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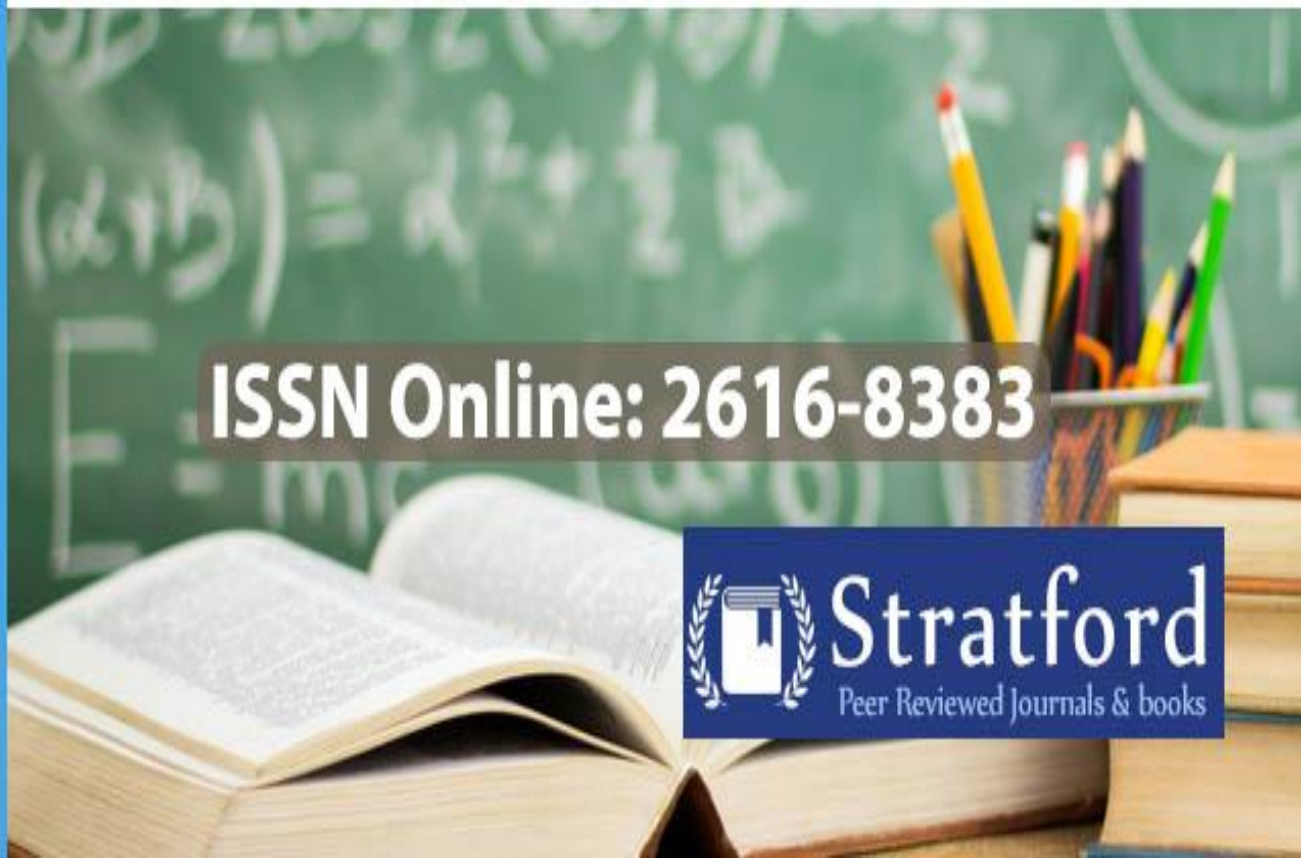


# Influence of Family Housing Conditions on Academic Completion Rates of Pupils in Public Primary Schools in Western Province of Rwanda

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# Influence of Family Housing Conditions on Academic Completion Rates of Pupils in Public Primary Schools in Western Province of Rwanda

