning challenges and this can increase the rate of dropout and repetition*”. The findings on this statement showed that 2(1.80%) strongly disagree; 11(10.00%) disagree; 8 (7.30%) were neutral; 9 (62.70%) agree; and 20 (18.20%) strongly agree that pupils whose families use traditional source of light met learning challenges leading to repetition and dropout rates.

The fifth statement was “*pupils who often use long distance to fetch water for domestic use before reporting to school are likely to face learning challenges leading to delayed completion*” the findings on this statement show that 7 (6.40%) strongly disagree; 9 (8.20%) disagree; 11(10.00%) were neutral; 66 (60.00%) agree; 17 (15,50%) strongly agree that pupils who often use long

distance to fetch water for domestic use before reporting to school are likely to face learning challenges leading to delayed completion..

The sixth statement was “*homeless and street pupils have no fixed place to live, they move from one place to another, and this influence internal inefficiency of their schools*”: The findings on this statement show that 3(2.70%) strongly disagree; 10(9.10%) disagree; 6(5.50%) were neutral; 57 (51.80%) agree; and 34 (30.90%) strongly agree that homeless and street pupils have no fixed place to live, they move from one place to another, and this influence internal inefficiency of their schools.

By taking overage into account, the findings presented in the table 4.28 showed that 4(3.30%) strongly disagree; 8(6.40%) disagree; 8(6.40%) were neutral; 65(59.10%) agree and 26(23.80%) strongly agree that family housing condition influence internal efficiency of primary school in Western Province of Rwanda. These findings collaborated with the findings of the study carried out in Landon by Harker (2007) which confirmed that poor housing conditions affected the children’s ability to learn at school as well as home. She also noted that homeless pupils are two or three times more likely to be absent from school than other pupils due to the disruption caused by moving into and between temporary accommodations.

#### **4.7.3 The interview response showing the influence of family housing conditions on Internal efficiency of primary schools in Western Province of Rwanda**

Information that formed the basis for the conclusions on the influence of family housing conditions on internal efficiency in public primary schools in Western province Rwanda was not only collected from questionnaires distributed to pupils and teachers but also, from semi-structured interview guide directed to headteachers and District Directors of Education. Thematic



approach was used to analyze the collected data whereas textual model used to present the findings.

Interview guide was administered to twenty-eight head teachers and two district directors of education i.e., the sample of thirty (30) respondents were involved in answering of the interview questions. The questions asked were as follow:

*“What are the housing conditions of the private households in Western Province of Rwanda?”*

The majority of the answers given by interviewees revealed that private households in Western Province of Rwanda live in clustered rural settlements known as *Umudugudu* and some are scattered all over the slope of the mountain. Majority of the private households live in their own house. Those houses are mostly built-in sundried bricks, wood and mud walls. Iron sheets, and local tiles are the common materials used in making roofs. They revealed that glass roof houses have been completely eradicated at the end of 2012. They further showed that majority of private household get water outside the family compound especially in the public taps and protected springs and walls. Majority of the families use kerosene as the main source of light, firewood was the dominant source of heat and majority of pupils are involved in the collection of firewood.

*“To what extent do family housing conditions influence Internal efficiency of primary schools in your school or province?”*

Majority of interviewees (head teachers and districts directors of education) confirmed that family housing indicators (nature of family house, number of family members, family size, source of power used and distance used to get water source) influence internal efficiency of schools. This is due to the fact that basic education is received in the families. They also argued that homeless, streets children and children whose families live in refugee camps meet several

learning challenges which hinder their academic progression. In addition, they also commented that over aged students are more likely to repeat and dropout of schools. These findings were in line with the findings presented by Harker (2007), which concluded that poor housing affects children's ability to learn at school as well as at home because homeless children are two or three times more likely to be absent from schools due to the disruption caused by moving into and between temporary accommodations. Furthermore, the reviewed document showed that 90% of the family live in their own houses made of undried and iron sheets, 9% live in rental houses only 1% lives in the other forms of houses (homeless, refugee camp). It was also established that 73percent of households have access to clean water.

The available report such RPHC4 and DHS5 showed that electricity is used only at the rate of 18% at private households' levels. About 40% of learners use Kerosene lamp, 10% use candles and 8% of them use fire wood as the source of light while doing home revisions. MINEDUC claims that government should do all possible to improve electricity facility to the households in rural areas because the traditional source of light does not support academic progression of learners.

#### **4.7.4 Relationship Between Housing Conditions and Pupils' Performance in PLE in Western Province of Rwanda**

There was a need to understand pupils grade scores in PLE in Western Province of Rwanda in relation to housing conditions of their homes. To achieve this relevant data was collected, after analysis organized data was presented in the table 4.31.

**Table 4.31 Relationship between housing conditions pupils' performance in PLE in Western Province of Rwanda**

Variables	Indicators	Mean scores	Std. Deviation	Variance	N	Percentage (%)
Number of family members	Two members	51.18	4.686	21.964	11	2.70%
	Three members	51.17	6.115	37.398	26	6.40%
	Four members	52.17	7.174	51.467	39	9.60%
	Five and above members	50.33	6.619	43.823	321	78.90%
Number of rooms making family house	Single room	49.14	6.443	41.516	14	3.40%
	Double room	48.50	5.795	33.591	34	8.30%
	Triple room	49.42	4.909	24.104	56	13.70%
	Fourth room	51.03	6.561	43.059	127	31.10%
	Five and more rooms	51.14	7.083	50.181	177	43.40%
Source of power used	Traditional source	49.69	6.209	38.563	133	38.56%
	Electricity	52.023	6.976	48.677	179	48.68%
Having water in the compound	Yes	51.40	6.841	46.802	119	29.20%
	No	50.23	6.441	41.493	288	70.80%
Distance used to get to clean water	Lesser than 200 meters	52.19	6.863	47.110	121	29.90%
	Between 200 m- 400m	51.02	7.023	49.333	85	21.00%
	Between 400m- 600m	49.22	6.652	44.263	119	29.40%
	600m- 800m	50.47	4.666	21.772	34	8.40%
	800m and more	48.95	4.997	24.976	46	11.40%
Nature of house	Own houses	50.54	6.559	43.032	356	87.70%
	Rental houses	50.81	6.336	40.156	22	5.40 %
	Homeless pupils	50.18	7.386	54.564	11	2.70 %
	Living in the other forms of houses	50.25	6.363	40.50	8	2.00 %

The table 4.31 shows that majority of the pupils' family size in Western Province of Rwanda are composed by more than five people as indicated by 78.90 percent of the participants. it was also revealed that there is no mean difference in pupils scores based on household size. Family with few siblings may have access to more resources, children with many siblings have more people to provide social support. For example, there is a slight positive effect on math scores for children

from large families (Guo, 1999) perhaps because they are more likely to have siblings who recently studied the same math. Skousen (2004) also observed that children with many siblings have less pressure to fulfil all parental dreams and ambitions.

Based on the size of living household house: it was indicated that more than 70.00 percent of the pupils' households in Western province Rwanda, their houses have more than 4 rooms. About mean score, it was indicated that pupils whose family living house owned more than five rooms performed better than pupils living in single room houses. This was indicated by the mean of 51.14 percent and 49.14 percent for five room and single room houses respectively. This proves that size of pupils' households living house influence mean score of the pupils in PLE.

Based on extent to which pupils' households have access to power (electricity). The findings showed that pupils whose households have electricity performed better than pupils whose households used other source of power (Kerosene lamp, candles, firewood & charcoal) This was indicated by the mean score of 52.23 percent for electricity users and 49.69 percent for non-users.

Based on the distance covered to get water source. The findings show that pupils whose households access water in less than 200 meters recoded higher score in PLE than others. This was indicated by the mean score of 52.19 percent. It was also revealed that pupils whose households use more than 800 meters to get water source scored the lowest mean score of 48.95 percent. This tells us that access to water for the pupils' households influence completion rate of pupils in public primary schools in Western province Rwanda.

Basing on nature of pupils' household houses (rental, own house, homeless or camp), the findings revealed that there is no significant mean difference in pupils' mean scored in PLE based on the

nature of pupils' household houses. This was indicated by mean of 50.54 percent for pupils whose households live in their own houses and 50.81 percent for pupils whose households live in rental houses. It was also revealed that there is no mean difference for pupils who were homeless to pupils living in normal conditions as indicated by the mean score of 50.25 percent. This affirms that the nature of households did not influence pupils' academic completion rate in public primary schools in Western Province of Rwanda. These findings were against the findings presented by Harker (2007) discussed that housing conditions affected academic progressions of students in Landon.

#### **4.7.5 Hypothesis Tested showing the influence of housing conditions on internal efficiency in primary schools in Western province of Rwanda**

The regression analysis was computed to establish the influence of housing conditions on internal efficiency in primary schools in Western Province of Rwanda the computation was based on set hypothesis. There was a pair of mutual exclusive hypothesizes to test. Null hypothesis and alternative hypothesis. They are called mutual exclusive hypothesis because the acceptance of Null hypothesis rejects alternative hypothesis vis versa.

The null hypothesis (H<sub>0</sub>) tested was, *there is no significant influence of family housing conditions on internal efficiency in primary schools in Western Province of Rwanda*, whereas corresponding alternative hypothesis (H<sub>1</sub>) tested was, *there is a significant influence of family housing conditions on internal efficiency in primary schools in Western Province of Rwanda*. The decision rule was based on p-value approach. P-value approach said that if the levels of significant to hold the decision to either reject or uphold the null hypothesis was 5% or 0.05, which mean 95 percent degree of confidence level. Then, the probability obtained a sample mean

given the value stated in the null hypothesis was true stated as p-value. If p-value is less or 5% ( $P \leq 0.05$ ), the null hypothesis will be rejected and accept alternative hypothesis, whereas, if P-value is equal or greater than 5% ( $p = > 0.05$ ) null hypothesis will be accepted and reject alternative hypothesis. Hypothesis tested outputs were presented in the Table 4.32, and 33.

