

The Influence of Parental Incomes on Internal Efficiency of Public Primary Schools in Western Province-Rwanda

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Abstract

It is indisputable fact that the progress of a country is highly dependent on quality education provided to its citizens (2016). This study sought to investigate the influence of parental incomes on internal efficiency (dropout and repetition rates) of public primary schools in Western province of Rwanda. The hypothesis tested was, “there is no significant relationship between parental incomes on internal efficiency (dropout and repetition rates) of public primary schools in Western province of Rwanda”.

Materials and Methods

Mixed method research design was employed. The target population was 9217 people. Slovene formula, stratified sampling, simple random sampling and purposive sampling technics were used to select sample size of 553 respondents including 408 students, 115 teachers 28 headteachers and 2 District Directors of Education (DDE). Questionnaires, interview guide and document analysis schedules were used to collect the data. SPSS 22nd and STATA 13th were used to inter and to analyze the data. Both descriptive and inferential statistics were computed, Tables and Graphs and Textual Model were used to present the findings.

Results

Throughout the findings, it was established that 53.4% of pupils’ families have average income, 66.60% of the pupils have never take breakfast, 68.4% have never take lunch, while 42.20% were always involved in domestic chores on school days. It was also indicated that pupils whose families were in the category I of Ubudehe. Pupils who have never take lunch, recoded the lowest mean scores in PLE of 2019. Equally important, pupils who often failed to report to school due to lack of school materials, and those who always involved in domestic chores (caring for siblings, look after cattle, collecting firewood, cooking and fetching water) on school days recoded the lowest mean scores < 50% in PLE in 2019. The over all findings revealed that there is a significant relationship between parental incomes and internal efficiency of public primary schools in Western province of Rwanda.

Key terms: Parental Income, internal efficiency, dropout rate, repetition rate, public primary school, and Ubudehe Category.

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I. INTRODUCTION

In general, it is indisputable fact that the progress of a country is highly dependent on the education of their citizen. Education plays a central role and has a cross cutting influence on all aspects of human life. Educational reform initiatives in developing counties are aiming at making Education an effective engine for national development (UNESCO, 2016). Ultimately, both Governments, the policy makers, private and civil societies have ascertained that 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 outcomes would play significant impact on community welfares (World Bank (2011); UNESCO (2011)).

Increasingly, education is described as a fundamental human right and a key to development. On the account of this right, Tadde (2008) underlines that governments of developing nations declared their commitment through the provision of free primary education to all the citizens in the reasonable time in line of translating principals embodied in the United Nations Declaration of human rights and thereby realize the dual gains of education as intrinsic basic rights and means for full development. The Children’s basic education starts in the family and family contribution on child’s education change with income levels of the families (Johnston & Hynes, 2018). To take this case in point, the findings of the study carried out by Cherian (2010) to establish

relationship between parental income and academic achievement in South West of China, have revealed that there is a positive degree of relationship between parental income and Academic achievement of students in the region. Correspondingly, Deguzman and Gallardo (2017) revealed parental income as a key factor influencing internal efficiency of school, according to UNESCO, (2016) Internal efficiency is defined as the comparison of learning, a non-monetary outcome of education to the cost of education inputs. Without a doubt, Ushie, Owolabi and Emeka (2012), concluded that low income of parents contributes to high dropout and repetition rates of secondary schools in Ekiti state Nigeria. More emphatically, Ahsan et al. (2015) asserted that when family income is not enough, basic needs and students' academic requirements remain unfulfilled, this creates unfavorable learning conditions and undesired learning outcomes.

In Rwanda, family income is measured through Ubudehe categories. Ubudehe categories are witnessing the income level of the household in the country. They are expressed through Ubudehe program. Ubudehe program is one of the homegrown solutions for Rwanda. It is the long-standing practice of Rwandan culture of collective actions and mutual support aiming at solving community problems (MINALOC, 2014). It 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; Rwanda Government Board (RGB), 2016). While explaining the purpose of Ubudehe program was to provide information on the level of support families receive through government social protection programmes (RGB, 2016).

