Influence of Households' Educational Expenditures on Students' Participation Rates in Public Boarding Secondary Schools in Rwanda

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Abstract

Purpose: The households in Rwanda provide the share of their budgets to education expenditures through spending on public boarding secondary schools. The households of students in public boarding secondary schools consider education a luxury implying that they care about the quality of their children's education. This means that education seems to be a necessity item for households as they play a significant part to improve the participation of their children in public boarding secondary schools. This purpose of this paper therefore, was to determine the influence of households' educational expenditures on students' participation rates in public boarding secondary schools in Kicukiro and Ruhango districts in Rwanda.

Materials and Methods: The study was guided by correlation research design. The target population was two Districts Education Officers (DEOs), 10 school head teachers and 4382 students corresponding to 2186 parents. Yamane formula was established to get a sample of 252 students and 126 parents while DEOS and school head teachers were selected purposively. Questionnaire, guided interview and education document analysis were used as research instruments used during data collection.

Findings: Through data analysis, the findings show that that cost of girls' school materials is 10% higher than that of boys and this burden to households to educate girls in boarding schools than boys. In terms of household average educational expenditure in public boarding secondary schools, the study revealed that the household education cost is 165,427Rwf for girls and 156,794Rwf for boys. However, parents of children in schools of urban areas pay 12.6% higher compared to parents of children in schools of rural areas on school fees. The study recommends that study found that, the household spends an average of 10,273 Rwandan francs and the maximum of 40,000Rwandan francs on transport per term.

Conclusion: The study established that an average of 157,452 Rwandan francs given by government to each student per year in public boarding secondary school is too little compared to household educational cost to a single student that pays 558,900 Rwandan francs per year. The results conclude that there are changes in terms of items related to the cost of education. Based on calculating the cost of education study revealed that parents of girls in boarding secondary schools and parents of children in schools located in urban areas pay a high cost of education especially in terms of school materials and transport.

Key Words: Households: Education expenditures: Students' participation: Public boarding secondary school:

I.   INTRODUCTION

Since education is viewed as an investment, there is need to consider the cost involved. Educational cost is taken as an amount that a student, an institution of learning or the public has to spend up to educate an individual or a group of people (Joel, 2018). The cost provided to any economic activity performed, could be valued in various ways in which all stakeholders take into consideration of such activities done in terms of education.

According to Kumar (2004), in consideration of cost of education, private cost of education should be mostly emphasized. Kumar (2004) revealed that private cost of education is considered to be one of educational expenditures incurred by parents or relatives like school fess, lunch fees, and teachers' bonus fees, transport fees from household to school, pocket money, student materials and school uniform in order to improve the equitable access to education.

Globally like in Pakistan, the participation of students to schools is associated with income of parents where high-income youths usually channelized into high school preparatory courses (Memon & Muhammed, 2018). This implies that, the higher the income of parents, the greater the demands for students' education. According to Ghuman, *et al* (2019), parents with high income are ready to pay considerable amounts of money to enable their children participate in various education activities in case there is the absence of state support. The private cost of education or the cost of education spent by parents or guardians has the crucial role in the determination of access to education and various courses as well as raising the completion rate of education level and reducing dropout rate (Roger *et al.,* 2016).

In Africa, Tansel and Bircan (2014), presented that households or parents' educational expenditures can influence student participation due to their capacity of income where the completion and dropout rate of students can be affected by households' income. Education participation of students in secondary school in Sub-Saharan Africa (SSA) is lower than any other region of the world due to facing various problems related to the socio-economic status in such countries to help students to get effective education. Therefore, there is still a lack of students' access to secondary education, which is increasing, and this led to the lack of ability to citizens to improve effective economic growth and development strategies that help the governments to fund their community and to get an opportunity of expanding secondary education (World Bank, 2017).

Despite such support of international development, assistance has reduced in the range of 28 out of 46 Sub-Saharan African Countries (SSAC) which was done between 2002 and 2016 for increasing the equitable access to education in such countries (Asma & Pauline, 2018). According to United Nations Educational Scientific and Cultural Organization (UNESCO, 2018), domestic education expenditure has been done due to the government GDP which was increased from 3.8 percent to 4.3 percent between the periods of 2000 to 2017 for Sub-Saharan African governments.

In Rwanda, UNICEF (2018) established that the number of students enrolled in lower and upper secondary schools rose from 486,437 to 592,501 between 2011 and 2017,8 reflecting an increase of 21.8 per cent over the past six years. Over the past two years (2016 and 2017), the net enrolment rate realized an increase from 28 per cent in 2015 to 34 per cent in 2017. This increase can be attributed to government efforts to strengthen 9YBE and 12YBE and strengthened school feeding programmes across all secondary schools, including non-boarding schools, among other measures. Drop-outs in secondary schools were reduced significantly in the past five years but increased in public boarding secondary schools, from 11.6 per cent and 14.7 per cent in 2013 to 5.2 per cent and 4.4 per cent respectively in 2016. According to the Ministry of Education (2018), the inadequate of students' participation in public boarding secondary school is associated with low income of parents' children. This paper therefore, was motivated to determine the influence of households' educational expenditures on students' participation rates in public boarding secondary schools in Kicukiro and Ruhango districts in Rwanda.

II. LITERATURE REVIEW

The literature review of this paper presents the literature review based on various costs of education incurred by households to finance education of their children in public boarding secondary schools.

School fees as the cost of education

The cost of education spent as the school fees of the student, refer to the fees incurred by parents or households, guardian or relatives to help a child to attain the school instruction as well as the school instructional materials provided (Anang, 2018).

Muthuri and Kirera (2018) conducted the study in Kenya, in which they examined both internal and external school factors that can affect the student' participation rate in primary school. They were having three research objectives such as to determine the influence of academic performance in Kenyan certificate of primary education on student' completion rate, to determine the influence of parental educational level and students' completion rate and also to examine the impact of students tuition fees on completion rate of students in primary (Muthuri & Kirera, 2018).

The study findings presented that, most of students in primary school do not complete primary school accordingly so as to start Secondary School due to poor learning conditions caused by the lack of school fees or low financial capacity of households. It was also presented that, students who come from families that could not support their academic endeavors, failed to access secondary schools (Muthuri &Kirera, 2018). Therefore, the study revealed that the low financial capacity of households affects their children to have full academic participation in secondary school due to the lack of school fees. It was recommended that the government should support the students who are not able to complete their primary education to be aware of attending secondary education. The study also recommended that the government should provide some financial supports to the families that are not able to pay school fees of their children as well as other additional educational

expenses (Muthuri & Kirera, 2018). This shows that the study could not describe the extent to which financial requirement influence the students' participation and it was taken as the knowledge gap.

Wamalwa and odebero (2016) conducted another study also in Kenya, which was entitled as the influence of educational cost on student' performance. The study collected the findings from teachers as the respondents of the study, in which they stated that, school fees needed to finance education in secondary school, is taken as one of the factors that can influence the   student performance (Wamalwa & Odebero, 2016). Through the presentation of the correlation between school fees and students' performance, but the study failed to present the extent of such correlation. Therefore, this study complemented these findings through presenting the extent to which the students' school fees correlate with the students' participation rate in public boarding secondary schools.