**Table 4.32 Model summary for linear regression**

Model Summary <sup>b</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df 1	df 2	Sig. F Change	Durbin Watson
1	.197 <sup>a</sup>	.039	.021	6.43634	.039	2.169	7	377	.036	1.762

a. Predictors: (Constant), family members, distance covered to get water, repeating times, nature of the house, how many rooms is your house, have water in the family house, extent to which your family use electricity

b. Dependent Variable: average marks scored by pupils in %

The table 4.32 shows that there is a low positive degree of relationship between family housing conditions and internal efficiency in primary school in Western Province of Rwanda. This was indicated by  $r = 0.197$ . The table also shows that housing condition can only explain 3.6 percent of internal efficiency in primary schools in Western Province of Rwanda as indicated by  $r^2$  of 0.036. This means 96.4 percent of internal efficiency are determined by other factors which are not housing conditions.

**Table 4.33 summary coefficient of housing conditions and pupils' performance in PLE.**

Model	Unstandardized Coefficients		Standardized Coefficients Beta	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Lower Bound	Upper Bound
1 (Constant)	52.425	3.012		17.408	.000	46.503	58.346
How many rooms is your house	.445	.324	.076	1.374	.170	-.192	1.081
Source of power used	.123	.207	.034	.595	.552	-.284	.530
Having water source in the households' compound	.512	.819	.035	.625	.532	-1.099	2.124
Distance moved by household members to get to the water source	-.698	.289	-.140	-2.419	.016	-1.266	-.131
Nature of households' houses	-.210	.566	-.019	-.371	.711	-1.322	.903
Pupils' household size	-.392	.363	-.055	-1.078	.282	-1.106	.323

*a. dependent variable: average marks scores of pupils in%*  
*\*P<.05*

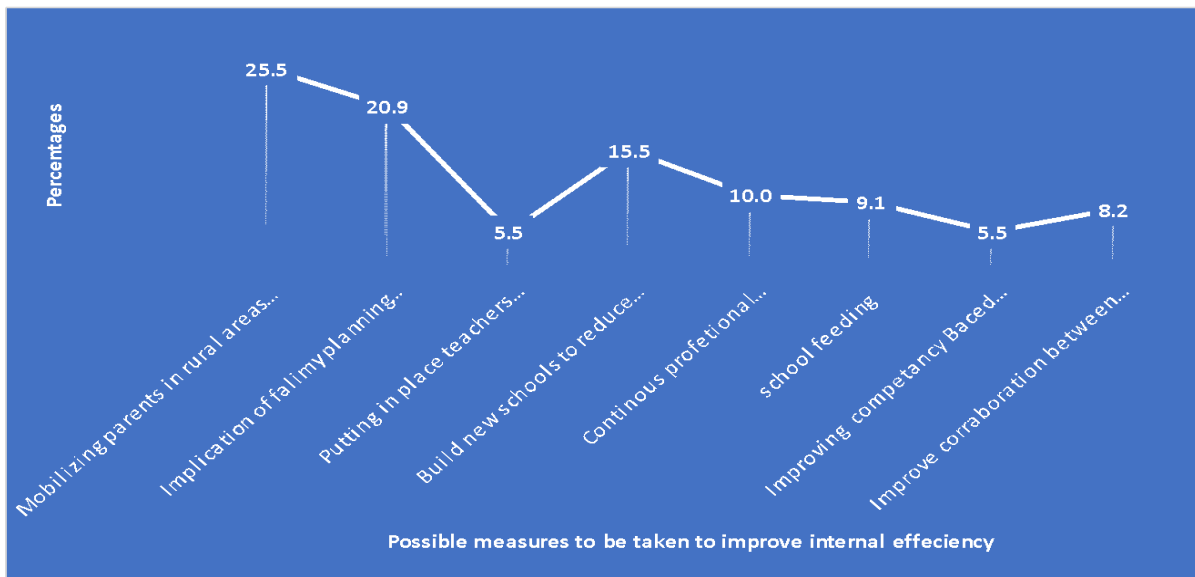
The table 4.33 shows that distance moved by pupils' family members in order to get to the source of water has significant influence on pupils' scores in PLE as indicated by -0.142, significant at .016.

Table 4.33 also shows that family housing indicators are significant as follow: number of rooms that make up a family house is sig .017>.05; source of power used is sig.595>.05; having water source in the household compound is sig .532; distance moved by households' members to get to the water source is sig .016< .05; nature of households' houses is sig .711> .05; pupils household size is sig .282> .05. Majority of computed indicators for the variables recorded critical values greater set significance level of .05. Based on the set rule, we therefore accept null hypothesis and reject alternative hypothesis, this means that there is no significance influence of

family housing conditions on pupils' academic completion rate in public primary schools in Western Province of Rwanda.

#### 4.8 Responses showing the measures that should be taken to improve internal efficiency in public primary schools in Western Province of Rwanda

There was a need to hear what educational stakeholders proposed to be the answers to internal inefficiency of schools in Western province of Rwanda. The proposed measures are presented in the figure 4.27.



*Figure 4.27 Responses showing measures that should be taken to improve internal efficiency in primary schools in Western province Rwanda*

Figure 4.27 shows that 25.50 percent suggested that parents in rural region should be mobilized to improve participation in schooling activities of their offspring. About 20.90 percent suggested that family planning programs should be more sensitized among adult people and this help to control high rate of students-teacher ratio in the schools. About 5.50 percent said that teachers are not motivated, so they suggested that governments should set measures to improve public



teachers' motivation in order to improve internal efficiency of schools. About 15.50 percent suggested that building new classrooms will help to reduce the issue of classroom to being overcrowded. About 10.00 percent suggested that schools should set up continuous professional development of teaching staff which will help to improve internal efficiency of schools.

School feeding program: About 9.10 percent said that many pupils failed to learn because of hunger. Therefore, the government and its partners should try hard and put in place school feeding programs in public primary school in order to improve internal efficiency of those schools.

Competency based curriculum (CBC): Over recently, the government of Rwanda have introduced CBC program to replace knowledge-based curriculum, however, teaching and learning aids of the new curriculum are not adequately available. So, 5.50 percent suggested that if CBC aids and materials are well provided to the schools, it will help to improve learners' motivation and leading to the improvement of internal efficiency of schools.

Last not the least was improving effective collaboration between parents, schools (staffs and leaders) and local government authorities as suggested by 8.20 percent of the respondents. This is true based on the fact that triparty collaboration facilitates the follow of information of pupils' movement between homes and schools and this will help to reduce dropout rate, reporting to school late, absenteeism and delinquency among leaners.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 Introduction**

This chapter gives a summary of the entire document highlighting the main findings, conclusions and recommendations and suggestions for further studies.

#### **5.1 Summary of the study**

The purpose of this study was to investigate the influence of family social economic parameters on internal efficiency of public primary schools in Western Province of Rwanda. The study was guided by four research objectives and four research hypotheses focused on parental occupations, parental income, parental educational levels and family housing conditions and their influences on internal efficiency of public primary schools. Literature review focused on the concept of educational efficiency educational wastage, the concept of educational enrollments, and the concept of family social economic parameters. This study was built based on education production function theory as initially proposed by Hanushek (1979), extensively developed by Pritchett and Filmer (1997), and revised by Hanushek (2007). This theory is based on systematic relationship between educational inputs and outputs. It also shows that educational outputs depend on the qualities of inputs and the constraints imposed by the underlying technical process. Mixed research design was employed because it combines both elements of quantitative and qualitative research approaches (for example, the use of quantitative and qualitative point of views) for the broad purposes of depth and sensitive understanding and collaboration. The study targeted all 96 public primary schools in Western province Rwanda. The pupils, teachers, headteachers and DDE were also targeted and all together made the target population of 9127 participants. The sample size was 527 respondents. To achieve this, the researcher was first

taking 30 percent of targeted schools. Solvin's formula for sample size determination, simple random sampling, systematic sampling technique and cluster sampling technique were also used in the sampling process. Questionnaires, semi-structured interview guide and documents analysis were used as the main tools for data collection. After data collection, the data was cleaned by identifying incomplete or inaccurate responses which were corrected to improve quality and relevance of the responses. After data cleaning, the data was coded and entered in the computer for analysis using SPSS version 22<sup>nd</sup> and STATA version 13<sup>th</sup> as well as Microsoft excel. Quantitative data was analyzed using descriptive statistics (mean, Std. Dev, variance, frequencies and percentages) and inferential statistics (ANOVA, T-test, Karl Pearson correlation and linear regression). Qualitative data was analyzed using thematic approach. Tables and figures were used to present quantitative findings and text model was used to present qualitative findings.

Throughout the data analysis, the study established that there were more girls in public primary schools than boys in Western province Rwanda as indicated by 60.00 percent girls and 40.00 percent boys. Majority of pupils age was between 12-14 years as indicated by 66.60 percent, 26.20 percent have more than 15 years and 5.40 percent have below 12 years. This means that education system allows enrollment of over-aged and under-aged pupils. Majority of pupils' families were in category three of *Ubudehe*. This was indicated by the rate of 53.00 percent, about 24.00 were in category two, 21.00 percent in category one, only 2.00 percent of the pupils' families were in category four.

The study also established that 51.80 percent of primary school teachers were females and 48.20 percent were males. About 77.30 percent were married, 20.90 percent were single and 1.80 percent were widowed. It was also founded that teaching staff in Western province Rwanda is of

mixed generations as indicated by 20.90 percent of teachers whose age were below 30 years, 55.50 percent their ages were between 30-35 years, and 25.40 percent had more than 40 years of age. About 45.00 percent have more 10 years of teaching experiences.