Not long ago, The Local Administrative Entities Development Agency (LODA, 2014) created new Ubudehe Categories whereby 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 were grouped into four categories as follows; Category I was families who do not have a house and can hardly afford basic needs. Category II was families who have a dwelling of their own or are able to rent one but rarely to get full time jobs. Category III comprises 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 and Category IV which comprises families who own large-scale businesses, individuals working with international organizations and industries as well as public servants (LODA, 2014). Since then, the data on households' income levels have been collected. However, there no current study carried out, to establish influence parental incomes levels (Ubudehe categories) on internal efficiency of primary schools in Rwanda. So, this study investigated the influence of parental incomes Levels (Ubudehe categories) on internal efficiency (dropout and repetition rates) of public primary schools in Western Province of Rwanda.

II. REVIEW OF RELATED LITERATURE

Referring to the context of this study, parental incomes was conceptualized as the total compensation of all family members, it is generally father and mother income. Magrabi et al., (1991) argued that the ultimate goal of households is to take care of the well-being of its members, including the children living in the household. A family derives income from three main sources: Wages, property and the government. The income from labor is the primary income; the secondary income (or the income that can be spent) includes all the extra granted by the government (SCP, 2011). Wages can vary depending on the jobs of household members and the number of members in the household. At the same time, education can have an effect on the type of job resulting in differing wages between different families and subsequently differences in property possession. Governmental welfare benefits most often go to low-income households as a way of compensating for the low income, but still the top earning households in the Netherlands have got more available resources than the households with a low income (Case et. al., 1999). Though the government grants benefit to families (partly) in return for the society (economic) benefit when children have grown up, families themselves remain the first responsible for the upbringing of their children and having enough money to do so. With the current government in the Netherlands, the costs for the parents only get higher because of the cutting of several child-related subsidies (Dagoba, 2014).

The currently available studies conducted to establish the influence of parental income on internal efficiency have revealed mixed conclusions. To make the point a case, Fannie and Mueller (2008), investigated the influence of parental income on post -secondary education attendance in Canada. The study findings revealed significant high positive degree of relationship between parental income and University attendance. Later on, Cherian (2010), conducted a study untitled relationship between parental income and academic achievement of students in South West of China. The findings of this study showed a positive degree of relationship between parental income and academic achievement. An opposing view was found in the study carried out in Tokyo, Japan. The findings of this study revealed that there is no significant relationship between parental income Levels and students' dropout and repetition rates in Tokyo (Machebe, Ezegbe & Onuoha, 2017).

So far as Africa is concerned, similar results have been established. As an example, Deguzman and Gallardo (2017), Conducted a study on the influence of parental income on Internal efficiency of schools. The findings concluded that parental income is among the keys factor influencing internal efficiency. A similar result was found in the study carried out by Ushie, Owolabi and Emeka (2012) who confirmed that that low income of parents contributes to high dropout and repetitions rate of secondary school students in Ekiti state Nigeria. More important, was the view of Ahsan, Iqbal & Farooq (2015) argued that when family income is not enough, basic needs and students' academic requirements remain unfulfilled, which creates unfavorable learning conditions. Of major concern, Ntitika (2014) explained the impact of scarce family income by clarifying that inadequate family income causes learning environmental deficiencies which pushes the concerned students into low self-esteem and reduction of academic progress. Hence repeating or dropping out from the school system.

As far as Rwanda is taken into account, family income is measured based on what is called Ubudehe categories. where, the population of the country grouped into four categories of Ubudehe. Being specific, category one and two embodied people with lower income, Category three is for people with medium income and category four is for people with higher income (Mupenzi,2010). Though, Ubudehe category is a mechanism created to reduce poverty among citizens of Rwanda, it does not reveal its influence on academic achievement of the leaners. Furthermore, Laterite (2017) revealed late start, repetition, and re-entry as the key the determinate of dropout in Rwanda but, does not the clearly establish the role of parental income level. Therefore, the paper established the influence of parental income on dropout rate of pupils which was the cap left by available literature.