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## Abstract

Education is the main agent of change in both developed and developing countries. Family housing conditions have a role to play in the learning process of the siblings. The purpose of this paper was to examine the influence of family housing conditions on academic completion rate of pupils in public primary schools in Western province of Rwanda. The paper tested the hypothesis that there is no statistically significant influence of family housing conditions on academic completion rate of pupils in public primary schools in Western Province of Rwanda. Mixed method research design was employed. The study targeted 96 primary schools making the population of 9127 people including primary six pupils, teachers, headteachers and District directors of education. The Solvin's sampling formula, Stratified, purposive and simple random sampling techniques were used to select the sample size of 384 pupils, 115 teachers, 28 headteachers and 2 DDE. The questionnaires, interview guide and document analysis schedules were used to collect the data. The findings revealed that the distance used to get clean water; the size of family house and the source of power (light & heat) used show the highest influence on pupils 'completion rates. The majority of teachers' responses at 82.9% agreed that family housing conditions influence grade

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scores and completion rate of pupils in Western province of Rwanda. However, the computed linear regression shows that there is no statistically significant influence of family housing conditions on the completion rate of pupils in public schools as indicated by the critical values of 0.170; 0.552; 0.532; 0.711; 0.282 >p (0.05). It was also revealed that family housing conditions can only explain 3.90% of the pupils' completion rate in primary schools in Western Province of Rwanda. The study recommends that learning should not solely left to pupils-teachers relationship but it should be extended to include the clear role and active participation of parents. Government should improve social service (clean water, electricity etc..,) provided to its people and make it available to every household, parents ought to understand and implant family planning programs.

**Key words:** *Family Housing Condition; Academic Completion; Public Primary School.*

### 1.1 Background to the Study

Education is the main agent of change in developed countries as well as in developing countries. At the same time, the family play significant foundation for the family's off springs life. Family housing conditions is one among the factors influencing academic achievement of students all over the world. United Nations Developmental Programs UNDP (2015) defined housing as the process of setting buildings that serve as living quarters for one or more families.

Across the world, the impacts of housing conditions on education have been discussed, In Landon for example, Harker (2007), carried out a study on the impacts of housing on children's life chances, she 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 schools than normal children due to the disruption caused by moving into and between temporary accommodations. The study commissioned by US Department of education Braverman *et al*. (2011), indicated that conditions in neighborhoods where homes are located have powerful effects on child's health as well as social and academic life. Furthermore, study conducted in Colombia revealed the influence of housing condition on academic progression of leaners, where leaners from low housing standard recoded the lowest completion rate in the country (Martina, 2009).

In Africa, the study carried out in Soweto South Africa by Johannesburg University (2017), stressed that nature and type of houses in which students live affect the completion rate of students. In similar ways, the study carried out in Nigeria by Abdou-Raheem (2015), confirmed that students' whose family house has electricity perform better than students whose family used kerosene lamps, firewood, charcoal and candles. This is true due to the fact that, electricity in the

family house create conductive and favorable learning environment at home. This help learners to report to school when are ready to progress and excel in their studies.

In Rwanda, the data presented by National Institute of Statistics of Rwanda (NISR, 2014), shows that 49 percent of private households are found in clustered rural settlements, 34 percent in dispersed settlements, about 14 percent in squatter housing and 2 percent in planned urban housing and only 18 percent of households have access to electricity however, the report doesn't show the influence of the existing housing conditions on academic completion rate of pupils in the country, thus a need for this study. Later on, laterite (2017), under the commission of MINEDUC and UNICEF carried out a study aimed to understand drop out and repetition rate in Rwanda. The findings of this study revealed the completion rate of 71.6%; 13.9% of repetition rate and 6.7% of the dropout rate. In addition, the global economic report (2017) revealed that only 9% of pupils enrolled in primary school reach University. Furthermore, the study carried by Hynes and Margie (2018) have revealed that Western province Rwanda recoded the lowest completion rate of 66 percent. Dispute the fact that there were numerous studies that addresses the issues of completion rate in Rwanda, there was a gap in the role housing conditions played on completion rate. Therefore, the current study sought to fill the existing gap.