### **5.1.1 Summary Findings Showing the Influence of Parental Occupations on Internal efficiency of Primary Schools in Western Province of Rwanda**

It was established that 97.30 percent of pupils in public primary schools have parents or guardians, only 2.70 percent do not have parents. About 53.60 percent have never been involved in family activities on school days; 33.50 percent sometimes get involved in family activities on school day; 7.60% were often get involved in family activities on school days. It was also established that 56.10 percent of fathers and 73.10 percent of mothers were farmers. About 11.70 percent of fathers and 9.40 percent of mothers were public employees. About 5.90 percent of fathers and 0.70 percent of mothers were unemployed. About 46.90 percent have never failed to report to school because of household chores, 28.80 percent sometimes fail to report to school and 24.30 percent often fail to report to school on time because of household chores in the families.

It was established that majority of the pupils mean scores in PLE were in division three as indicated by 40.00 percent, 22.10 percent were in division two, 21.30 percent were in division four/ Surprisingly, 14.70 percent of the participants were unclassified and only 2.00 percent of them were in division one.

It was revealed that pupils who have never been involved in domestic chores on school days performed better than those who often involved as indicated by the mean score of 51.33 percent with Std.Dev of 7.046 against 49.33 Percent with Std.Dev of 6.350 for pupils who sometimes get

involved in domestic chores on school days. It was revealed that pupils whose parents are public workers performed significantly better than pupils whose parents were self-employed as indicated by the mean score of 54.02 percent with Std.Dev of 8.559 and 51.60 percent with Std.Dev of 5.880 for mothers and fathers respectively. Mothers' occupation showed a significant positive influence on academic performance of pupils in PLE than fathers' occupations as indicated by mean score of 54.02 percent for pupils whose mothers were public workers against 51.60 percent for the counterpart pupils whose fathers were also public workers. It was also established that, the state of being jobless to the parents showed negative influences on pupils' performance rate in PLE. This was indicated by mean score of 47.17 percent and 45.66 percent for both unemployment to fathers and mothers respectively.

The computed t-test shows that there is a strong degree of association between parental occupations pupils performance in PLE as indicated by  $0.00 < p(0.05)$ . about dropout and repetition rate, it was indicated that repetition rate is very high among pupils whose parents are jobless 28.88 percent whereas high rates of dropout was observed among pupils whose parents are fishers and farmers 33 percent and 34.55 percent respectively.

Findings from the teachers' responses established that 60.70 percent strongly agreed that parental occupations influence on internal efficiency of primary schools in Western province of Rwanda.

Through interview schedules, it was revealed that parental occupations determine the degree of parental involvements in the academic activities of their children, therefore parental occupations influence internal efficiency primary school in Western province Rwanda.

Through hypothesis testing, it was established that there statistically significant influence of parental occupations on internal efficiency in public primary schools in Western Province of Rwanda. As indicated by  $0.002; 0.007; 0.001 < p (0.05)$ .

### **5.1.2 Summary findings on the influence of parental income on internal efficiency in primary schools Western Province of Rwanda**

Basing on the analysis, it was established that majority of the pupils' families are in the category three of Ubudehe as indicated by 53.40 percent of the participants. It was also indicated that 44.80 percent of the household have inadequate family income. About 78.90 percent have never failed to report to school because of school fees. This was due to the fact that the system implemented free primary education policy. However, 21.10 percent argued that hidden cost of education is a barrier for them to attend schools.

It was also established that 27.60 percent of the pupils sometimes fail to report to school and 47.00 percent often failed to report to school due to the lack of school materials. It was established that 66.60 percent of pupils often reported to school without taking breakfast. About 68.40 percent have never had lunch. whereas 70.00 percent always take supper. About 86.00 percent of pupils' families do not have housemaid and only 14.00 percent of pupils' families have housemaid.

It was revealed that caring for siblings, looking after domestic cattle, collecting firewood, fetching water, washing clothes, preparing food for family members and household chores were the common activities performed by the pupils on school days and about 42.20 percent often failed to report to school because of households' chores.

It was also established that majority of repetitions and dropout rates were very high among pupils whose families are in category one of Ubudehe as indicated 41.75 percent, 36.9 percent repetition and dropout rate respectively. Through the teachers' findings, it was established that 78.80 percent agree, 5.60 percent were neutral and 20.40 percent disagree that parental income influence internal efficiency in public primary schools in Western Province of Rwanda.

It was also revealed that pupils whose parents are in the first category of Ubudehe have the lowest performance in PLE as indicated by a mean score of (49.47% with std. dev of 5.36). This means that they are likely to dropout the schools. Pupils who were often absent from schools scored very poor marks of 47.09 percent. It was also established that pupils who never take lunch recorded poor mean score of 48.94 percent. Through interview it was established that parental income was categorized into two groups: high income families and low-income families. It also established that the higher the family income is, the lower dropout rate is, the lower family income is, the higher dropout rate is. Through hypothesis tested it was established that there is low positive degree of relationship between parental income internal efficiency as indicated by  $r = 0.157$ . It was also revealed there is statistically significant influence of parental income on internal efficiency in public primary schools in Western Province as indicated by 0.002; 0.004; 0.004; 0.001; 0.002  $< P(0.05)$ .

### **5.1.3 Summary Findings on the Influence of Parental Educational Levels on Internal Efficiency in Public Primary Schools in Western Province of Rwanda**

It was established that majority of the parents in Western Province Rwanda have primary level of education as indicated by (45.90%; 44.80%) fathers and mothers respectively. About (21.60%) of mothers and (15.40%) of fathers are not educated. About (23.80%) of fathers and (20.40%) of

mothers have secondary level of education and about (9.30%; 6.90%) mothers and fathers respectively have University degree.

It was also established that majority of the parents in Western Province Rwanda speak only mother tongue (Kinyarwanda). This was indicated by the rates of (56.80% and 48.80%) mothers and father respectively. About (22.10%) of mothers and (23.90%) of fathers speak both Kinyarwanda and French. About (13.00%) of mothers and (14.50%) of fathers speak both Kinyarwanda and English. And about (6.60%) of mothers and (11.80%) of fathers were able to speak English, French and Kinyarwanda. Only 1.50 percent were able to speak additional languages such Kiswahili, Kirundi and Lingala.

It was established that majority of parents in Western Province of Rwanda do not help their children to do homework. This was indicated by (40.00% and 32.90%) of fathers and mothers respectively never help their children. About (17.70%) of fathers and (21.10%) of mothers rarely help their children. About (23.30%; 24.80%) of fathers and mothers respectively some time help their children to do homework. Only (16.70%; 21.10%) fathers and mothers respectively always help their children do homework given by the teachers at schools.

It was also established that (32.90%) of fathers and (37.70%) of mothers have never helped their children to read book (17.00%) of father and (15.70%) of mothers rarely help their children. About (30.70%) of fathers and (29.50%) of mothers sometime help their children to read books. Only (19.50% and 23.10%) of fathers and mothers respectively always help their children to read books.

It was revealed that majority of parents in Western Province do not follow up academic activities of their children as indicated by (53.60% & 45.70%) for both fathers and mothers respectively.



About (24.80% & 26.00%) fathers and mothers respectively sometimes follow up academic activities of their children. About (21.60% & 28.00%) of both fathers and mothers respectively follow up academic activities of their children at regular basis.

It was established within the teachers 4(3.60%) strongly disagree; 10 (9.60%) disagrees; 9(8.10%) were neutral; 60 (54.20%) agree, and 27(24.40%) strongly agree that education levels of the parents influence internal efficiency in public primary schools in Western Province Rwanda. It was also established that repetition and dropout rates was very high among pupils whose parents have primary level of educated as indicated by 44.83 percent and 59.02 percent respectively. From the interview schedules, it was established that children from non-educated households recoded higher rates of repetition than their counterpart's children from academic households of western Province Rwanda.

About mean score: It was established that pupils from non-educated parents recoded the lowest scores in PLE (48.86% and 50.00%) mothers and fathers respectively. Whereas pupils whose parents were educated performed significantly better (53.23% and 51.06%) for mothers and fathers who have university education respectively. It was also confirmed that mothers' education plays significant influence on pupils' academic achievement than fathers' education.

It was established that pupils whose parents are able to speak English as instructional language used at school recoded the highest mean scores in PLE than children whose parents speak only Kinyarwanda and French. This was indicated by (52.67%; 52.01%) fathers and mothers against 49.86 percent and 49.87 percent fathers and mothers respectively.

It was also revealed that pupils who have always helped by the parents when doing homework recoded the highest mean scores in PLE than their counterparts who have never been helped by

their parents This was indicated by 53.26percent 32.18 percent against 50.49 percent and 50.04percent for mothers and fathers' language respectively. About 49.80 percent of fathers and 47.40 percent of mothers have never helped their children to read books, only 8.40 percent of fathers and 9.60 percent of mother always helped their children to read books. About mean scores: It was revealed that pupils who received regular help from parents when reading books recoded the highest mean score in PLE as indicated by 53.53 percent and 51.02 percent for both mothers and fathers help in reading books respectively.

It was established that there is a low positive degree of relationship between parental educational levels and pupils' grade scores in PLE in primary school in Western province of Rwanda as indicated by  $r= 0.235$ . It was also indicated that an increase of parental education level increase 5.5 percent in of pupils scores in PLE. This was shown by r squares of 0.055.

It was established that mother's education significantly influences academic progression of pupils than other variables at 22.30 percent significant at .000. Furthermore, fathers' education was sig .175>p (0.05); fathers' language sig .526>p (0.05); mothers' language was sig .573>p (0.05); fathers' help in homework was sig .625>p (0.05); mothers' help in home work was sig.758>p (0.05); fathers' help to read was sig .516>p (0.05); mothers' help to read was sig .766>p (0.05), Based on the set rules there is strong evidence to accept null hypothesis. We therefore concluded that there is no statistically significant influence of parental educational levels on internal efficiency of in public primary school in Western province Rwanda.