The data and the findings of this study was collected and presented in accordance with the education production function theory (EPF) introduced by Hanushek (1979), and was extensively developed by Pritchett and Filmer (1997), and later revised by Hanushek in 2007. This theory is based on systematic relationship between resources and students' outcomes and relationship between school and students' outputs. Pritchett and Filmer (1997), revealed that education production function is a theoretical constraint that gives mathematical expression to the production relationship that defines the maximum outputs to be produced from different combination of a given sets of inputs. In any field, The EPF is expressed in a function form as $Q = f(X_1, X_2, X_3, \dots, X_n)$. Where Q= the quality of output (dropout rate) and $X_1, X_2, X_3, \dots, X_n$ are the quantities of the input factors which is parental income levels when making reference to this study.

III. RESEARCH METHODOLOGY

This study employed Mixed method research design. The term "mixed methods" refers to an emergent methodology of research that advances the systematic integration, or "mixing," of quantitative and qualitative data within a single investigation or sustained program of inquiry. The basic premise of this methodology is that such integration permits a more complete and synergistic utilization of data than do separate quantitative and qualitative data collection and analysis.

The target population of the study under investigation was made of Nine thousand, one hundred and twenty- seven (9127) educational stakeholders in Western Province of Rwanda in which, 8640 students, 384 teachers, 96 headteachers and 7 district directors of education (DDE) were targeted. A total sample of five hundred fifty-three (553) respondents including four hundred and eight (408) pupils; one hundred and fifteen (115) teachers; Twenty-eight (28) head teachers and Two (2) District Directors of Education (DDE) were selected as sample size by using Solvin's sampling formula, stratified, purposive and simple random sampling techniques respectively.

The research instruments used for the purpose of this study included questionnaires, interviews and document analysis schedules. The structured questionnaire was used to collect data from teachers and pupils. Questionnaire for teachers was consisted of two sections. The first section of teachers' questionnaire sought to collect data on demographic data such as gender, Martial status, age group, education qualifications, and professional working experience. Whereas the second section consists of questions organized in Likert scale format sought reveal teachers' views on the influence of parental income on dropout rate in public primary schools in Western Province of Rwanda.

Likewise, Questionnaire for pupils was also made up of two sections. Section A sought to collect demographic information of pupils including gender, age and Ubudehe category whereas the second section involves questions on pupils' family income, living conditions and their effect on academic progress. The second research instruments employed by this study was interview. Semi-structured interview was administrated to head teachers and DDE to collect complement and balance of the information collected from questionnaires. The third data collection instrument was document analysis schedules to compliment and balance information collected from both questionnaires and interview.

Face validity of the test items was done by the experts in the field of education to ascertain the reliability of the questionnaire. Prior to approval, necessary corrections were made by the experts. In addition to this, Cronbach 'Alpha coefficient was computed to ascertain internal consistency of the instrument. The computed Cronbach' Alpha coefficient revealed significant level of 90 percent for pupils' questionnaire and

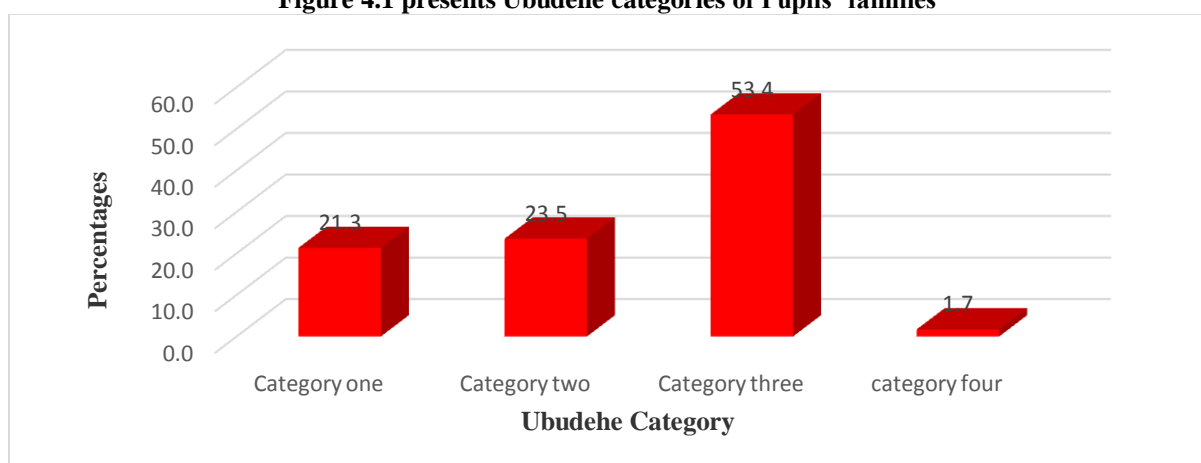
75% on teachers' questionnaire. Research Instruments for this study were self-administrated. Data from pupils was collected in time series. Researcher himself collected data on family income level and living conditions of targeted pupils before doing Primary Leaving Examinations (PLE), comparative data showing effect of family income and living conditions was collected after PLE. Moreover, Audio-record was used to manage interviews while document analysis schedules focused on academic document of last five years.