The cost of school uniform as the cost of education

The cost spent to buying the school uniform, can pull, or push the student from schooling. Anang (2018) conducted the study in Ghana, which was related to the cost spent to education in terms of buying school uniform and few issues that were identified in the respect of research idea. The study was also guided by three research objectives such as to determine both internal and external factors pulling and pushing students to out of school. Secondly, to examine the reason why some students do not get effective access to schooling as well as to present the ways through which schools resolved the problems related to high level of dropout rate within public secondary schools.

Therefore, the finding of the study conducted by Anang (2018) presented that he households as the primary stakeholder of education sector, were not aware of providing the costs spent to school uniform and it was taken as the household factors that have an impact on students' access, students drop out rate, students' performance as well as students completion rate. Through the recommendations which were presented in the study that was conducted by Anang (2018), it was state that, the cost which was needed to have full access to education, might me listed and planned in accordance with household financial capacity and also should be implemented equally in all school setting. The households should also be involved in decision, taken to their children's education and also monitoring as well as evaluation, which might be strengthened so as to have access to schooling which can also result to high students' performance and students' completion as well as the reduction of students' dropout rate (Davies, 2015).

The study, which was conducted by Ananga (2018) did not present the conclusion related to the point, which were supposed to be evaluated, as making the establishment of the costs related required to having the school uniform that could weaken the students' participation rates. The study had also requested that, the households have to be involved in their children's education without quantifying what they should pay or not. Moreover, the study came up to make the bridge related to the knowledge gap, through making the determination on the extent to which costs paid by the households in terms of school uniform, can also affect the student's participation rates done in terms of students' access, drop out, students' performance as well as students completion in public boarding secondary schools.

Davies (2015) conducted the similar study in England. The study used a telephone survey during data collection to examine the cost spent to school uniform. The findings presented that, the students in school setting, were obliged to wear the school uniform. However, the households agreed that, the costs requested to school uniform, increase as students educational background from primary level up to lower and upper secondary level due to the fact that in the latter level, students required some specialized in terms of school uniform (Reed, 2017). Despite the same study, which was conducted by Anang (2018) failed to meet the cost of school uniform and students' participation rate. In addition, the study findings need to be confirmed by the school administrators who could really examine their impact on the requirement of teaching and learning process for the purpose of ownership and authentication. Nevertheless, the present study, sought to find out the school uniform costs spent and students' participation rate to fill the gap. It was triangulated ideas from households and the school leaders to shape out, the possible influence of such uniform costs on students' participation rate in public boarding secondary schools.

Gentile and Imberman (2015) conducted the study which was related to the effect of school uniform on students' achievement as well as behavior of students studying in middle and high schools in United States of America (USA). The study, which was done, focused on student and school fixed effects a long with school. Specific linear regression trends and findings presented that the school uniforms could generate various improvement in attendance and high schools in USA. This implies that, the study did not present the effect of school uniform on student access, drop out, students' performance as well as students' completion. Gentile and Imberman (2015) also ended by concluding that, the school uniform could be used as a tool for keeping the students at school environment. This also shows that, the higher cost of school uniform, may reduce the level of students' dropout (Reed, 2017). Since the effectiveness of students' achievement is taken as the mixture of different indicators, this study used the multiple regression model so as to determine the influence of the costs

spent to school uniform as incurred by the households on students' access and performance as well as students' completion rate (Gentile & Imberman, 2015).

Reed (2011) conducted another study opposed to what was developed by Gentile and Imberman (2015) in which the study employed a mixed method research design to evaluate the effect of school uniform policy on an urban school location. This implies that, the study ignored to evaluate how the school uniform policy can influence the students' participation rates among the schools located in rural areas.

Reed (2017) also stated that, the school uniform should not be related with the students' behavior at high level. This presents that the school uniform should not be one of the indicators that can reduce the indicators that can reduce the student behavior in the school setting that can also lead to the reduction of students' participation rate in classroom setting. Therefore, this study combined the data provided by both school leaders and households to present the relationship between the cost spent to school uniform and students' participation rates in secondary school.

The cost of transport as the cost of education

Transport cost in education, is taken as the costs incurred by the households, guardians or relatives of the student to help him or her to move from home to school to have full access to education. According to Mason and Roselle (2020), the costs provided to transport of students from home to school, may lead to the reduction of the students' participation rates. Specifically, the students that are living far from the school location, where transport is necessary and it may become an obstacle specifically to the students coming far from the families whose low economic backgrounds that may not help them to be able to afford such required expenses (Mason & Roselle, 2020).

Sigei and Tikoko (2016) reflected that the costs incurred by the households to transport as an issue that can affect the students' participation rate especially in secondary schools. The study conducted by Segei and Tikoko (2016) employed descriptive research design to examine the effects related to the costs provided to transport on students' participation in which the study presented that such cost of transport, reduce the students access, performance as well as completion rate in public day secondary schools in Kenya. The respondents of this study confirmed that, the students' participation rate was specifically caused by long distance located from the students' homes to their attended schools (Segei & Tikoko, 2016). The respondents of the study also added that, the lack of students' transport by households from home to school, may lead to students to have lower level of participation in secondary schools. The study also recommended that, households, guardians and relatives of the children, should fulfill their roles effectively towards to helping the students to reach their respective schools on time and regularly (Segei & Tikoko, 2016).

Similarly, Njoroge (2019) recommend that, the government of Kenya should develop the best policies that might help the students to have full access to education. Nevertheless, the study had two important knowledge gaps such as the lack of help to investigate the possible causes of students' dropout in secondary schools and being not aware of identifying the financial causes behind the registered students that can lead to lower level of students' participation rates (Njoroge, 2019). This could lead to examining various financial causes as well as describing the level through which the costs spent to students' transport affect the students' participation rates.

Mugoro (2021) examined the issues meet by students in terms of transport and their respect effects on students' attendance in secondary schools in Tanzania. The researcher employed descriptive research design and questionnaire as well as guided interview to collect the data from the respondents of the study such as students, school deputies in charge of studies and discipline and the school head teachers as well as parents whose children in respective schools. The findings, which were collected from the students, presented that 46 percent of the students were going to school without any transport support from their parents, guardians or from their relatives (Mugoro, 2021). Despite, the small number of parents who were one of the respondents presented that they were provided the actual costs needed to transport their children to reach their respective schools. The questionnaire, which was used as the research instrument, was having the most concern in the study while getting the views of the research participant on the questions needed to be examined rather than evaluating the quantity related to transport costs that could also had various influences on students' attendance.

Nevertheless, the study which was conducted by Mugoro (2021) did not focus on the indicators related to the students' participation like students' access, students' dropout, students' performance as well as students' completion. Therefore, this study presented the perceptions from parents or households whose children in public boarding secondary school to explain the correlation between the costs insured by parents on transport as the cost of education and students' participation rates.

Njoroge (2019) conducted another study entitled as the influence of educational costs on students' academic performance in public primary school. Basing on the findings of the study which were collected, the school head teachers presented that, the students who come far from the school location, can be affected in terms of having effective punctuality. However, the study presented that, the poverty found in some families, do not adopt their children to pay the cost of transport needed to have academic field trip where the study presented that, only 3.3 percent of pupils' respondents can afford the costs incurred by parents or household to transport

(Njoroge, 2019). However, this study combined the data from the District Education Officer (DEOs), the school head teacher as well as students and their parents or households where the recent study ignored to involve parents, whose the high quality of perception related to the students expenses spent in terms of transport. However, the study was also not aware of meeting the transport cost with the students' participation rate.