#### **5.1.4 Summary Findings on the Influence of Family Housing Conditions on Internal Efficiency in Primary Schools in Western Province of Rwanda**

It was established that majority of family size in Western province Rwanda was made of five and more than five members as indicated by 78.90 percent of the participants. About 9.60 percent of pupil's household had four members.

It was also established that majority of the pupils' family houses have five rooms as indicated by 43.10 percent of the respondents. About 31.10 percent lived in standard house of four room, surprisingly 25.70 percent of pupils' family were living in the houses whose standard were lesser than three room.

It was established that 43.90 percent of pupils' households in Western Province use electricity as the main source of power. About 32.60 percent have never used electricity. i.e., they use traditional source of power such as firewood, charcoals, kerosene lump etc. About 71.00 percent of pupils' fetch water outside the households' compound. About 29.00 percent have clean water in the compound. About 29.90 percent of pupils' households get clean water in lesser than 200 meters. about 21.00 percent fetch it in between 200-400meters. About 29.40 percent fetch it in between 400-600meters and about 19.80 percent fetch water in more than 600 meters.

It was established that 87.70 percent of the pupils' households live in their own houses. About 5.40 percent live in the rental houses, 2.70 percent live with neighbors, and 2.00 percent live in refugee camp.

From teachers' findings it was established that 4 (3.30%) strongly disagreed; 8 (6.40%) disagreed; 8 (6.40%) were neutral; 65 (59.10%) agreed, and 26 (23.80%) strongly agreed that

family housing conditions influence internal efficiency of public primary school in Western Province Rwanda.

Findings from interview schedule confirmed that homeless, streets children and children whose families live in refugee camp recoded the lowest completion rate higher rates of dropout and repetition rates in Western province of Rwanda. About mean scores it was found that there is no mean difference in pupils scores based on member of the family. Based on the size of the family house, it was indicated that pupils whose house have more than five rooms recoded the higher scores in PLE than counterparts living in single room houses as indicated by the mean of 51.14 percent against 49.14 percent respectively.

It was established that pupils whose households use electricity are more likely to complete primary school on time than pupils whose households use other source of power as indicated by the mean score of 52.23 percent for electricity users and 49.69 percent for non-users. It was also established that pupils whose households use more than 800 meters to fetch water scored the lowest mean score of 48.95 percent. This influence academic completion rate of pupils in public primary schools in Western Province Rwanda.

It was also established that there is no significant mean difference in pupils' scores based on the nature household living houses, as indicated by the of mean 50.54 percent for pupils living in their own houses, 50.81 percent for pupils living in rental houses and 50.25 percent for homeless pupils.

From hypothesis testing it was established that there is a low positive degree of relationship between family housing conditions and pupils' grade scores in PLE in public primary school in Western Province as satisfied by  $r= 0.197$ . It was also established that the distance between

pupils' households and water source have significance influence grade scores in PLE as indicated by standard coefficient of -0.142, significant at .016.

It was also established that number of rooms that make a family house was  $\text{sig}.017 < P (0.05)$ ; source of power use was  $\text{sig}.595 > P (0.05)$ ; having water in the compound was  $\text{sig}.532 > P (0.05)$ ; distance between households and source of water was  $\text{sig}.016 < p (0.05)$ ; nature of family houses  $\text{sig}.711 > p (0.05)$ ; pupils household size was  $\text{sig}.282 > p (0.05)$ . Based on the set rule. We therefore conclude that there is no significant influence of family housing conditions on internal efficiency in public primary schools in Western province Rwanda.

## **5.2 Conclusion of the Study**

In view of the objectives and research hypothesis that were set, the discussion of the findings summarized in section 5.1 showed that some of indicators of family social economic parameters in Western Province Rwanda were not adequately available and this influenced internal efficiency of public primary schools in Western of province. However, the correlation coefficients of some variables did not significantly show influence on internal efficiency in public primary schools in Western Province of Rwanda. Therefore, the following conclusions were made:

### **5.2.1 Parental Occupations and Internal Efficiency**

Based on the fact that 56.10 percent of fathers and 73.10 percent of mothers were farmers.it was concluded that majority of parents in Western province are farmers. Based on the fact that pupils whose parents were public workers recoded the highest mean scores of the 54.02 percent for mothers' occupations and 51.60 percent for fathers' occupations, it was concluded that there is a strong degree of association between public occupations and pupils' academic performance in

PLE more than other parental occupations. In addition, it was also concluded that repetition rate is very high among pupils whose parents are jobless whereas dropout rate is very high among pupils whose parents are fishers and farmers.

Based on teachers' findings 60.70 percent who strongly agreed and based on the sample tested variables which was 0.002, 0.007 and 0.001 > p0.05. It was concluded that there is statistically significant influence of parental occupations on internal efficiency in primary schools in Western province Rwanda.

### **5.2.2 Parental Income and Internal efficiency in primary schools**

Based on the fact that 47.00 percent of pupils often failed to report to school due to the lack of school materials, about 66.60 percent always report to school without taking breakfast. About 68.40 percent have never taken lunch, it was concluded that majority of pupils' families have inadequate income. And that there is strong degree of association between parental incomes and pupils' performance in PLE and the low family income is the higher dropout and repetition rates will be.

Based on the fact that pupils whose parents were in the first category of Ubudehe scored the lowest mean score in PLE as indicated by 49.47 percent, also pupils who were often absent from schools due to the lack of school materials recoded the lowest mean score of 47.09 percent. Furthermore, based on the fact that pupils who have never taken lunch recoded the lowest mean score of 48.94 percent; it was concluded that parental income influence internal efficiency of primary schools in Western province of Rwanda. Based on the computed hypothesis out 0.002; 0.004, 0.004, 0.001, and 0.002 < p0.05. Referring to the set rule we therefore conclude that there

is a statistically significant influence of parental income on internal efficiency in primary schools in Western Province of Rwanda.

### **5.2.3 Parental Educational Levels and Internal Efficiency in Primary schools**

Based on the fact that 45.90 percent of fathers and 44.80 percent mothers have primary levels of education, it was concluded that majority of parents in Western province have primary level of education.

Based on the fact that 56.80 of mothers and 48.80 percent of fathers speak only mother tongue (Kinyarwanda), it was concluded that majority of parents in Western Province of Rwanda speak only mother tongue. It was also established that majority of parents in Western Province of Rwanda are not involved in schooling activities of their children. Based on the fact that (40.00% and 32.90%) of fathers and mothers respectively have never helped their children to do homework, that (32.90%) of fathers and (37.70%) of mothers have never helped their children to read books, that (53.60% & 45.70%) fathers and mothers respectively do not check academic activities of their children from there, we concluded that parents in Western province Rwanda are not adequately involved in academic activities of their children. Based on the findings from the teachers that 78.60 percent of teachers agreed, 8.10 percent were neutral and that only 13.30 percent who disagreed, it was concluded that parental education levels influence internal efficiency primary schools in Western province Rwanda.

Based on the evidence that pupils whose parents were not educated recoded the lowest mean, 48.86 percent against the highest mean score of 53.23 percent of pupils whose parents were highly educated, and that dropout and repetition rates were very high among pupils whose parents have only primary levels of education, it was concluded that parental educational levels influence

internal efficiency of primary schools in Western Province of Rwanda. However, based on the hypothesis output 0.175; 0.526; 0.573; 0.625; 0.758; 0.516; and 0.766  $>p0.05$ . referring to set rule, it was concluded that there is no statistically significant influence of parental educational levels on internal efficiency in primary school in Western Province of Rwanda.

#### **5.2.4 Family housing conditions and Internal Efficiency in Primary Schools**

Based on the fact that there is a significant number of pupils who use traditional source of power during homebased learning, it was concluded that lack of power is a big challenge on academic progression of pupils in Western province of Rwanda. Based on the fact that 59.10 percent of teachers strongly agree that housing conditions influence internal efficiency, that interviewees confirmed that homeless, streets children and children whose families live in refugee camp recorded the lowest completion rate higher rates of dropout and repetition rates. Furthermore, based on the fact pupils who often use electricity performed better in PLE; that pupil whose family use more than 800 meter to fetch water recorded the lowest mean scores in PLE, we concluded that family housing conditions influence internal efficiency in primary schools in Western province of Rwanda. Though the computed hypothesis that family house was sig.017<P (0.05); source of power use was sig.595>P (0.05); having water in the compound was sig.532>P (0.05); distance between households and source of water was sig.016<p (0.05); nature of family houses sig.711>p (0.05); pupils household size was sig.282>p (0.05). Based on the set rule. We therefore concluded that there is no statistically significant influence of family housing conditions on internal efficiency in primary schools in Western province of Rwanda. Though housing conditions can only explain 5.50 percent on internal efficiency in primary schools in Western province of Rwanda.



### 5.3 Policy Recommendations

Based on the nature and the findings of this study, the following policy recommendations were suggested.

- Education policy should be decentralized, and have education planners at district level. The local policy makers should be allowed to introduce specific extra-Curricular programs depend on physical features and the weather of the region. For example, schools located near wide water body such as Kivu Lake, should be equipped with specific materials and qualified teachers at water- based games and sports. Pupils whose schools are located closer to the national parks should be equipped with specific skills helping them to identify viable opportunities associated with the place.
- Through the findings, we found that majority of parents in Western Province of Rwanda have never attended formal schools, and that the performance in PLE of pupils whose parents have never completed any levels of education is lesser than pupils whose parents have attended formal education, the government of Rwanda is recommended to extend support in education by strengthening adult’s literacy programs to uneducated parents as well as to all illiterate people in the country.
- The findings also realized that there is a high pupils-teacher ratio and overcrowded classrooms This means that there is high birth rate in the province, therefore, the government and its partners are recommended to improve community mobilization about family planning programs (FPP).
- Throughout the analysis, it was also established that pupils who have never take lunch recoded very poor marks scores in PLE. Therefore, the government is recommended to introduce school feeding programs in public primary schools.