### 1.2 Statement of the Problem

Academic progress has long been recognized as one of the important goals of education the world over. However, it is generally observed that learners placed in identical set of academic situations vary in their scholastic achievement. For a long period of time there has been opposing view about the factors influencing academic progression of students. Some posit that teaching and learning processes is the single most factor influencing learning, others argued against this and proposed several factors influencing learning process such as school environment, household factors, individual factors etc. However, effective educational planning cannot be achieved unless know the most influential factors of learning. This paper therefore sought to establish the influence of family housing conditions on academic completion rate of pupils in public primary schools in Western province of Rwanda.

### 1.3 Objective of the Paper

The purpose of this paper was to establish the influence of family housing conditions on academic completion rates of pupils in public primary schools in Western Province of Rwanda.

### 2.1 Review of Related Literature

Academic completion is one among the key factors which attract attentions of educational planners and researchers in all corners of the globe. Making the point a case, 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. 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. Martina (2009), revealed that housing conditions effect students' academic performance. Student who lives in lower standard house perform lesser than student who lives in higher standards house. In additional, the study carried in Soweto South Africa by Johannesburg University (2017) stressed that, the nature and type of houses in which students live affect their educational achievements. In similar ways the study carried in Nigeria, revealed that students who lives in houses with electric power performed better than those whose houses have not electric power (Abdou-Raheem, 2015).

In Rwanda the data presented by National Institute of statistics of Rwanda (NISR,2014), shows that 49% of private households are found in clustered rural settlements (umudugudu), 34% in dispersed settlements, about 14% in squatter housing and 2% in planned urban housing. About 95% of the private households are either built of sun-dried brick walls (about 55%) or wood/mud walls (about 36%). It was indicated that 99% of Rwanda's private households use either iron sheets (about 60%) or local tiles (about 39%) as the main material of their roof, 73% of households in Rwanda collect water from improved water source, 57% rely on lamp as source of right, only 18% have access on electricity. However, the existing data on family housing conditions in Rwanda didn't establish the influence of family housing conditions on academic completion rates of learners in the country.

### 3.1 Research Methodology

The study used mixed method research design. This design was suitable for this study due to the fact that, it allowed the collection of both qualitative and quantitative data in a single study. The target population was 96 public primary schools in Western Province of Rwanda. The targeted

respondents were 8640 students, 384 teachers, 96 headteachers and 7 district directors of education (DDE). Solvin formula, stratified, purposive and simple random sampling techniques were used to select the sample of 384 pupils, 115 teachers, 28 headteachers and 2 district directors of education. Questionnaires, interview guide and document analysis schedules were used to collect the data. Questionnaire was distributed to pupils and teachers; interview guide was administrated to headteachers and DDE. The collected data was coded and entered into computer for analysis using SPSS version 22$^{rd}$ and STATA version 13$^{th}$. Descriptive statistics, Linear regression and thematic approach were tested. Validity and Reliability were computed through pilot study, the computed Cronbach Alpha revealed reliability coefficient of 90% and 75% for the research instruments of both pupils and teachers' questionnaires respectively, ethical rules that guide educational researches were highly respected.

### 4.1 Findings and Discussion

The findings presented in this paper were collected from 408 pupils who were candidate of primary leaving examination (PLE) in 2019 in Western province of Rwanda, 110 teachers; 28 head teachers and 2 district directors of education.

### 4.2 Teachers Responses showing the influence of family housing conditions on academic completion rate of pupils in public primary schools in Western Province of Rwanda.

Teaching is a multi-faced profession, a part of teaching, teachers also act as the second parents to the learners. It is due to this reasons that teachers' responses on the influence of family housing conditions on academic completion rate of pupils in public primary schools is Western province of Rwanda were significantly important.