Asahi (2014) attempted to make some identifications and quantifications related to the influence of better transport of accessibility on students' academic performance in United Kingdom (UK), by employing mathematical models. The study stated that, there was a big issue between the student performance and the distance between the student home and school. The findings of the study also perceived that perceived that the distance between students' home and school, can affect the students to having low scores in school exams. This implies that the higher the students use long distance going to school from home and vice- versa, the lower the student gets the standard academic performance or low student participation rate. Nevertheless, the mathematical modal which was employed, did not involve the perceptions from the school head teachers and parents whose significant information related to the issues of transport from home to school and vice versa. Despite, Mutegi (2015) established that parents of girls spend more money on transport than parents of boys while travelling from home to school or in related schooling activities.

The cost of school materials as the cost of education
The school materials refer to such tools necessary use for students to attend the school activities. Such student' materials include pens, note books and students' textbooks as well as boarding materials like mattress, soap and shoes and also other materials like spoon and plate.

The study, which was conducted by farthering (2021) it was related to the cost of the school materials. The study which was developed, employed online survey research design so as to get the findings of the study in which the researcher asked various series of questions which were related to the cost of materials incurred by the households for the purpose of providing educational support to their children to attend school. The respondents of the study confirmed that 21 percent of the students could not get the required textbooks as well as note books to fulfill their academic activities as well as other appropriate materials needed to perform various school activities.

Carlos (2019) conducted the study, which was related to the cost of schooling materials provided by the households or parents in Tanzania. The study examined the factors that can discourage the participation of parents in in the development of the school activities. To solve the research questions as well as achieving the research objectives, the researcher employed the research instrument such as Focus Group Discussions (FGDs) and guided interview. The findings presented that, a big number of parents or households do not perform their duties that can support their children to participate in school' activities as well as school instructions (Carlos, 2019). However, there was some parents who tries to perform their academic responsibility, though, they get insufficient school materials needed by their children and this, can become one of the obstacles that can affect the students' participation rates especially in secondary school.

Asma and Pauline (2018) stated that the level of the students' school materials availability, can affect the students' participation to schooling activities due to the fact that, it was very hard to some families or households to get financial means that can be used to finance their children's education and to provide the required materials needed at school. Muthuri and Kirera (2018) conducted another study, which was related to non-academic factors that can affect the effective students' participation rate, which is also determined, by the student access, student dropout and performance as well as students' completion. The study had focused on students' progressiveness cycle in school and revealed that financial means used to get the school materials, had a significant effect on student's participation. Despite, the study ignored to consider the capacity of the households as the one, which can determine the costs that could be spent to school materials to enhance the students' participation.

The cost of lunch as the cost of education
Williams (2019) conducted the study in Pakistan, which was related to how a student can get lunch qualitatively and quantitatively. The study employed both quantitative and qualitative approaches and also used Focus Group Discussions (FGDs), questionnaire and interview guide, that were also taken as the instruments of the study to examine educational costs spent by parents or households in the provision of lunch at boarding school to be given to their children. Therefore, the study revealed by questioning the four main questions such as what are the school level costs incurred by households? Secondly, in what ways do the educational cost influence the participation of students to schooling? Thirdly, what is the effect of education cost on the related households and the community in general? Fourthly and the last question, how do the households meet financial requirement related to the students' lunch at school especially in boarding? (Williams, 2019).

The researcher indicated that, however, the households keep financing education of their children in terms of school lunch, but it was still a burden to many households whose low socio-economic status. Despite, such

cost of school lunch as the cost of education, had consequently affected the participation of their children requested to afford boarding school with in different ways of educational development.

Williams (2019) also recommended that the educational planers should reshape the educational policy that could guide the better feeding of children in all levels of education to improve educational productivity and support the households that cannot afford the required costs of education. They also added that education planners can also reconstruct a new school feeding program policy strategy and also developed high initiatives related to making strong monitoring and evaluation system for boarding school lunch policy so that the participation of students cannot be affected (Joma *et al.,* 2017).

Joma *et al.* (2017) carried out another study in Nigeria that was related to programs of school feeding in developing countries to find out the effect that can come on children's health and educational achievement. Joma *et al.* (2017) also revealed that, there is a positive effect of school feeding on children's health and educational outcomes. However, the study did not provide clear conclusion and recommendation of what can be done to keep improving the children health and education outcomes.

According to Mhurch *et al* (2018), the provision of well-completed lunch having all nutrients, improves the students' class attendance, getting high academic achievement and reduce short and long-term hunger that can also lead to the effective physical, emotional, social, mental and psychological development of a child. However, Mhurchu *et al.* (2018) also indicated that, there was no statistical significance that was found between school feeding program and students' achievement or any other education outcome that can be found.

Teachers bonus as the cost of education

According to Choi (2018), the cost of education spent as bonus given to teachers and taken as the cost used to motivate teachers in their teaching load. Bray (2019), indicated that teachers' bonus was established so as to improve the academic levels expressed by students and taken as teachers' incentives that motivate teachers to promote students and teachers' performance in teaching and learning activities. According to Kingdom and Teal (2015), households are the one to be pretended to have financial capacity that could be used to support the students learning condition through teacher's motivation do through providing teachers bonus as the cost of education. However, some households present economic inequalities that may also lead to educational inequalities.

Choi (2018), tried to quantify the effect of teacher bonus on both students' participation and academic outcomes. Choi (2019) also indicated that teachers' bonus should bridge the students' performance gap however, the teachers' bonus may come as a challenge to households who have low financial capacity to enroll their children where they pay teacher bonus. Kingdom and Teal (2015) also indicated that the cost paid as teacher bonus has a significance relationship between students' performance, students' completion as well as school performance. However, the study did not state the clear conclusion and provision of recommendation that indicate what should be done to improve students' performance and completion rate without making teachers bonus as a burden taken by households who need the participation of their children in boarding schools.

Zhan *et al.* (2019) conducted the study that entitled as the effectiveness of teachers' incentives in school development in Hong Kong by using guided interview. They study revealed that, the provision of teachers' incentives like teachers' bonus was more significant to support students and teachers' performance. However, the teachers' bonus incurred as the cost of education that varies due to the historical background of school that also comes as a challenge to households that present low socioeconomic status (Zhan *et al.,* 2019). However, the study did not indicate how teachers' bonus could affect children who come from families with low financial capacity. In addition, the study also did not present the extent in relationship between the cost given as teacher bonus and students participation in boarding school.

III. METHODOLOGY

This paper employed correlation research design to determine the relationship between education expenditures and students' participation. The target population was 6580 people including 2 district education officers, 10 school head teachers and 4382 students corresponding to 2186 parents. Yamane formula was used to get the manageable sample size. Stratified sampling technique was also used to select a sample size of 252 students and 126 parents while the schools head teachers and district education officers were selected purposively. Questionnaire, interview guide and guided document analysis review were used as research instruments during data collected and were administered to the respondents of the study. Responses from the respondents were evaluated and then respondents were interviewed to ascertain their view on the quality of the questionnaires. The study used SPSS version 21 software in data management.

IV. FINDINGS AND DISCUSSIONS

This paper was developed to determine the influence of households' educational expenditures on students' participation rate in public boarding secondary schools in Kicukiro and Ruhango districts in Rwanda.