- Last not the least, it was established that mothers' education and mothers' occupations significantly influence academic performance of pupils in PLE, therefore girls' education, should be encouraged and give more opportunities.

#### **5.4 Suggestions for Further Studies**

The findings of this study are not exhaustive to improve internal efficiency of educational system in Rwanda. The following recommendations were made further studies.

- a) This study focused on the influence of family social economic parameter on internal efficiency of primary schools in Western Province Rwanda. Since educational system of Rwanda is not only made of primary section but also pre- primary, secondary and tertiary levels of education, similar studies should be done in pre-primary and secondary level of education, even in tertiary levels of education to investigate the influence of family social economic parameters on internal efficiency of the aforementioned levels of education in Western Province of Rwanda.
- b) This study focused on the influence of family social economic parameters on internal efficiency of primary schools in Western Province of Rwanda, a similar study should do in private primary schools in Western Province of Rwanda to establish whether family social economic parameters have the same impacts on internal efficiency in private primary schools.
- c) This study limited itself in Western Province of Rwanda, a national wide study should be carried out to investigate the influence of family social economic parameters on internal efficiency of educational system in Rwanda.

- d) A similar study should be carried out in many countries with different educational system to establish the influence of family social economic parameters on internal efficiency of primary schools.

## REFERENCES

- Abdulkadir, M.D., Mohamed, O.M & Abdullahi, A. M. (2016). *Social-economic status and Academic achievement at secondary school: Mogadishu- Somalia*.
- Abdulrahim, B.O. (2015). Parents' social economic status as predictor of secondary school students' academic performance in Ekiti state, Nigeria. *Journal of education and practices: 6(1),2015*.
- Agirdag, O. & Vanlaar, G. (2018). Does more exposure to the Language of instruction lead to higher academic achievement: A cross- national examination? *International Journal of Bilingualism, 22(1), 123-137*.
- Allen, M.J. & Yen, M.W. (2002). *Introduction to measurement theory*. Long Grove IL; Waveland press.
- Aryl, D.; Jacob, L. C. & Razaviech, A. (2002). *Introduction to research in education. 6<sup>th</sup> Ed*. Belmont, CA: Woodsworth.
- Asikhia, O.A. (2010). Students and teachers' perception of the causes of poor academic performance in Ogun State secondary schools, Nigeria: Implications for Counselling for National Development, *European Journal of Social Sciences,13(2), 229-249*.
- Asiru, T.A. (2014). Primary education and national development in Nigeria, *International Journal of Special and General Education, 3(1),155-165*.
- Bandula, A. (1989). *Social cognitive theory: Theories of child development*, pp1-60, Greenwich, CT: JAI press. California, USA.
- Becker, F & Lewis, N. (1964). *Human Capital: A theoretical and empirical analysis with special reference to education* second edition: NBER. New York, USA.
- Benimana, M. & Theogene, H. (2016). *Influence of mothers' language on pupil's academic achievement: A case study of private primary schools in Gasabo district Kigali Rwanda*. Non published dissertation submitted to the University of Rwanda college of Education.

- Bowls, S. (1969). *Educational production function final report on the research supported by United State of America Education office.*
- Braverman, P.; Dever, M.; Egerter, S.; Sadegh-Nabiri, T. & Pollack, C. (2011). *How does housing affect health?* Robert- Wood Johnson Foundation. Retrieved on <http://www.research/2011/05/housing-and-health.html>.
- Brink, P. J & Wood, M. J. (1998). *Advanced design in nursing research.* (2ndEd). Thousand Oaks, CA: sage publication.
- Chakravarty, S.N. (2011). *Measurement of reliability as per definition IN: Proceeding of the conference on psychological measurements: Strategies for new millennium:* New Delhi. India Gandhi National Open University.
- Chen, Q. (2009). *Family background, ability and students' achievement in Rural China-* Identifying the effects of unobservable ability using feminine-generated instruments. Retrieved on 22/03/2019 at [http://repository.upenn.edu/gansu\\_papers](http://repository.upenn.edu/gansu_papers).
- Cherian, V. I. (2010). *The relationship between parental income and academic achievement of Xhosa children:* The Journal of social psychology, 131(6), 889-891.
- Cohen, R.J. & Swerdilik, M.E. (2010). *Psychological testing and assessment; An introduction to test and measurements 7<sup>th</sup> Ed.* New York: McGraw-Hill.
- Dagoba, M. (2014). Role of education in socio-economic development: *International journal of educational research:* v7 (3),1-15.
- Danesty & Okediran. (2012). The influence of social and economic disadvantages on students' academic achievement in senior secondary school physics: *International journal of educational research and Technology.* 3(2),3-10.
- Davis, R.V. (1987). Scale construction. *Journal of counselling psychology:* vol34(481-489).
- De Guzman, M., & Gallardo. (2017). Challenges in teaching lessons in public secondary schools' zone 2 Division of Zambales. Philippines: *International journal of educational research and technology.* 8(2),43-52.

- Doherty, W. J., Boss, P. G., LaRossa, R., Schumm, W. R., & Steinmetz, S. K. (1993). *Family theories and methods: A contextual approach*. New York: Plenum Press.
- Emeka, M. (2012), *Macro-economic impacts of trade on Nigerian Growth: Empirical evaluation*: University of Logos, Nigeria.
- Fannie, R & Mueller, R. E. (2008). *The Effects of Family Income, Parental Education and Other Background Factors on Access to Post-Secondary Education in Canada: Evidence from the YITS*. A MESA Project Research Paper, Toronto, ON: Educational Policy Institute.
- Farooq, M.S., Chaudhry, A.H., Shafiq, M & Berhane, G. (2011). Factors affecting Students' quality of academic performance: A case of secondary school level: *Journal of Quality and technology management*. 8 (2), pp1-14.
- Gianna, C & Giannulli, F. (2018). *Parental occupation and children's school outcomes in Math*. University of Florence and IZA.
- Government of Kenya. (2005). *Directorate of personnel management booklet*.
- Guo, G. & VanWey, L. (1999). Sibship size and intellectual development: Is the
- Hanover research, (2015). *The impacts of poverty on students' outcomes*. Retrieved on [http://www. Hanover research.com](http://www.hanoverresearch.com) on 25<sup>th</sup> March, 2020.
- Hanover, R. (2015). *The impacts of poverty on students' outcomes*. Cambridge press. MA: Ballings; Boston.
- Harker, L. (2007). Impacts of housing on children's life chances: *Journal of children's services*, 2(3), 43-51.
- Haynes, P., Gill, M & Uworwabeyeho, A. (2018). *Rwanda Educational Multi-covariates Study: An analysis of Province, School, and Student Level Data*. Woodstock, GA: Crimson Foundation.
- Hill, N.E & Tyson, D. F. (2009). Parental environment in middle school: A meta- analysis assessment of the strategies that promote achievement. *Developmental psychology*, 45 (3),740-763.

- Hill, N.E & Taylor, D. F. (2016). Parental involvement in middle school: A metta analytic assessment of strategies that promote achievement. *sage Journal of Developmental Psychological*, 45(3), 740-763.
- Ibrahim, A. (2012). *Social economic, Social cultural and school -based factors that are affecting the performance in KCSE in ISILO County*. Kenyatta university. *International journals in management and social sciences*. Vol 4(1), p (1784-231).
- Johnson & Christensen. (2014). *Educational research: Quantitative, Qualitative, and Mixed approaches*. SAGE publishers. Inc.
- Jurugu, D.A. (2015). The influence of parental education and literacy skills level on children's achievement in primary school, Moya, District, rural Uganda: *Trinity College Dublin. School of education. Education. 2015*.
- Kabuga, P.C. (2014). *Evolution of inequality in access to secondary schools in Uganda*. Paris University Press: Paris, France.
- Kaplan, R.M. & Saccuzzo, D.P. (2001). *Psychological testing: Principals, application and issues*. 5<sup>th</sup> Ed. Belmont, CA: Wadsworth.
- Kerlinger, F. N. (1979). *Behavioral research: A conceptual approach*. New York: Holt, Rinehart, & Winston.
- Koang yang. (2014). Factors affecting internal efficiency of primary schools in NUER Zone of Gambella regional state. A thesis presented at Juma University.
- Kussainov, A. K., Boulatboyeva, A. A & Shaumen, G.S. (2014). Family situation as factor of the academic progress of students: *International Journal of Humanities and social science*. V4(14),121- 129.
- Lackamp, J.W. (2016). The case study of Results at primary school leaving examinations in rural district in Rwanda. *International Journal of learning, Teaching and Education research*, 15(9), 99 – 117.