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**Table 1: Teachers' responses on the influence of family housing conditions on pupils' academic completion rate in public primary schools**

| STATEMENTS | SD | | D | | N | | A | | SA | |
|---|---|---|---|---|---|---|---|---|---|---|
| | F | % | F | % | F | % | F | % | F | % |
| Availability of electricity in the family house influence pupils' academic completion rate of public 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 |
| Pupil whose family use tradition source of light (e.g. Kerosene, firewood) cannot complete primary school on time. | 2 | 1.8 | 11 | 10.0 | 8 | 7.3 | 69 | 62.7 | 20 | 18.2 |
| Pupils who often fetch water for domestic use before reporting to school cannot complete primary school on time. | 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 can affect their completion period of their study at primary schools. | 3 | 2.7 | 10 | 9.1 | 6 | 5.5 | 57 | 51.8 | 34 | 30.9 |
| **AVERAGE** | **4** | **2.3** | **8** | **7.4** | **8** | **6.4** | **65** | **59.1** | **26** | **23.8** |

Table 1 presents teachers' responses on the influence of family housing conditions on pupils' academic completion rate in public primary schools in Western province of Rwanda. Collected data was presented based on provided statements:

For the first statement 59.10 percent agreed that availability of electricity in the pupils' family houses influence academic completion rate of pupils in public primary schools; on the second

statement 59.10 percent agreed 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; on the third statement 61.80 percent agreed that homeless and street children cannot complete primary school on time; on the fourth statement 62.70 percent pupils whose families use traditional source of light (Kerosene, candles and firewood) are less likely to complete primary school on time than pupils who have electricity in family house; on the fifth statement 60 percent agreed that pupils who fetch water for domestic use before and after reporting to school cannot complete primary school on time; on the last statement, 51.80 percent agreed that homeless and street pupils have no fixed place to live, they move from one place to another and this reduce the chance to complete their study on the provided period of time. Through the analysis of these findings provided by teachers it was concluded that family housing conditions influence academic completion rate of pupils in public primary schools in Western province of Rwanda. These findings collaborated with the findings published by Braverman et al. (2011), which have indicated that conditions in neighborhoods where homes are located have powerful effects on child's health as well as social and academic life.

### 4.3 Responses from Head teachers and DDE showing the Influence of Family Housing Conditions on Academic Completion rate of Pupils in Public Primary Schools

Head teachers and districts directors of education are the inspectors of educational policy implementation in Rwanda. Majority of those inspectors who participated in this study confirmed that family housing indicators (nature of family house, household size, family size, source of power used and distance used to get water source) influence academic completion rate of pupils in the province. This is due to the fact that basic education is received in the family.

They also argued that homeless, streets children and children whose families live in refugee camps meet with several learning challenges which hinder academic completion. In addition to this, analyzed documents revealed that over aged students are more likely to repeat and dropout of schools, hence completion rate being affected. 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.

### 4.4 Relationship between Family Housing Conditions and Grade Scored by Pupils in PLE in Public Primary Schools in Western Province of Rwanda

Academic completion rate depends on grade scores of the leaners. So, data presented in the Table 2 shows the extent to which family housing conditions correlate with pupils' grade scores in PLE.