School fees as a cost of education

School fees is one households' educational expenditures and considered to be one of compulsory costs incurred by households of children in public boarding secondary schools in Rwanda. In this case, every student is required to pay the school fees as established by school administration. Therefore, it was interested in this paper to establish the amount of money that a single household spend on school fees of their children to full access to boarding secondary schools by class level of students, school location and socio-economic status (ubudehe category) of children' families.

The students were requested to establish the amount of money that they spend on school fees. on the mode of paying the school fees to boarding school, some parents revealed that it burden to them to pay the full required school fees due to their socio-economic status which is low. However, other parents indicated that they could not see any problem in school as their children get better education in boarding school. The Chi-square test, on the other hand, was created to see whether there is a connection between school fees and students' access to boarding school education. The analysis of the cost incurred by a single household to school fees by students' class section was very important in this study. This was guided by the methodology of public boarding secondary schools in Rwanda.

Table1: School fees by students' class level

Students' class level	Observations	Mean	Std. Dev.	Min	Max
Lower secondary	92	87666	2254	83500	90000
Upper secondary	155	112923	21472	93000	137000

The findings in the Table1 presents the amount of school fees incurred by households in every term of school calendar in selected public boarding secondary schools in Rwanda. The findings show that on the average of students in lower secondary pay 87,666Rwandan francs and students studying in upper secondary pay 112923 Rwandan francs. This implies that students studying in upper secondary schools are more likely to pay a lot of money in term of school fees and can influence negatively the level of students' access and completion thus the students studying in upper secondary school spend 12.6% on school fees more than students studying in lower secondary school do. Muthuri and Kirera (2018) revealed that children coming from families that do not afford boarding school get risk of missing education provided and life confidence. However, Glick (2018) indicated that the advantage of households' income is to have well educated and wealthier children.

The paper was also interested to establish whether there are amount of school fees differential in relation with students' school location. The researcher was interested to establish an analysis amount of school fees incurred by household as a way of establishing the financial management of households and school administration in urban and rural areas.

Table2: School fees by school location

school location	Observations	Mean	Std. Dev.	Min	Max
Urban areas	76	110986	16332	83000	135000
Rural areas	171	104795	22680	91000	137000

The Finding in Table2 present the average amount of money of school fees per term among students studying in selected public secondary schools located in urban and rural areas of Rwanda. The findings reveal that students studying in Kigali city as urban area of Rwanda spend an average of 110,986 Rwandan francs on school fees while students studying in schools located out of Kigali city as rural areas of Rwanda spend 104,795 Rwandan francs. This implies that students transferred to study in schools located in urban areas (Kigali city) are more likely to spend a lot of money on school fees as they pay 2.86% than students studying in rural areas of Rwanda. This was supported by Orodho (2013) revealed that the cost of education may vary due to school environment and the quality of education delivered. This means that the cost of education may vary by school environment.

The further analysis sought to examine whether there is an association between school fees provided in public boarding secondary schools and students' access to education. The results are presented in the Table3.

Table3: Chi square test of school fees and student' access to boarding school education

| Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.963[a]	16	.000
Likelihood Ratio	45.411	16	.000
Linear-by-Linear Association	2.150	1	.143
N of Valid Cases	247		

a. 13 cells (52.0%) have expected count less than 5. The minimum expected count is .71.

The findings in Table3 Presents the Chi-square tests performed to indicate whether there is an association between school fees incurred by households in public boarding secondary schools. The results show that there should a violation of school fees to students' access to education at 52%. However, the results also indicate that there is a degree of association between school fees and students' access to public boarding secondary schools as Asymp. Sig. (2-sided) = .000 less than .05 level of significance with the likelihood ration of 45.411. This also implies that the lack of effective management of school fees incurred by households may have an influence on students' access to education. Mulkeen (2017) conducted the study in Sub-Saharan African Countries (SSAC) and revealed that the household financial capacity determine whether, their child might full access to education and improved school productivity. This implies that student' access to education is proportionally associated with financial capacity of their parents.

School lunch fees as the cost of education

The further analysis sought to establish the average amount of money incurred by households as one of educational expenditures of their children. The provision of school lunch fees can influence students' participation in public boarding secondary schools. Therefore, the analyses in this study indicate the average amount of money spent on boarding school lunch by school name and school location. The school head teachers indicated that the cost of boarding school lunch may vary from one school to another and area of school location (Urban and rural areas). Despite, the government spends 56 Rwandan francs per day to each child as the cost of boarding school lunch and the part of payment households is included in school fees though, it needed to presents its cost particularity. However, this paper needs also to establish whether there is an association between lunch fees and student' performance and student' performance by socio-economic status of students' households. In this case, Chi square tests were performed.

Figure1: Boarding school lunch fees by school name
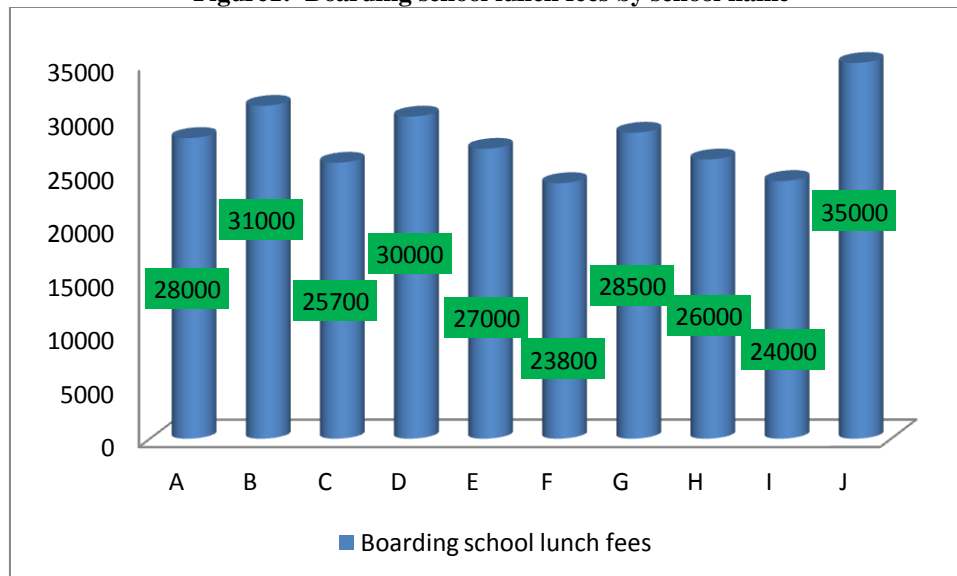
The findings presented in Figure1 show the amount paid by households whose children in selected public boarding secondary schools and the findings are presented school per school as the school head teachers revealed that each boarding school has identical lunch fees. It is clear that the minimum boarding school fees is 23,800 Rwandan francs and the maximum boarding school fees is 35,000 Rwandan francs. The school head teachers indicated that the presented school lunch fee is charged per term as the government also add 56 Rwandan francs per child every day to cover the cost of lunch incurred by households in boarding school.

Table4: Chi-Square Tests of lunch fees and student' performance

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	166.349[a]	16	.000
Likelihood Ratio	135.043	16	.000
Linear-by-Linear Association	81.388	1	.000
N of Valid Cases	247		

a. 16 cells (64.0%) have expected count less than 5. The minimum expected count is .13.