The collected data was coded and entered into SPSS version 22nd and STATA version 13th. After data cleaning, descriptive statistics (mean, frequency, percentages, Variance and Std. Deviation) and Thematic Approach were used to analyze the data collected. Tables, Graphs and Textual Models were employed to summarize and to present collected data. Pearson Correlation Coefficient and Regression Analysis were employed to measure the relationships between variables and to determine the influence of parental income on internal efficiency (Dropout and Repetition rate) of Public primary schools in Western Province of Rwanda.

IV. FINDINGS AND DISCUSSION

The findings presented in this study was collected from 408 pupils who were candidate of Primary Leaving Examination (PLE) in 2019 in Western province of Rwanda, and 110 teachers; 28 head teachers and 2 district directors of education were also involved.

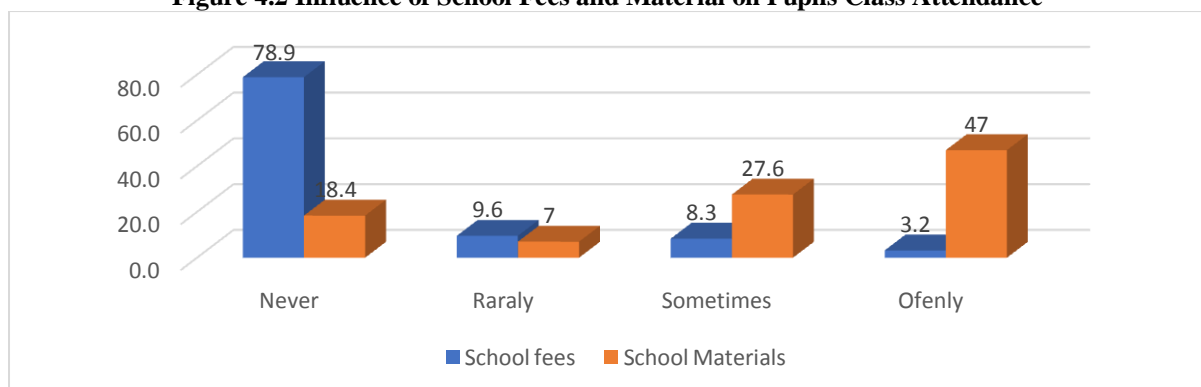
Figure 4.1 presents Ubudehe categories of Pupils' families



Source: Primary Data, 2020

Figure 4.1 shows that majority of pupils' families in western province of Rwanda were in the third category of Ubudehe. To bring to light, 218 (53.40%) of the participated pupils their families were in category III of Ubudehe; 96 (23.50%) were in the second category; 87(21.30%) were in the first category whereas, only 7(1.70%) were in the fourth category of Ubudehe. These findings were in line with the data presented by MINALOC (2016) confirming that majority of Rwandan at 53.7% were in category three of Ubudehe.