- Levin, H. (1976). *The concept of economic efficiency and educational production*. In J. Froomkin, D. Jamison and R Rdner, eds., *Education as an Industry*. Cambridge, MA: Ballings.
- Levin, H., Glass, G., & Meister, G. (1984). *Cost- effectiveness of four interventions*. Institute for research on Educational finance and Governance, Stanford, California.
- Lockheed, M. & Hanushek, E. (1994). *The concept of educational efficiency and effectiveness: Human resources development and operations policy: HRO working papers*.
- Machebe, C.H., Ezedge, B.N & Onuaha, J. (2017). The Impact of Parental Level of Income on Students' Academic Performance in High School in Japan: *Universal Journal of Educational Research*. 5(9),1614-1620.
- Mamet, I & Mudassar, N. (2017). Influence of parental education on academic performance of secondary school studies in Terengganu: *International Journal of academic research in business and social science*. 7(8), 2017.
- Martina, H.z., Jandaghi, G., Khanifari, H & Heidari, F. (2009). Designing a competent organizational culture model for customers-oriented companies: *African Journal of Business management*, 2 (7),281-293.
- Mil, A. (2018). *Implication of Dr. Brown's family System theory to fix Broken families*. Retrieved on [https:// www. commons.wikimedia.org](https://www.commonswikimedia.org).
- MINEDUC. (2015-2018). *Statistical yearbook*: Kigali. MINEDUC.
- MINEDUC. (2019). Provisional national examination 2019 candidate list: Kigali. MINEDUC.
- MINICOFIN. (2013). *Economic development and poverty reduction strategies. EDPRSII 2013-2018*, Kigali-Rwanda.
- Mudassir, I.U & Norsuhaily, B.A. (2015). The impacts of parental occupation on Academic performance of Secondary School Students in Kuala Terengganu: *Multilingual Academic journal of Education and Social sciences*, 3(1),112-120.



Mugenda & Mugenda. (2003). *Research Method: Quantitative, Qualitative, and Mixed method approaches*. Nairobi: African Centre for technology studies.

Mutegi, R.G., Wanjala, G., & Kinyanjui, M. (2015). *Influence of Unit cost of education on student enrollment rates in Public secondary schools in Tharaka South Subcounty Kenya*. PhD thesis submitted at University of Nairobi: Nairobi, Kenya.

Nassehinia, H & Ahrari, F. (2016). Determination of peroxide value of oil used in confectioneries of Damghan, Iran in spring: *Journal of health research in the community*, 1(4), 64-69.

Ngetich, H.E. (2015). *Perceived effects of family factors influencing pupils' Academic performance in public primary schools in soy Division, Eldoret west district: Moi university*.

NISR. (2014). *Ministry of Finance and Economic planning of Rwanda: Rwanda fourth population and housing Census*. Kigali, Rwanda.

Ntawiha, P., Otieno, M., & Libese, L. (2016). *Educational Inputs and their Implications for output in public secondary schools in Nyamasheke and Nyarugenge District, Rwanda*. PhD thesis submitted at Kenyatta University. Nairobi Kenya.

Ntitika, J. L. (2014). *Parental characteristics influencing students' academic performance in public secondary in ISINYA District-Kenya*. Thesis submitted at UoN.

Nunally, J. (1978). *Psychometric theory*. New York: McGraw-Hill Companies.

Olaniyan, D. A & Okemakinde, T. (2008). Human Capital theory: Implication in Educational Development. *Pakistan Journal of social sciences*, 5(1), 479-483.

Oso, W.Y & Onen, D. (2009). *A General guide to writing research proposal and report*. Nairobi. The Jomo Kenyatta Foundation.

relationship causal? *American Sociological Review*, 64 (2), 169-187.

- Rulinda, L., Elizabeth, R & Makewa, N. (2014). School climate and academic performance in higher and lower Seventh church private secondary schools in Southern province- Rwanda: *International journal of educational research*, 3(1), 82-92.
- Schultz, T.W. (1963), *The Economic value of Education* (New York: Colombia University Press).
- Siri, T. A. (2014). Primary education and National development in Nigeria: *International Journal of special and general education*, 9(3), 155-165.
- Skousen, J. (2004). In praise of large families. *Liberty*, 18 (3), 31-34.
- Sukhendra, L. C. (1967). Parental occupation and Academic achievement of higher students in India: *The journal of educational Research*, 60(8), 359-362.
- Terenzini, F & Reason, G. (2008). *Impacts of campus climate on queer- spectrum student academic success*. Retrieved at <https://www.researchgate.net> on 20/04/2019.
- Theogene, H & Hesborn, O.A. (2018). Relationship between parental occupations and student discipline in private secondary schools in Rwanda. The case study of Gasabo district. *Journal of Education*, 2 (4), 47-73.
- Tuyisenge, S. (2015). *Determinates of parental involvement in their pre-school children's education in Gasabo District, Kigali City-Rwanda*. A thesis submitted to Kenyatta university.
- Udida, L.A. Ukway, J.K & Ogodo, F.A. (2012). *Parental socio-economic background as a determinant of academic performance*.
- UNESCO. (2014). *EFA Global Monitoring Report: Reaching the Marginalized Oxford*: Oxford University Press, UK.
- UNICEF. (2011). *Achieve universal primary education* retrieved at <http://www.upe.goals> on 29/06/2019.
- UNICEF. (2013). *Child friendly education school assessment study*. Kigali: UNICEF.

- Ushie, M., Emeka, J & Owolabi, E. (2012). Influence of family on students' academic performance in agape local Government area, logos state, Nigeria: *European Journal of educational studies*, 4, 2.
- Victory, M. (2016). *Making a decent work a reality in Tanzania*. International labor organization, Arusha, Tanzania.
- Wamichwe, J.M. (2015), *Social economic factors affecting enrolment of male's students in public secondary school in Kirinyaga County, Kenya*. University of Nairobi.
- Webbin. M.; Shavelson, R.J. & Haertel. E.H. (2006). *Reliability coefficient and generalizability theory*. *Handbook of statistics*. 26., Iss: 0169-761.
- Yamane, J. (1967), *simplified formula to calculate sample size*. Research gate.net.
- York, Gibson & Rankin, (2015). *Revised conceptual model of academic performance*. Retrieved at <https://www.researchgate.net> on 20/04/2019.
- Yusuf, N & Al-Banawi, N. (2013). The impact of changing technology: the case of e-learning. *International Journal of Contemporary Issues in Education Research*, 6(2), 173-180.
- Zotorvie, J.S.T. (2017). Students' accommodation and academic performance: case of Ho. Technical University of Ghana. *European scientific journal*, 13(13),2017.

# **APPENDICES**

## APPENDIX I: INTRODUCTION LETTER

University of Nairobi  
School of Education  
Educational Admin & Planning  
E-mail: [theosjunior@gmail.com](mailto:theosjunior@gmail.com)  
Tel: +250788449615/+254779247902

Dear Respondents,

### **RE: Introductory letter**

I am, HASHAKIMANA Theogene a PhD candidate at University of Nairobi, Kenya Department of Educational Administration and planning. I'm working on the Research Project entitled "the influence of family socio-economic parameters on internal efficiency in primary schools in western province, Rwanda." The purpose of this study is to investigate the extent to which parental occupations, parental education levels, parental income and family environments influence internal efficiency in primary schools in Western Province of Rwanda.

Answering the following research questions, honestly and passionately will be taken as great input to this study and I assure you the confidentiality of given data will be only used for research purpose.

For any queries or concerns, don't hesitate to contact researcher on either phone or e-mail written in address.

Your cooperation and time are highly appreciated.

Signature:

Names: HASHAKIMANA Theogene

**APPENDIX II: QUESTIONNAIRE FOR PUPILS**

**SECTION A: BACKGROUND INFORMATION**

**Question One:** Pupils Index Number

.....

**Question Two:** Gender of the pupils

Q11: Male

Q12: Female

**Question Three:** Class of the pupils

Q31: p6

Q32: others

**Question Four:** Age group of the pupils

Q41: Bellow 12 Years

Q42: 12-14 Years of age

Q43:14- 16 Years of age

Q44: Above 16 Years

**SECTION B: Party I;** Investigating the influence of family socio-economic parameters on internal efficiency of public primary schools in Western Province Rwanda by circling the right answer on each question.

**Question Five:** Pupil’s grade score at PLE

Q51: Division I

Q52: Division II

Q53: Division III

Q54: Division IV

**Question Six:** Parents or guardian

Q61: Both father and mother ( )    Q62: Father only    Q63: Mother only    Q64: No parents

Q65: No parents by have guardian

**Question seven:** Father’s occupation

Q70: Jobless; Q71: Farmer;    Q72: Fisher;    Q73: Public work; Q74: NGO work; Q75: Businessman; Q76: Driving;    Q77: Others specify .....

**Question eight:** Mother’s education

Q80: Jobless;    Q81: Farmer;    Q82: Fisher;    Q83: Public work; Q84: NGO work;    Q85: Businesswoman ; Q86: Driving ;    Q87: Others specify .....

**Question nine:** Socio-economic category of pupil’s family

Q81: Category I; Q82: Category II; Q83: Category III; Q84: Category IV

**Question ten:** Your family has housemaid to assist in domestic chores?

Q101: Yes,

Q102: No

**Question eleven:** The highest education level of your father

Q111: Not educated; Q112: Primary level; Q113: Secondary level; Q114: University level;

Q115 Technical and vocational education; Q116 Others specify .....

**Question Twelve:** The highest education level of your mother

Q121: Not educated; Q122: Primary level; Q123: Secondary level; Q124: University level

Q125 Technical and vocational education; Q126 Others specify .....

**Question thirteen:** What are the languages mostly spoken by your father?

Q131: Kiny only

Q132: Kiny and French

Q133: Kiny and English

Q134: Kiny and Swahili

Q135: Kiny, French & Swahili

Q136: Kiny, English & Swahili

Q137: Kiny, French, English & Swahili Q138: Kiny and other languages, state them.....

**Question fourteen:** What is highest education level of your mother?

Q141: Kiny only

Q142: Kiny & French

Q143: Kiny and English

Q144: Kiny & Swahili

Q145: Kiny, French & Swahili

Q146: Kiny &, English & Swahili

Q147: Kiny, French, English & Swahili Q148: Kiny and other languages, state them.....