The findings in Table4. Presents the Chi-square tests that were perform to indicate whether there is an association between boarding school lunch fees and student' performance. The results show that there should a violation of lunch fees to students' performance at 64%. However, the results also show that there is a degree of association between boarding school lunch fees and student' performance as Asymp. Sig. (2-sided) = .000 less than .05 level of significance with the likelihood ration of 45.411. This implies that the lack of effective management of boarding school lunch fees incurred by households have an influence on student' performance to boarding school activities. Williams (2019) Supported that there is a negative relationship between boarding lunch fees and student' school outcomes. This implies that every increase in school lunch affect negatively the performance of students in various schools activities.

The amount of boarding school lunch incurred by households as the aspect of educational cost in boarding school varies by location of school. The results are presented in Table4.

Table5: Lunch fees by student' school location

School location	Observations	Mean	Std. Dev.	Min	Max
Urban area	2	33000	2828	31000	35000
Rural area	8	26625	2173	23800	30000

The findings in Table5 present the amount of money incurred by households on boarding school lunch due to school location. The results indicate that households of children transferred in school located in urban areas (Kigali city) spend an average of 33,000Rwandan francs to boarding school lunch given to their children. On the other, parents of children in rural areas of Rwanda spend an average of 26,625 Rwandan francs. This show that parents of children studying in boarding secondary school located in urban areas of Rwanda spend 10.7% of boarding lunch fees more than parents of children enrolled in schools located in rural areas of Rwanda. Watkins and Alemayu (2012) supported that the school lunch fees depends on the life style of the school located. This implies that schools located in place where life style is very expensive, leads to make the cost of education more expensive.

The households revealed that getting lunch from boarding schools enable their children to perform effectively various school activities and having well managed discipline. Therefore, this sought to establish Chi square tests in order to find out whether there is an association between students' performance and households socio-economic status that determine whether a family is able to afford the cost of boarding school lunch or not. The results are presented in Table6.

Table6: Chi-Square Tests of students' performance and households socio-economic status

Chi-Square Test			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.805[a]	12	.001
Likelihood Ratio	36.242	12	.000
Linear-by-Linear Association	5.596	1	.018
N of Valid Cases	247		

a. 11 cells (55.0%) have expected count less than 5. The minimum expected count is .32.

The findings in Table6 presents the Chi-square tests that were perform to indicate whether there is an association between student' performance and households' socio-economic status. The results show that there should a violation of households' socio-economic status to students' performance at 55%. However, the results also show that there is a degree of association between households' socio-economic status and student' performance as Asymp. Sig. (2-sided) = .000 less than .05 level of significance with the likelihood ration of 36.242. This also implies that the lower level of households' socio-economic status may have an influence on student' performance to boarding school activities.

Cost of transport as a cost of Education

The cost of transport incurred by households is taken as one of direct cost associated to the cost of education in public boarding secondary schools. Students that participated in this study stated that the amount of transport got from their parents is combined with pocket money that they use to busy some items while going to boarding school or at home. In case, students are going from home to boarding school, that cost of transport is attributed to schooling in boarding school and therefore considered as direct cost of education. On the other hand, students also need other extra-money taken as pocket money given in a combination of transport. Therefore, parents responsible to finance education of their children incur the cost transport and pocket money of their children in their respective boarding schools. Students were requested to indicate the total amount of money spent on transport while going to school every term of the academic calendar and pocket money got from their parents. The cost of transport and pocket money given as a sum, was disaggregated by gender, class level of students, age, socio-economic status (ubudehe category) of households, school location, and the cost of transport to these variables was presented to indicate whether they make any differentiation to cost of transport as the cost of education boarding schools. The cost of transport by gender is presented in Table7.

Table7: Transport cost by gender

Gender	Observations	Mean	Std. Dev.	Min	Max
Male	120	9950	8050	.00	30000
Female	127	10699	8497	.00	40000

The findings in the Table7, present the amount of money spent by households to as a transport cost of education by gender. It reveals that the cost of education spent to student' transport varies by gender where households of females enrolled in boarding schools spent a high cost of transport rather than males. The Table shows that the average cost transport to females is 10,699 Rwandan francs while male students spent the average cost of transport of 9,950 Rwandan francs. This implies that households of female students spend the cost of transport of 3.6% to boarding school than households of male students. This is also supported by the findings indicating that households of female students spend the maximum cost of transport. Mutegi (2015) supported that parents of girls in school spend more money to their children travelling to school than parents of boarding. This implies that student' gender influences the cost of education in boarding secondary schools.

Since the cost of education varies depending on the student's class level, this paper was motivated to look at transportation costs. This is to see how the cost of transportation for families varies depending on their children's class level.

Table8: Transport cost by student' class level

Student class level	Observations	Mean	Std. Dev.	Min	Max
Senior one	3	7866	3585	.00	12000
Senior two	10	8256	4528	.00	15000
Senior three	9	8577	6741	.00	20000
Senior four	32	10590	8856	.00	30000
Senior five	96	10791	8034	.00	35000
Senior six	97	11856	8544	.00	40000

The findings show that the cost of transport as the cost of education incurred by household changes by the change in student class level. This cost of education changes because parents combine the transport fees from home to school and pocket money to buy something needed for emergency. The table shows that the households of students in senior one, two and three spend less than 10,000 Rwandan francs on transport where they spend the average amount of 7,866Rwf, 8,256Rwf and 8,577Rwandan francs respectively. However, the findings in this table also reveal that average cost of transport in upper secondary varies per student class level where the average coast of transport to boarding school in senior 4, 5 and 6 is 10,590Rwf, 10,791Rwf and 11,856Rwf respectively. This also means that the cost of transportation to boarding school, which varies by class level, can have an effect on a student's boarding school completion. The Table8 presents an association between transport cost of education and student completion.

Table9: Chi-square test of student' transport cost and completion

	Chi-square test		
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.123[a]	16	.023
Likelihood Ratio	33.637	16	.006

Linear-by-Linear Association	6.992	1	.008
N of Valid Cases	247		

a. 5 cells (20.0%) have expected count less than 5. The minimum expected count is 2.21.

Table 9 shows the results. The Chi-square test was used to see whether there was a connection between the cost of transportation for students and their completion rate. The results show that there should a violation of households' socio-economic status to students' performance at 20%. However, the results also show that there is a degree of association between transport cost as a cost of education and student' completion as Asymp. Sig. (2-sided) = .006 less than .05 level of significance with the likelihood ration of 33.637. This also means that rising educational transportation costs will have an effect on students' attendance at boarding school.

Transport cost as the cost of education to boarding secondary schools was also calculated to indicate the differentiation of transport cost by age group and the findings are presented in Table10.

Table10: Transport cost by age

Age group	Observations	Mean	Std. Dev.	Min	Max
Below 15years	22	9000	7396	.00	30000
16-18years	160	10383	8474	.00	40000
19years and above	65	10436	8127	.00	35000

The findings in the Table also illustrate that cost transport to boarding school varies by age group of students. It is clear that the students aged below 15years pay an average cost of transport of 9,000 Rwandan francs while the students in age group of 16 to 18years spend an average cost transport of 10,383Rwandan francs and students aged from 19years and above spend an average cost of transport of 10,436 Rwandan francs. However, the findings also show that the students in age group of 16 and 18years are the one to spend 40,000 Rwandan francs as the maximum cost of education. Mutegi (2015) conducted the study on school transport cost by students' age and confirmed that the school transport cost varies by student age and stated that the increase in student' age, increases student' transport to school.