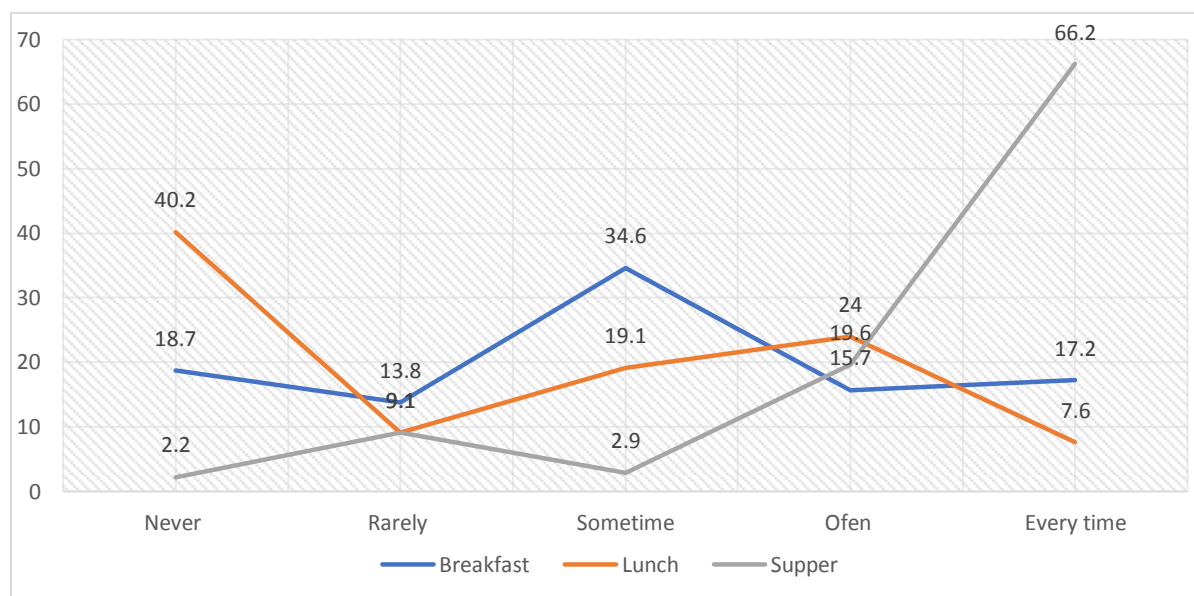
Figure 4.2 Influence of School Fees and Material on Pupils Class Attendance



The figure 4.2 shows that majority of the pupils have never failed to attend school because of school fees as indicated by 78.90% of the participants. This was due to the fact that Rwanda adopted free primary and secondary education. However, 11.5% reveals challenge of hidden cost of education. This was supported by Ngetich (2015) argued that hidden cost of education affects students' school attendance in Soy Division. The

figure 4.2 also shows that the majority of the pupils failed to report themselves to school due to the lack of school materials. This was indicated by 47% who often fail and 27.60% percent who sometimes fail. This emphasized that family income influences learners' truancy which stimulate the rates of pupils' dropping out the schools. Collaborating with this, was the influence of school materials on students' participation rate identified in the study conducted in Tharaka by (Mutegi, 2015) and in Rural region of South West of Chine by (Chen, 2009).

Figure 4.3 presents findings showing the extent to which pupils take meal n daily basis



Source: Primary Data, 2020

The figure 4.3 shows the effect of inadequate meal on pupils' performance in PLE. On this specific instance, It was indicated that 32% of pupils have never take breakfast; 34.6% sometimes take breakfast, whereas, only 23.30% of the pupils take breakfast on the regular basis. This showed that 66.60% of the pupils in Western Province Rwanda often report to school without eating. Of a little difference, 40.20% of pupils have never take lunch; 19.10% take lunch sometimes, and 31.60% often take lunch. This established that 68.40% of pupils in Western Province Rwanda never take lunch. By contrast, 85.80% of the pupils always take supper. Unlike, 14.2% sometimes go to bed without eating, and this influences the rate of dropout of school in the province which is in the same line of several recent studies such as that of Latif et al, (2015), Haq (2013), & Jingrong (2004) substantiated that the majority of pupils dropping out of the school are those who come from low-income families and that financial problem was reported one of the key factors affecting dropout rate of school cases in western province.

Table 4.1 Household Chores Mostly Performed by Pupils on School Days in Western Province of Rwanda

Domestic Chores	Never F %	Rarely F %	Sometime F %	Often F %	Always F %
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 cattle 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) 69.80%	(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%
Average	(169) 41.30%	(64) 16.60%	(84) 20.96%	(40) 10.20%	(45) 11.04%

Source: Primary Data, 2020

The table 4.1 shows that at least 39% often care for siblings on school days; 8.8% often looks after cattle; 8.60% sometimes collect fire woods on school days, 32.90% often fetch water, wash clothes and prepare food for the family on school days. These findings were supported by the findings collected through documents analysis schedules which reveals that majority of learners who are always absent from class recorded the worst scores.