**Question fifteen:** How many family members are there in your family?

Q151: One person Q152: Two people Q153: Three people

Q154: Four people Q156: Six and above six people

**Question sixteen:** How many rooms is your family house?

Q161: Single room; Q162: Double rooms; Q163: Triple rooms

Q164: Four rooms; Q165: Five rooms; Q166: Six and more than six rooms

**Question seventeen:** Your family house has water?

Q171: Yes

Q172: No

**Question eighteen:** If the answer in question 17 above is no, then how long do you travel to get on water

Q181: 0 m – 200 m; Q182: 200m – 400 m; Q183: 400m – 600m

Q184: 600m – 800 m; Q185: 800m – 1000 m(1Km) Q186: more than 1000 m (1Km)

**Question Nineteen:** Where you live?

Q191: Own house; Q192: Rental house; Q193: Refugee camp;

Q194: No house, live with neighbors; Q195: No house, street child

**Question Twenty:** How many times have you repeated in the class from primary one (P1) up to primary six (P6)?

Q201: None; Q202: One times; Q203: Two times

Q204: Three times Q205: Four times Q206: Five and more than five times

**SECTION B: Party II;** Investigating the influence of family socio-economic parameters on internal efficiency in primary schools by ticking in the box provided to match the statement and level of acceptance where: 1= Never 2 =Rarely, 3 = Sometimes, 4 = Frequently, 5 = Always

No	Statements	1	2	3	4	5
A	How often do you help your parents in their activities? 1=Never, 2 = Rarely, 3 = Sometimes, 4= Frequently, 5= Every time					
B	How often do you miss father’s help in school related activities at home because of his occupation? 1. Never, 2. Rarely, 3. Sometimes, 4. Frequently, 5. Every time					
C	How often do you miss mother’s help in school related activities at home because of her occupation? 1=Never, 2= Rarely, 3= Sometimes, 4= Frequently, 5= Every time					
D	To what extent you help your parents in farming activities during week day?					



	1= Never, 2= Rarely, 3=Sometimes, 4 = Frequently, 5 = Every time					
E	To what extent do you get late to report to school because of household chores 1= Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time					
F	To what extent do you miss school due to the lack of school fees? 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time					
G	To what extent do you miss school due to the lack of school materials 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time					
H	To what extent do you take care for your siblings? 1= Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time					
I	How often do you look after family cattle on school days? 1= Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time.					
J	How often do you collect fire wood for domestic use during school hours? 1= Never, 2 = Rarely, 3= Sometimes, 4 = Frequently, 5 = Every time					
K	How often do you report to school without eating? 1= Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time					
L	To what extent do your father help you to do home-based revision? 1= Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time.					
M	To what extent do your mother help you to do home-based revision? 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time.					
N	To what extent do your father help you to read books? 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time.					
O	To what extent do your mother help you to read book? 1= Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time.					
P	How often do your parents report to school when you have school problems? 1= Never, 2 = Rarely, 3= Sometimes, 4 = Frequently, 5 = Every time					

Q	To what extent do your father check the homework given at school? 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time					
R	To what extent do your mother check the homework given at school? 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time					
S	How often does your family use electricity? 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time					
T	How often do you fetch water for domestic use on school hours? 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Every time					

**Thank you for your kind participation**

**God bless you!!**

**APPENDIX III: STUDENTS' QUESTIONNAIRE TRANSLATED IN**

**KINYARWANDA**

**IGICE CYAMBERE: IMYIRONDORO**

1. Numero iranga umunyeshuri: .....
2. Igitsina Gabo  Gore
3. Umwaka w' amashuri wigamo: .....
4. Ufite Imyaka ingahe?  
 hagati 9 -11  hagati 15 - 17   
 hagati 12 - 14  hejuru y  ≥18
5. Akarere wigamo: Nyamasheke  Karongi

**IGICE CYA KABIRI: IBIBAZO KU MURYANGO NURUHARE UGIRA MUGUTEZA  
IMBERE UBUREZI MU NTARA Y' IBURENGREZUBA MU RWANDA.**

Garagaza uruhare umuryango ugira muguteza imbere uburezi mu Rwanda ushira akamenyetso ka vi(v) muni y'umubare ukwiriye: 1= bivuga nta na rimwe 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose.

N o	IBIBAZO	1	2	3	4	5
6						
A	Ufite ababyeyi / abakurera? Yego <input type="checkbox"/> Oya <input type="checkbox"/> Niba ubafite, nikuruhe rugero ubafasha gukora imirimo ku minsi y' ishuri? 1= nta na rimwe 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose.					
B	Umubyeyi wawe umugabo (Papa) akora iki?.....					
C	Umubyeyi wawe w'umugore (mama) akora iki?.....					

D	Nikuruhe rugero ufasha ababyeyi bawe gukora imirimo y' ubuhinzi ku minsi y'ishuri: 1= nta na rimwe, 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose.					
E	Ujya ucyererwa kugera ku ishuri kubera imirimo yo mu rugo Yego <input type="checkbox"/> oya <input type="checkbox"/> Niba ari yego ni kuruhe rugero: 1= nta na rimwe, 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose					
<b>7</b>						
A	Umuryango wawe uba mu cyihe cyiciro cy'ubudehe? 1. icyiciro I, 2. icyiciro II, 3. icyiciro III, icyiciro 4, IV					
B	Ni kuruhe rugero usiba ishuri kuko wabuze amafaranga y' ishuri? 1= nta na rimwe 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose					
C	Ni kuruhe rugero ufata amafunguro ya mu gitondo mbere yo kujya ku ishuri kwiga? 1= nta na rimwe 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose					
D	Ni kuruhe rugero ufata amafunguro ya saa sita ku ishuri? 1= nta na rimwe 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose					
E	Ni kuruhe rugero ufata amafunguro ya ni mugoroba mu rugo? 1= nta na rimwe 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose					
F	Umuryango wawe ufite umukozi wo mu rugo? Yego <input type="checkbox"/> Oya <input type="checkbox"/> Niba ari oya, ni kuruhe rugero wita kubo muvukana? 1= nta na rimwe 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose					

G	Ni kuruhe rugero wita ku matungo yo mu rugo mu minsi y' ishuri? 1= nta na rimwe 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose					
H	Ni kuruhe rugero wasibye ishuri wagiye gutashya inkwi zo gucana? 1= nta na rimwe 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose					
<b>8</b>						
A	Ni ikihe cyiciro kiruta ibindi cy' amashuri umubyeyi wawe w' umugabo (papa) yize? 1 = ntiyize, 2 = abanza, 3 = ayisumbuyeye, 4 = kaminuza, 5 = ayandi yavuge .....					
B	Ni ikihe cyiciro kiruta ibindi cy' amashuri umubyeyi wawe w' umugore (mama) yize? 1 = ntiyize, 2 = abanza, 3 = ayisumbuyeye, 4 = kaminuza, 5 = ayandi yavuge.....					
C	Ni izihe ndimi umubyeyi wawe w' umugabo (papa) azi kuvuga?1= Ikinyarwanda, 2 = Igifaransa, 3 = Icyongereza, 4 = Igiswahiri, 5 = izindi zivuge.....					
D	Ni izihe ndimi umubyeyi wawe w' umugore (mama) azi kuvuga?1 = Ikinyarwanda, 2 = Igifaransa,3 = Icyongereza, 4 = Igiswahiri, 5 = izindi zivuge.....					
E	Ni kuruhe rugero umubyeyi wawe w' umugabo (papa) agufasha gukora umukoro wo mu rugo (homework). 1= nta na rimwe 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose.					
F	Ni kuruhe rugero umubyeyi wawe w' umugore (mama) agufasha gukora umukoro wo mu rugo (homework). 1= nta na rimwe 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose.					
G	Ni kuruhe rugero umubyeyi wawe w' umugabo (papa) agufasha gusoma ibitabo? 1= nta na rimwe, 2= gake cyane, 3= rimwe narimwe,4= inshuro nyinshi, 5 = igihe cyose					

H	Ni kuruhe rugero umubyeyi wawe w' umugore (mama) agufasha gusoma ibitabo? 1= nta na rimwe, 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose.					
I	Ni kuruhe rugero umubyeyi wawe w' umugabo (papa) asuzuma imikoro wahaye ku ishuri? 1= nta na rimwe, 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose.					
J	Ni kuruhe rugero umubyeyi wawe w' umugore (mama) asuzuma imikoro wahawe ku ishuri? 1= nta na rimwe, 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose					
9						
A	Umuryango wawe ugizwe n'abantu bangahe? 1= umwe, 2 = babiri, 3 = batatu, 4 = bane, 5 = batantu na hejuru yabo.					
B	Inzu yanyu ifite ibyumba bangahe? 1= icyumba kimwe, 2 = bibiri, 3= bitatu 4 = bine, 5= bitanu na hejuru yabwo.					
C	Ni kuruhe rugero umuryango wawe ukoresha umuriro w'amashanyarazi. 1= nta na rimwe, 2 = gake cyane, 3 = rimwe na rimwe, 4 = inshuro nyinshi, 5 = igihe cyose.					
D	Inzu yanyu ifite amazi? Yego <input type="checkbox"/> Oya <input type="checkbox"/> Niba ari oya, ni muri metro (m) zingahe ivomero riri 1= m 0 - m200, 2 = m200 - m400, 3 = m400 - m600, 4 = m600 - m800, 5 = $\geq$ m800					
E	Icumbi ryanyu ni bwoko ki? 1= inkambi, 2 = gucumbika mu baturanyi, 3 = murakodesha, 4= inzu yanyu bwite, 5= ibindi bivuge .....					
F	Wasibiye inshuro zingahe? 1= imwe, 2= ebyiri, 3= eshatu, 4= izirenze eshatu					