This study also sought to calculation the average cost of transport by socio-economic status of students' households as presented in Table11.

Table11: Transport cost of education by socio-economic status

Socio-economic category	Observations	Mean	Std. Dev.	Min	Max
Category one	10	7090	8564	.00	10000
Category two	49	9038	8307	.00	15000
Category three	144	10332	7636	.00	30000
category four	44	10852	8441	.00	40000

The Table11 illustrates the findings related to the average cost of transport as the cost of education to boarding school by socio-economic status (ubudehe category). It is revealed that the cost of transport varies by students' socio-economic status in their families where students in category one spend ten average cost of transport of 7,090 Rwandan francs while students in category two spend the average cost of transport of 9,038 Rwandan francs. The table also illustrates that the average cost of transport in category three spend the average cost of transport is 10,332 Rwandan francs while the students in ubudehe category four spend an average cost of transport is 10,852 Rwandan francs with 40,000 Rwandan francs as maximum cost of transport. According to Segei and Tikoko (2016), the financial capacity of households which leads to the lack of student' transport from home to school reduces school enrolment and other school opportunities.

The cost of transport to education in boarding school was also calculated by financing source to student as presented in Table12.

Table12: student' transport cost by financing source

Caregiver of school fees	Observations	Mean	Std. Dev.	Min	Max
Parents	202	10188	8129	.00	30000
Guardians	14	8428	5723	.00	28000
NGO	19	14310	10663	.00	40000
Sector	12	7466	7536	.00	20000

The findings in Table12 present the cost of transport as the cost of education by type of caregivers of student' school fees as financing source. It reveals that students financed by Non-Governmental Organizations (NGOs) spend a high average of transport of cost of 14,310 Rwandan francs followed by students financed by their parents with an average cost of transport of 10,188 Rwandan francs. The findings reveal that students financed by guardians and government decentralized to sector level, the average cost of transport is 8,428 and 7,466 Rwandan francs respectively.

The cost of transport as the cost of education to boarding secondary school was also calculated by location of school. The findings are presented in Table13.

Table13: Transport cost by school location

School location	Observations	Mean	Std. Dev.	Min	Max
Urban	76	12008	9441	.00	30000
Rural	171	9502	7599	.00	40000

The Table13 presents how the cost of transport varies due to school location. The table illustrates that students study in boarding school located in urban areas of Rwanda spend a high average cost of transport where they spend an average of 12,008 Rwandan francs as transport cost while students studying in rural areas of Rwanda spend an average cost of transport of 9502 Rwandan francs. This shows that there is a big differentiation of transport cost due to school transport as the students in school in urban areas spend 11.6% more than students in schools of rural areas of Rwanda do. However, it is clear that students in schools of rural areas are the one to spend the highest maximum cost of transport. Mugoro (2021) supported that socio-economic status of parents make them to enroll their children in local schools with free charge of school transport. This implies that school location play a significant role in students' participation, which changes due to cost of education incurred by parents.

Cost of school uniform as a cost of education

Student uniform is one of the requirements in school in Rwanda. Therefore, every student in boarding school is supposed to have school uniform. In this case, parents are supposed to incur the cost uniform as the cost of education. It is in this regard to calculate the amount of money spent and it vary from gender and school location. Therefore, students in boarding school were requested to indicate the amount of money they spend on school uniform. The findings of school uniform cost are presented in Table14.

Table14: School uniform cost by socio-economic status

Socio-economic category	Mean	Std. Dev.	Min	Max
Category one	12220.00	2402.22	10000	18000
Category two	14061.22	4203.41	12000	20000
Category three	18764.58	3762.08	14000	23300
category four	19372.73	2934.43	14000	28000

Table 14 shows the cost of a school uniform as a cost of schooling based on the socioeconomic status of the children's households. The findings show that the cost of a school uniform varies depending on the children's ubudehe group. The table shows that parents of ubudehe category one incur the cost average of school uniform of 12,220 Rwandan francs and 14,061Rwandan francs of parents in ubudehe category two. Table 4.22 also shows that a high cost of school uniform is paid by parents of ubudehe category four that pay an average cost of 19,372 Rwandan francs and parents of ubudehe category one that pay an average cost of 18,764 Rwandan francs. This means that parents buy the school uniform according to their financial capacity. Mutegi (2015) revealed that, in terms of school uniform by gender, parents with girls in secondary schools pay more money of school uniform for their children hence up scaling their cost of education.

The study sought to calculate the amount of money spent on school uniform as a cost of education to boarding school. In this case, the average cost of school uniform in schools located in urban and rural areas of Rwanda is presented in Table15.

Table15: School uniform cost by student' school location

School location	Observations	Mean	Std. Dev.	Min	Max
Urban areas	76	19565	3066	14000	28300
Rural areas	171	18331	3874	16700	24000

The Table15 illustrates that students studying in schools located in urban areas of Rwanda spend more money than students studying in schools located in rural areas do. The findings show that students enrolled in

urban areas spend 19,565 Rwandan francs to school uniform while students studying in rural areas spend 18,331 Rwandan francs. This also shows that enrolled in schools of urban areas spend 3.2% to school uniform than students enrolled in schools of rural areas do. According to Simitwa and Ayodo (2014), the cost of student' uniform in secondary schools varies from one school to another and due to the mark place of school location. This implies that market place of urban area is associated with high cost of commodities, which leads to making school uniform more expensive than in rural area.

This study also sought to investigate whether there is an association between the cost of school uniform as the cost of education and student' access to education in boarding secondary schools by using Chi-square test and the findings are presented in Table16.

Table16: Chi-square test of school uniform cost and student' access to education

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	78.463[a]	64	.105
Likelihood Ratio	89.407	64	.020
Linear-by-Linear Association	.013	1	.909
N of Valid Cases	247		

a. 73 cells (85.9%) have expected count less than 5. The minimum expected count is .06.

The Table16 presents the Chi-square test that was performed to indicate whether there is an association between school uniform cost and students' access to education. The results show that there should a violation of school uniform cost to students' access to education in boarding school at 85.9%. However, the results also show that there is a degree of association between school uniform cost as a cost of education and student' access as Asymp. Sig. (2-sided) = .020 less than .05 level of significance with the likelihood ration of 89.407. This also means that the rising cost of school uniforms has an effect on boarding school students' access to education.

Cost of student' school materials as a cost of education

The cost of students' school materials makes up the cost of education paid by households to full participation in boarding schools. The students in such school are obliged to buy various materials helping them to live the life of school schools. In that case, students were requested to indicate the cost spent to each material used in the life of boarding school. This study present the results related to how the cost of student' school materials vary by gender, school location, financing source, class level, socio-economic status and by students' age group. The results are as presented in Table17.

Table 17: Student' school material cost by gender

Gender	Observations	Mean	Std. Dev.	Min	Max
Male	120	13306.67	4203.22	10000.00	25000.00
Female	127	16265.08	6267.42	10000.00	40000.00

The result in Table17 shows that there is a difference between the costs of student school uniform paid by households by gender. It shows that the cost of school materials given to girls takes the average of 16,265 Rwandan francs while the cost of student' school material given to boys in boarding secondary schools take the average cost of 13,306 Rwandan francs. This implies that the households of girls' student pay 10% than households of boys' students to school materials in boarding secondary schools.