Table 4.2 Teachers' Perception on the Role of Parental Incomes in Internal Efficiency

STATEMENTS	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
Lack of basic school materials among pupils affects internal efficiency public primary schools in Western Province of Rwanda.	8	7.3	32	29.1	11	10.0	45	40.9	14	12.7
Inabilities of parents to pay school fees affects internal efficiency of public 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 affects internal efficiency of public primary schools in Western province of Rwanda.	8	7.3	13	11.8	4	3.6	51	46.4	34	30.9
Lack of adequate nurture in the families affects internal efficiency of public primary schools in Western province of Rwanda.	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 repeat or dropout out of the schools.	8	7.3	8	7.3	3	2.7	53	48.2	38	34.5
Average	8	7.3	15	13.1	6	5.6	50	45.8	31	28.2

Source: Primary Data, 2020

Table 4.2 presents teachers' perception on the effects of parental incomes on internal efficiency of public primary schools in Western Province of Rwanda. Analysis and presentations followed predetermined statement. The findings on the first statement shows that 53.60% agreed that lack of basic school materials affects internal efficiency of public primary schools in Western Province of Rwanda; 75% agreed that inabilities of the parents to pay school fees affects internal efficiency of public primary schools in Western province Rwanda; 77.30% agreed that chores and other domestic activities given to pupils on school days affects internal efficiency of public primary schools in Western province of Rwanda; about 81.90% agreed that lack of adequate meal in the families affects internal efficiency of public primary schools in Western province; about 82.70% agreed that pupils who often report to school without eating are likely to repeat or dropout of schools in Western province of Rwanda. Conclusively, it was established that majority of teachers at (74%) who participated in this study agreed that parental incomes affected internal efficiency of public primary schools in Western province of Rwanda. These findings were supplemented by the data collected through interview guide and documents analysis schedules which, revealed that 95 percent of learners who dropped out the school and 88 percent of repeaters in the school years (2015/2016-2018/2019) were from economically disadvantages families.

Table 4.3 Relationship between Parental income indicators and Grade Scores of Pupils in PLE (2019) in Western Province of 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	49.53	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	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	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	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 %
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	49.50	6.494	42.178	88	21.60 %
	Some times	49.00	5.433	29.520	26	6.40 %
	Often	48.42	4.460	19.900	6	1.50 %

Source: Primary Data, 2020

Table 4.3 shows that pupils whose families are in category one of Ubudehe and those who rarely take breakfast, Lunch and supper recorded the lowest mean score in PLE 2019, equally important, pupils who often fail to report to school due to the lack of school materials, those who often care for siblings on school days, those who often looks after cattle and those who often collect firewood on school days were also recorded the lowest mean scores in PLE. This proves that low income of the family influence low grade scored by the children, which lead to either drop out of school or repeating the grade, hence internal efficiency of schools being affected.

Table 4.4 Correlation between Parental Incomes and Internal Efficiency of Public primary schools in Western Province of Rwanda

Correlations			
n°	Independent Variables	Statistical test	Internal Efficiency of Public Primary Schools in Western Province of Rwanda.
1	Ubudehe categories	Pearson Correlation Sig.(2-tailed)	.157 .002
2	Extent to which pupils 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 firewood 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%

Source: Primary: Data, 2020

Table 4.4 shows a low positive degree of relationship between Ubudehe categories and internal efficiency ($r = .157, p = .002, N = 406$). This indicated that improve in Ubudehe category will also improve internal efficiency of primary schools in Western province of Rwanda.

Table 4.4 also shows that there is a strong negative degree of relationship between extent to which pupils miss schools because of school materials and facilities and internal efficiency ($r = -0.943, P = .004; N = 406$). This means that continuous absent from schools due to the lack of school materials and facilities has reduce internal efficiency of schools in Western province of Rwanda.