**Table 2: presents Mean scores, Std. Deviation and Variances of pupils in PLE**

| Variables | Indicators | Mean scores | Std. Deviation | Variance | N |
|---|---|---|---|---|---|
| Household size | 0-3 member | 51.16 | 4.686 | 21.964 | 44 |
| | 3-5 member | 51.18 | 6.115 | 37.398 | 104 |
| | More than 5 members | 52.17 | 7.174 | 51.467 | 260 |
| Size of family house | Single room | 49.14 | 6.443 | 41.516 | 21 |
| | Double room | 48.50 | 5.795 | 33.591 | 54 |
| | Triple room | 49.42 | 4.909 | 24.104 | 106 |
| | Fourth room and more | 51.03 | 6.561 | 43.059 | 227 |
| Source of power used | Traditional source | 49.69 | 6.209 | 38.563 | 133 |
| | Electricity | 52.023 | 6.976 | 48.677 | 179 |
| Having water in the compound | Yes | 51.40 | 6.841 | 46.802 | 119 |
| | No | 50.23 | 6.441 | 41.493 | 288 |
| Distance used to fetch water | Lesser than 200 meters | 52.19 | 6.863 | 47.110 | 121 |
| | Between 200 m-400m | 51.02 | 7.023 | 49.333 | 85 |
| | Between 400m- 600m | 49.22 | 6.652 | 44.263 | 119 |
| | 600m and more | 48.95 | 4.997 | 24.976 | 46 |
| Nature of house | Own houses | 50.54 | 6.559 | 43.032 | 375 |
| | Rental houses | 50.81 | 6.336 | 40.156 | 22 |
| | Homeless pupils | 50.18 | 7.386 | 54.564 | 11 |

The Table 2 presents Mean scores, Std. deviation and Variance of pupils scores in PLE.

Throughout the data analysis, it was established that distance used to fetch water, size of family house and source of power used in the family house shows the highest mean difference (3.24; 2.52;

2.33) respectively. This mean that pupils whose family use long distance to get clean water; pupils whose family houses were small and pupils whose family used traditional source of power (Kerosene lamp, candles and firewood) recoded the lowest mean scores in primary leaving examination (PLE). Pupils with low scores are likely to repeat the class which affect the completion rates. These findings were against the findings presented by Guo (1999) and Skousen (2004) that there is a slight positive effect on math scores for children from large families because children with many siblings may have access to more resources, they are more likely to have siblings who recently studied the same math. They also observed that children with many siblings have less pressure to fulfil all parental dreams and ambitions. On the other hand, the findings collaborated with the findings presented by Martina in (2009) and Abdou-Raheem (2015) which have revealed that housing conditions affected students' academic achievement and that students lived in lower standard house performed lesser than students lived in higher standard houses.

### 4.5 Hypothesis Testing

**Table 3: Presents Model Summary**

**Model Summary**

| | | | | | Change Statistics | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Model** | **R** | **R Square** | **Adjusted R Square** | **Std. Error of the Estimate** | **R Square Change** | **F Change** | **df1** | **df2** | **Sig. F Change** | **Durbin-Watson** |
| 1 | .197[a] | .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 3 shows that there is a low positive degree of relationship between family housing conditions and pupils completion rate in public primary school in Western Province of Rwanda. This was indicated by r= 0.197. The Table 3 also shows r-squared of 0.039. This means that family

housing conditions can only explain 3.90% of pupils' completion rates. Therefore, 96.40% will be determined by other factors such as student-teacher ratio, teachers' qualification, teachers' motivation, school environment and social economic status of the family (Hynes & Gill, 2018).

**Table 4: Presents Computed Outputs Coefficient for Variables**

| Model | Unstandardized Coefficients | | Standardized Coefficients | | | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | T | Sig. | Lower Bound | Upper Bound |
| (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 shows that distance moved by pupils' households' members to fetch water was significant at .016<.05.; number of rooms that make family house was sig at.0170>.05.; source of power used was sig at .552 >.05; having water source in the compound was sig at.532; nature of households' houses was sig at .711> .05; pupils household size was sig at .282> .05. Majority of the computed indicators shows critical values greater than significance level of .05. Based on the sated p-value rule, that if significant level is greater than.05 accept null hypothesis; we therefore concluded that there is no significant influence of family housing conditions on pupils' academic completion rate in public primary schools in Western Province of Rwanda.

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### 4.6 Measures that should be taken to resolve students learning problems

These measures were proposed by educational stakeholders in Western province Rwanda but they are applicable for all school in developing countries. Suggested measures are presented in the Figure 1.