However, the study also sought to determine the level through which the cost of student' school materials vary due to the location of student' school enrolment. The results are as presented in Table18.

Table 18: Cost of students' school materials by school location

School location	Observations	Mean	Std. Dev.	Min	Max
Urban area	76	18764.47	5261.58	10000.00	30000.00
Rural area	171	16064.91	6592.72	10000.00	50000.00

This Table18 illustrates that students studying in schools located in urban areas of Rwanda spend more money on school materials than students studying in schools located in rural areas do. The findings show that students enrolled in urban areas spend 18,764 Rwandan francs to school materials while students studying in rural areas spend 16,064 Rwandan francs. This also shows that enrolled in schools of urban areas spend 7.8% to school materials than students enrolled in schools of rural areas do.

This study also sought to examine whether there is an association between students' school materials and school completion. This was done to see whether the lack of or availability of school supplies had an effect on a student's ability to complete their education. The Results are as presented in Table19.

**Table19: Chi-Square test of school materials and student' school completion**

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.248[a]	16	.209
Likelihood Ratio	24.700	16	.075
Linear-by-Linear Association	1.498	1	.221
N of Valid Cases	247		

a. 13 cells (52.0%) have expected count less than 5. The minimum expected count is 1.26.

The Table19 Presents the Chi-square test that was performed to indicate whether there is an association between school material cost and students' school completion. The results show that there is a violation of school material cost to students' completion in boarding school of 52% . However, the results also show that there is a degree of association between students' school material cost as a cost of education and student' completion as Asymp. Sig. (2-sided) = .020 less than .05 level of significance with the likelihood ration of 24.7. This means that a shortage of school materials has an effect on a student's boarding school completion.

The study sought to calculate whether there is a difference in cost of school materials due to financing source of school fees. The results are as presented in the Figure2.

Figure2: Cost of student' school material by financing source
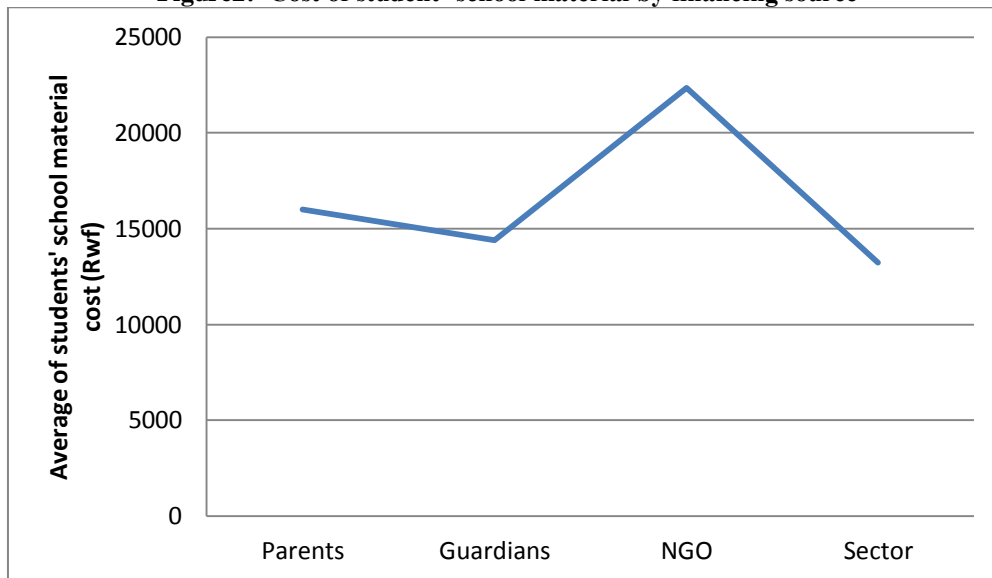
The Figure2 presents the extent to which the cost of school materials given to children per term in boarding school varies due to the source or caregiver of that child. It reveals that students that get the school materials of the high cost are those financed by Non-Governmental Organizations (NGOs) as they spend an average cost of school materials of 22,368 Rwandan Francs and followed by children financed by their parents that get the school materials whose average cost of 16,020 Rwandan francs. On the other hand, it is revealed that students financed by guardians and government centralized at sector level get the school materials whose average cost of 14,392 Rwandan francs and 13,216 Rwandan francs respectively. This implies that students get school materials in boarding school due to financing source where the highest school materials are given by NGOs that spend 26.6% more than those children financed by sectors that spend the lowest amount of school materials.

Figure3: Cost of students' school materials by class level
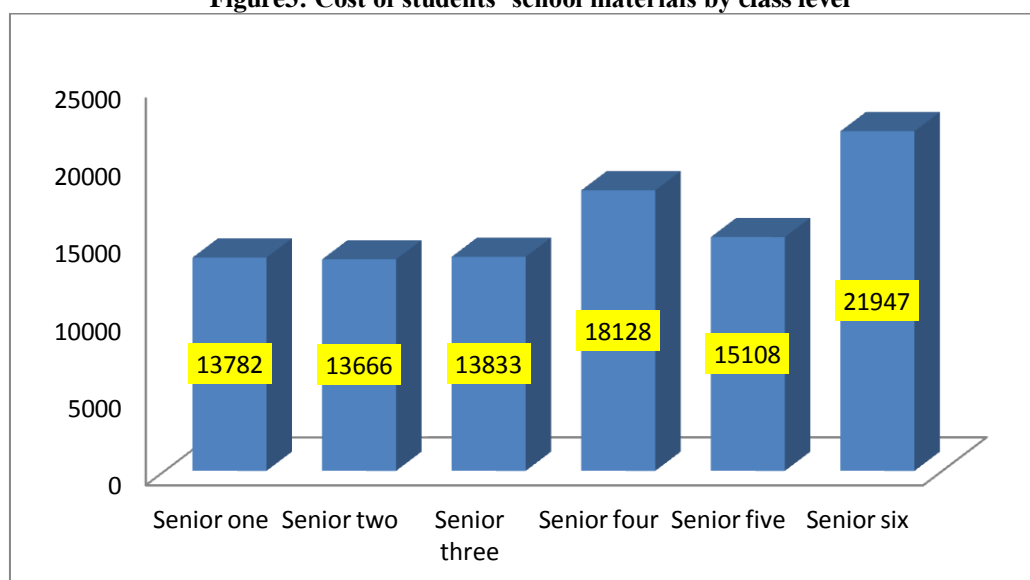
The findings presented in the Figure3 show how the cost of school materials given to students varies by class level per term. It was found that students starting upper secondary and those completing secondary level of education, their parents spend a high cost of school fees. Children studying in senior six get the school materials of an average cost of 21,947Rwandan francs while senior four students get the school materials of an average cost of 18,128 Rwandan francs. On the other hand, children studying in senior two pay the minimum cost of school materials of 13,666 Rwandan francs.