Taking meal into account, the Table 4.4 shows a low positive degree of relationship between the extent to which pupils' take meal and internal efficiency of public primary schools ($r = .114, P = .004; N = 406$). This means that increase of numbers of pupils who take breakfast begore going to schools and numbers of pupils who takes Lunch at schools will help to improve internal efficiency of public primary schools in Western province of Rwanda.

Table 4.4 also shows that there a low negative degree of relationship between extent to which pupils looks after family animals on school days and internal efficiency of schools ($r = - 0.164; P = .000 N = 406$). This means that increase in the number of pupils who looks after family animals on school days reduce internal efficiency on public primary schools in Western province of Rwanda.

Last not the least, the Table 4.4 also shows that there is a low negative degree of relationship between extent to which pupils collect firewood and fetch water for domestic use on school day and internal efficiency ($r = - 0.151, P = .002; N = 406$). This means that the increase in the number of pupils who collect firewood and fetch water for domestic use on school days reduce internal efficiency of primary schools in Western province of Rwanda. These findings collaborated with the findings presented by Hynes and gill (2018), UNESCO (2014) and UNICEF (2013). The role of parental incomes internal efficiency (Drop out and repetition rates) were also established in the data collected as presented in the Figure 4.4.

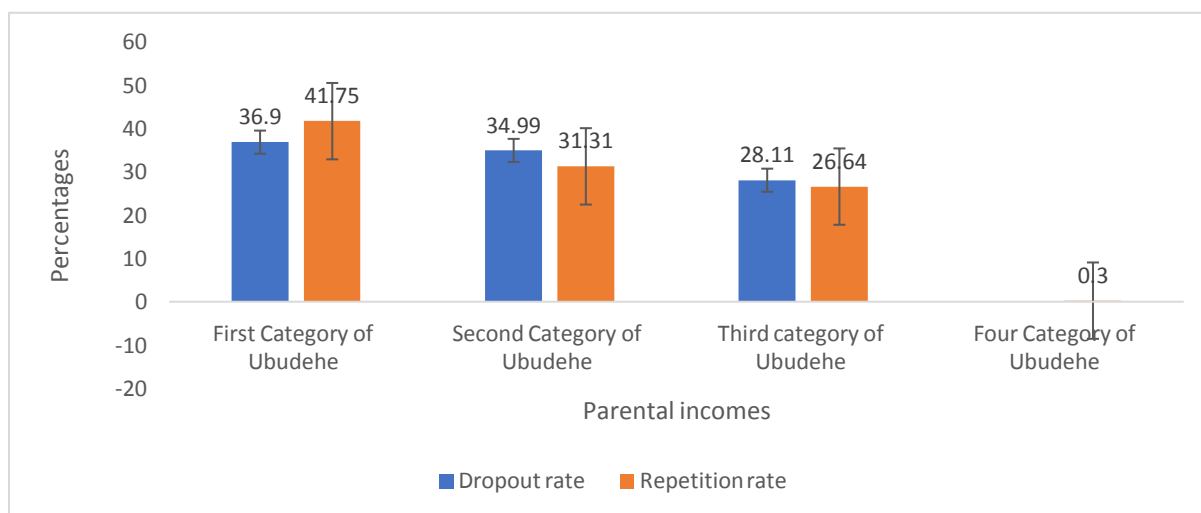


Figure 4.4 Influence of Parental Incomes on Internal Efficiency (Dropout & Repetition Rate)
Source = Primary Data, 2020.

Figure 4.4 shows that majority of pupils who dropped out of school were from first and second category of Ubudehe. This was indicated by (36.9% & 34.99%) first and second category of Ubudehe respectively. Based on the characteristics of each category of Ubudehe, households allocated in the first and second categories are very poor. This means that dropout rates are very high among pupils whose families have low incomes levels. 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. The Figure 4.4 also shows that majority of repetition rates were very high among pupils whose families were in the first and second category of Ubudehe. This was indicated by (41.75%; 31.31%) for first and second category of Ubudehe respectively. This means that repetition rates decrease with increase in parental incomes levels. These findings collaborated with the findings presented by MINEDUC (2017) & UNICEF (2017) that repetition rate is very high among the pupils whose households are in the lowest quantiles of income. Last not the least the findings from regression analysis were also established. Model summary Analysis of Variance and regression coefficient.