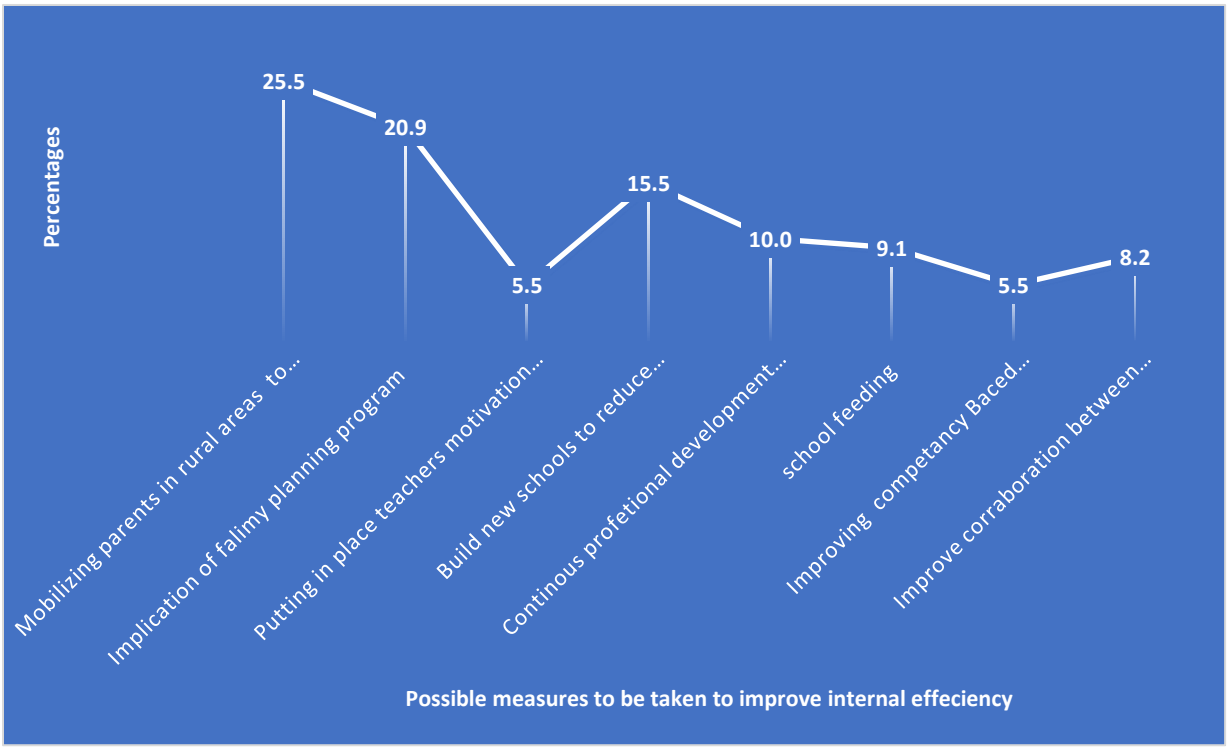


**Figure 1: presents measures that should be taken to resolve learning problems**

The Figure 1 showed that mobilization to improve parental participation in learning process; implication of family planning programs; putting in place mechanisms to improve teachers motivations; reducing pupils-teacher ratio by building new classrooms; provision of continuous professional development programs to the teachers; extend school feeding programs in all public primary schools; provision of relevant and adequate competency based curriculum materials and collaborative mechanisms between parents, schools (staffs and leaders) and local authorities about learners and learning problems should be improved.

### 5.1 Conclusion and recommendations

Throughout the study it was concluded that there is no significant influences of family housing conditions on academic completion rate of pupils in public primary school in Western province of Rwanda. There educational planners should put more emphasis on school- based factors by making it of standards in terms of pupils -teachers' ratios and teaching and learning aids and materials.

- Learning should not solely leave to pupils-teachers relationship but should be extended to include clear role and active participation of parents.
- Teachers' salaries should be increased to make it relevant to the current market prices
- The findings revealed that majority of the families have more than 5 family members. i.e. that there is a high rate of birth in the province which influences high ratio of pupils per teacher, therefore the government should build more classrooms and citizens out to understand and to implement family planning programs.
- Government should make clean water and electricity available to every citizen

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