**Murakoze cyane**  
**Amahirwe masa mu bizamini muri kwitegura!!**

## APPENDIX III: QUESTIONNAIRE FOR TEACHERS

### SECTION A: BACKGROUND INFORMATION

- |   |   |
|---|---|
| <p>1. Gender: female [ ] male [ ]</p> <p>2. Marital status of Headteacher</p> <p>Single [ ] Married [ ]</p> <p>3. Age</p> <p>Below 30 [ ], 30-35 Yrs [ ]</p> <p>36-40 Yrs. [ ], 41-45yrs [ ]</p> <p>40- 49 Yrs., 50 yrs. and above</p> <p>4. District</p> <p>Nyamasheke [ ], Karongi [ ]</p> <p>5. Highest academic qualification</p> | <p>Diploma [ ], B.Ed. [ ], M.Ed. [ ]</p> <p>PhD [ ], Other [ ]</p> <p>6. Teaching experience</p> <p>Below 5years [ ] 6-10yrs [ ], 11-15yrs 16-20 yrs. [ ], Above 20 yrs. [ ]</p> <p>7. How long have you been head teacher?</p> <p>1-5Yrs [ ], 6-10Yrs [ ], 11-15yrs, 16-20Yrs[ ], Above 20 [ ]</p> |
|---|---|

SECTION B: Examining the influence of family socio-economic parameters on internal efficiency in primary schools by ticking in the box provided to match the statement with the level of occurrences where: 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree

No	Statements	1	2	3	4	5
<b>6</b>	<b>Parental occupations and Internal efficiency of public primary schools in Western Province of Rwanda</b>					
A	Parental occupations influence Internal efficiency of primary schools in Western Province of Rwanda.					
B	Busyness of the parents influence academic continuation of the pupils in primary schools in Western Province of Rwanda.					
C	Children whose parents have formal employment performed better in class and recoded the lowest repetition and dropout rates than pupils whose parents have informal occupations.					

D	Parents who work for salaries are more committed on academic progression of their children than self -employed parents.					
<b>7 Parental income and internal efficiency of public primary schools in Western Province of Rwanda</b>						
F	Lack of basic school materials influence dropout and repetition rates of pupils in primary schools in Western Province of Rwanda.					
G	Lack of school fees can influence repetition and dropout rate of pupils in primary schools in Western province of Rwanda.					
H	Chores and other domestic works given to pupils on school days can influence dropout, repetition and completion rates of pupils in primary schools in Western province of Rwanda.					
I	Lack of adequate food and other basic needs in the family influence academic progression of pupils in primary schools in Western province					
J	Pupils who often report to school without eating are likely to repeat or dropout school.					
<b>8 Parental Education levels and Internal Efficiency of Public Primary Schools in Western Province of Rwanda</b>						
K	Educated parents are more committed on academic progression of children than less educated parents.					
L	Children from less educated families are likely to repeat school than children from higher educated families					
M	Parental attitude to word pupils' repetition in school change with the level of education.					
N	Educated parents act as second teacher to their children, and this reduce the rate of repetition when compared to their counterpart who are not educated.					
<b>9 Family Housing Conditions (family environment) and Internal Efficiency of Public Primary Schools in Western Province of Rwanda</b>						



O	Availability of electricity in the family house influence the completion rate of pupils in primary school in Western Province of Rwanda.					
P	A pupil whose family lives in the own house is more likely to complete school on time than pupil whose family live in temporary house.					
Q	Homeless and street children cannot complete their studies on time					
R	Pupils whose families use traditional source of light (e.g., Kerosene, firewood or charcoals) face learning challenges and this increase the rate of dropout and repetitions among them.					
S	Pupils who often use long distance to fetch water for domestic use on school day are likely to face learning challenges leading to delayed completion.					
T	Homeless and street pupils have no fixed place to live, they move from one place to other, and this influence internal inefficiency of their schools.					

12: What are the measures that should be taken to enhance internal efficiency of public primary schools in Western Province of Rwanda?

.....

.....

.....

**Thank you so much for your kindness participation**

**God bless you!!**

**APPENDIX IV: INTERVIEW GUIDE FOR HEADTEACHERS & DISTRICT  
DIRECTORS OF EDUCATION**

**SECTION A: BACKGROUND INFORMATION**

1. Gender female [ ] male [ ]
2. Marital status single [ ] married [ ]
3. Age: Below 30yrs [ ], 30-35yrs [ ], 36- 40yrs [ ], 41-45yrs [ ], 46-50yrs [ ], 51and more
3. District: Nyamasheke [ ]      Karongi [ ]
4. Highest academic professional qualification: Diploma [ ], B.ed.[ ], M.ed.[ ], PhD [ ]
5. How long have you been educational leader? Below 5yrs [ ], 6-10yrs[ ], 11-15[ ],16-20yrs, More than 20yrs [ ]
6. What does the trend of internal efficiency look like in your District?  
.....  
.....
7. To what extent do parental occupations influence internal efficiency in primary schools in Western province of Rwanda?  
.....  
.....
8. To what extent do parental income influence internal efficiency in primary schools in Western province of Rwanda?  
.....  
.....

9. What is the difference in performance of pupils whose family is in fourth category of Ubudehe against performance of a first Ubudehe Category pupils?

.....  
.....

10. To what extent do parental educational level influence internal efficiency in primary schools in Western province of Rwanda?

.....  
.....

11. To what extent do family housing conditions influence internal efficiency in primary schools in Western Province of Rwanda?

.....  
.....

12. What measures that should be taken to enhance internal efficiency of public primary schools in Western Province of in Rwanda?

.....  
.....

**Thank you for your contribution**

**God bless you!!**

**APPENDIX V: DOCUMENTS ANALYSIS SCHEDULE GUIDE**

Q1. Internal efficiency in Primary schools in Western Province of Rwanda

Province	District	School	Internal Efficiency in Primary school 2019/2020 Academic Year				
			Enrollment rates	Completion rates	Dropout rates	Repetition rates	Performance rates
Western Province	Karongi	15					
	Nyamash eke	13					

## Q2. Socio-economic conditions of population in Western Province of Rwanda

- Total population Male and Female
- Socio-economic activities mostly performed by people (mothers & fathers) in Western Province Rwanda
- Educational level of the parents
- Literacy level per gender and age group
- Socio-economic Level or Ubudehe Category of households
- Housing conditions

## Q3 Influence of socio-economic parameters on internal efficiency

- Correlation between parental occupations and internal efficiency of primary schools
- Correlation between parental income and internal efficiency of primary schools
- Correlation between parental educational levels and internal efficiency of primary schools
- Correlation between family housing conditions and internal efficiency of primary school.

## APPENDIX; VI: AGGREGATE AND MARKS RECODED

The Average scores for the first performer's pupils in all five tested subjects are 80 percent. Since each first performer graded 1. This means that in five subjects will be 5, then grade five equals to eighty percent "5 = 80%"

Aggregate	Marks in percentages	Division	
5	80	Division I	
6	79		
7	78		
8	77		
9	76		
10	75		
11	74		
12	73		
13	72		
14	71		
15	70		
16	69		Division II
17	68		
18	67		
19	66		
20	65		
21	64		
22	63		
23	62		
24	61		
25	60		
26	59		
27	58		
28	57		
29	56		
30	55		
31	54	Division III	
32	53		
33	52		
34	51		
35	50		
36	49		
37	48		
38	47	Division IV	
39	46		
40	45		
41	44		
42	43		
43	42		

44  
45

41  
40 and less

Unclassified

## APPENDIX IX: RESEARCH PERMISSION KARONGI DISTRICT

REPUBLIC OF RWANDA



WESTERN PROVINCE

KARONGI DISTRICT

**PO.BOX: 23 KBUYE**

To: HASHAKIMANA Theogene.

Tel:0788449615, GASABO.

Dear Sir,

**RE:** PERMISSION FOR DATA COLLECTION

With reference to your letter dated 29/09/2019 requesting for the permission of collecting data in our primary schools and interviewing some of staffs, This serves to let you know that the permission is guaranteed to you with consideration of research ethics, it is in this regard that we are requesting you to share with us the research findings once this research entitled "**Family socio economic parameters on internal efficiency in primary schools**" will have been completed. We urge you to work closely with our education department for any future assistance that you may need to facilitate your research.

Yours Faithfully,

*For MUKARUTESI Vestine*  
MUKARUTESI Vestine.

Mayor of Karongi District.



**CC:**

- President of Karongi District council.
- Vice Mayor (All)
- District Executive Secretary
- DDE,DEOs(All ) /Karongi District.

## APPENDIX X: RESEARCH PERMISSION NYAMASHEKE DISTRICT

REPUBLIC OF RWANDA



WESTERN PROVINCE  
NYAMASHEKE DISTRICT  
Tél : 0788753733/0788780518  
E mail : [nyamashekedistrict@nyamasheke.gov.rw](mailto:nyamashekedistrict@nyamasheke.gov.rw)  
Website: [www.nyamasheke.gov.rw](http://www.nyamasheke.gov.rw)  
Po Bo: 72 NYAMASHEKE

Nyamasheke, February 24, 2020  
No ...../03.07/2020

8444

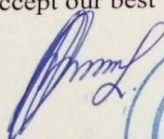
Dear HASHAKIMANA Theogene  
Nyamasheke District  
Phone: +250 788449615

**RE: Authorization to carry out an educational research**

With reference to your letter dated 29<sup>th</sup> September 2019 requesting to carry out a research on the topic, **“Family socio-economic parameters on internal efficiency in primary schools in western province Rwanda;”**

After analyzing the nature of your topic, I am pleased to inform you that you are allowed to conduct this research in schools in Nyamasheke District.

Please accept our best wishes.

  
**MUKAMASABO Appolonie**  
Mayor of Nyamasheke District



**Cc:**

- The Vice Mayors (Both)
- The District Executive Secretary
- Ag. District Director of Education

**NYAMASHEKE**

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**APPENDIX XI: MAP OF RWANDA**



## APPENDIX XII: THE MAP OF WESTERN PROVINCE OF RWANDA