Table 4.5 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.568 ^a	.322	.265	.637529

- a. Predictors: (Constant), Parental Incomes
- b. Dependent Variable: average marks scored by pupils in %

Source: Primary Data, 2019

Table 4.5 present model summary. It shows R= .568, R square equal to .322, adjust R-square .265. and Std. Error.637. Coefficient of determination also known as R-square equal 0.568. This means that the combined effects of parental incomes explain 32.2 percent on internal efficiency of public primary schools in Western province of Rwanda. These findings were supported by the findings presented by Deguzman and Gallardo (2017) who established that low income of the pupils’ families is a key challenge to teaching and learning process because it creates unfavorable learning conditions of the children because majority of children’s needs remain unsatisfied therefore dropout of school prevails.

Figure 4.6 Analysis of Variance

ANOVA TABLE						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1469.269	9	163.252	4.032	.000 ^b
	Residual	16035.342	396	40.493		
	Total	17504.611	405			

- a. Dependent Variable: average marks scored by pupils in %
- b. Predictors: (Constant), Parental Incomes

Source: Primary Data, 2020.

The significance of regression model was computed using analysis of variance as presented in the ANOVA TABLE 4.6. which shows that regression model was significant at .000<.05. The significance of the regression model was tested using analysis of Variance (ANOVA). This Tells us that it wasn’t computed by chance. This made the results of regression model credible and reliable.

Table 4. 7 Regression Coefficient

Model	Regression Coefficients				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	51.596	2.906		17.755	.000
Ubudehe category	1.147	.409	.145	2.806	.005
Extent to which pupils miss school because of school materials and school facilities.	.384	.412	.054	.932	.352
extent to which Pupils take break fast	-.194	.262	-.039	-.739	.460
extent to which Pupils take lunch	.649	.265	.125	2.446	.015
Extent to which pupils care for siblings on school days	.081	.249	.018	.325	.745
extent to which pupils looks after family animals on school days	-.768	.296	-.134	-2.597	.010
Extent to which pupils collecting firewood on school days	-1.008	.472	-.113	-2.136	.033

- a. Dependent Variable: Internal Efficiency
- Source: Primary: Data, 2020

Table 4.7 shows that Ubudehe category is significant to explain change on internal efficiency as indicated by (Beta = .145 P= .005 N= 408). This means that increase in Ubudehe category by one unity will increase 0.145 unit on internal efficiency. Extent to which pupils takes lunch was also significant in explaining

internal efficiency as indicated by (Beta = .125, P = .015; N= 408). This means that increase in the number of pupils who take lunch by one unit increase 0.125 unit on internal efficiency. The extent to which pupils looks after family animals was statistically significant in explaining internal efficiency as indicated by (Beta= -0.134; P= .010; 408). This means that increase in the number of pupils who looks after family animals on school days by one unit will reduce 0.134 unit on internal efficiency. Furthermore, the extent to which pupils collected firewood for domestic use on school days shows significant influence on internal efficiency as indicated by (Beta = -0.113; P = .033, N= 408). This means that increase in the numbers of pupils who collect firewood on school days by one unit reduce 0.113 unit on internal efficiency in Western province of Rwanda. This tells us that parental incomes influence internal efficiency of of public primary schools in Western province of Rwanda. These findings were against the findings presented in Tokyo, Japan by Machebe, Ezegbe and Onuoha (2017) revealed that there is no significant relationship between parental incomes on students' dropout rate in Tokyo. This might be true because Japan is a developed county where income of the parents has no effects on student academic achievement because the country keeps on developing its learning institutions

V. CONCLUSIONS

Based on the findings presented in study, it was concluded that there statistically significant relationship between parental incomes and internal efficiency of public primary schools in Western province of Rwanda. Government of Rwanda should put in place some measures to improve the system for identification and monitoring of pupils who are in the risk to drop out or repeating of the schools. This can be done through the improvement and implementation of education management information system (EMIS); setting up referral pathways to identify and follow up children who are likely to drop out of the school and those with special needs education in Western Province of Rwanda. Furthermore, the government should put in place measures to improve parental incomes.

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