Table20: cost of students' school materials by socio-economic status

Socio-economic category	Observations	Mean	Std. Dev.	Min	Max
category one	10	12961.36	4831.88	10000.00	20000.00
Category two	49	16481.63	5772.99	10000.00	35000.00
Category three	144	15918.75	6088.39	10000.00	40000.00
Category four	44	21900.00	11763.41	11500.00	50000.00

A Table20 presents the average cost of student' school material per term and it varies by the socio-economic status of student's households. It reveals that the cost of students' school materials in boarding school increases with the increase of socio-economic status of households where children categorized in the fourth ubudehe category pay an average cost of 21,900 Rwandan francs while categorized in ubudehe category one pay an average cost of 12,961 Rwandan francs. This should children in ubudehe category four uses the school materials that cost 25.6% more than children in ubudehe category one, which is very high. This also implies that socio-economic status of household can be a burden to afford the cost of education in boarding secondary school.

Table21: Cost of students' school materials by age

Age group	Observations	Mean	Std. Dev.	Min	Max
Below 15years	22	15727.2727	6450.77934	10000.00	30000.00
16-18years	160	16138.7500	6639.95896	10000.00	50000.00
19years and above	65	16815.3846	4966.07965	10000.00	35000.00

The Table21 shows that the cost of school materials paid by parents varies by the change of the children' age group. It is clear that children categorized in age group of 19 years and above pay a high cost school materials compared to other age groups where they pay an average cost of 16,815 Rwandan francs and those categorized in age group of 15years and below pay an average cost of 15,727 Rwandan francs per term.

Table22: Association between students' school material and students' dropout

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.654[a]	16	.020
Likelihood Ratio	30.963	16	.014
Linear-by-Linear Association	3.950	1	.047
N of Valid Cases	247		

a. 13 cells (52.0%) have expected count less than 5. The minimum expected count is 1.41.

The Table22 Presents the Chi-square test that was performed to indicate whether there is an association between school material cost and students' dropout. The results show that there is a violation of school material cost to students' dropout in boarding school of 52%. However, the results also show that there is a degree of association between students' school material cost as a cost of education and student' dropout as Asymp. Sig. (2-sided) = .014 less than .05 level of significance with the likelihood ration of 30.963. This implies that the lack of school material affects students to school dropout.

Teacher' bonus as a cost of Education
Teachers' bonus a cost of education refers to the amount of money spent by households to motivate teachers in teaching and learning process or to get some extra-class where it is necessary to the curriculum. This is done for better performance and improving the quality of education given to students in boarding school. Therefore, students were asked to the amount of money spent to motivate their teachers in school as motivation. Attempt was made to indicate teachers' bonus by student' class level (lower and upper secondary) and school location.
This study sought to examine whether there is a differentiation between teachers' bonus paid by households due to the children' class section as lower and upper secondary. The results are as presented in the Table23.

Table23: teachers' bonus by student' class level

Student class section	Observations	Mean	Std. Dev.	Min	Max
Lower secondary	92	7166	763	6500	8000
Upper secondary	155	9345	2390	6500	15000

The results in the Table 23 show that there is a difference between the costs of bonus of teachers paid by households due to the class sections of their children. The result reveals that students in upper secondary school are the one to high cost of teachers' bonus with an average of 9,345 Rwandan francs while households of children in lower secondary pay average cost of teachers' bonus of 7,166 Rwandan francs. This implies that households of student in upper secondary school paid 13.2% than households in lower secondary of boarding school and this can be an obstacle to make effective school completion. This study also sought to calculate the cost of teachers' bonus paid by households by the location of the boarding school. The results are as presented in the Table24.

Table24: Teachers' bonus by school location

| School location	Observations	Mean	Std. Dev.	Min	Max
Urban area	76	12710	1108	7000	18000
Rural area	171	9038	2858	5000	15000

The results indicated in the Table24 show that there is a difference in cost of education incurred by households in term teachers' bonus due to the location of their schools. It reveals that parents of children transferred in urban areas of Rwanda, which is represented by Kicukiro district in pay average cost of 12,710 Rwandan francs to teachers' bonus while parents of children transferred in schools of rural areas of Rwanda represented by Ruhango district pay average cost of 9,038 Rwandan francs. This also shows that parents of children studying in urban areas of Rwanda pay 16.88% than parents of children enrolled in schools of rural areas to teachers' bonus
The households' incidental expenses to education in public boarding secondary schools were also calculated. Therefore, the analysis related to the cost of education incurred by the households, it apparent that there are other added incidental expenses to education that may be also considered as a burden to households and can affect the students to participate in boarding schools. This helps the study, to know any other educational expenditure in order to know the additional amount of money spent by the households to education

of their children. The results in the figure 4.8, gives the additional cost of education in boarding secondary school by the households.

Figure4: The households' incidental expenses to education in boarding school
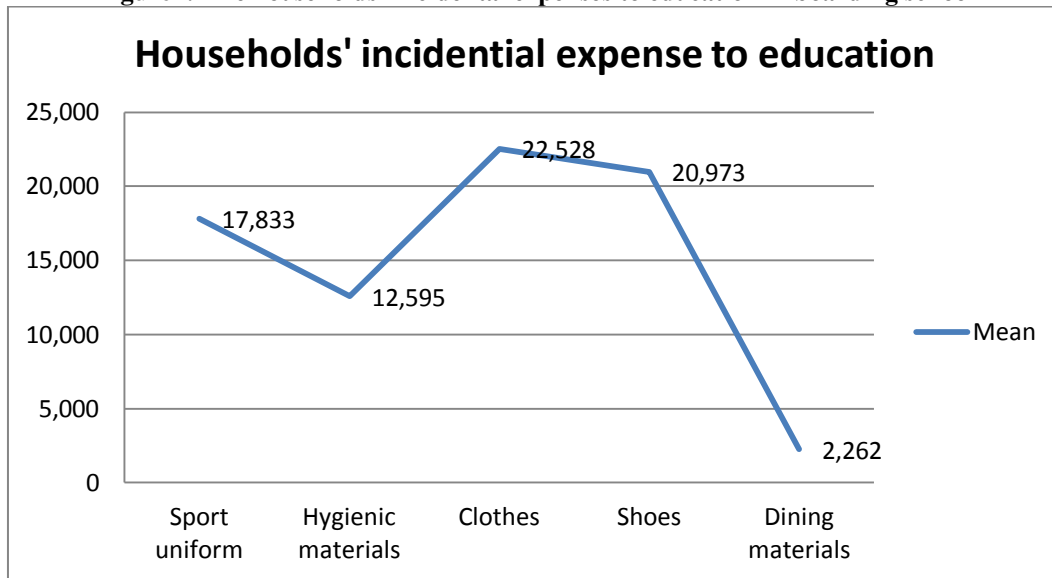
The results in the figure4 indicate some incidental expenses incurred by households to education in boarding schools done per year where the student clothes claim to be at the highest household education expenditures that support the education of their children to be successful that takes an average cost of 22,528 Rwandan francs. The second household expenditure is for student shoes, which takes an average cost of 20,973 Rwandan francs followed by the expenditure incurred by the households on the sport uniform used by their child, which takes an average cost of 17,833 Rwandan francs. The results in the figure4, further show that an average of 12,595 Rwandan francs spent by the households on the hygienic materials used by student in boarding school. In the same vein, the results in the figure4 also indicate that households spent an average cost of 2,262 Rwandan francs on dining materials also used by student in boarding secondary school per year.

Mwiza and Kimengi (2006) indicated households' education extra-expenses strengthen the burden of financing education of their children effectively. This implies shows that a parent may fail to get hygienic materials and clothes used in boarding school due high education cost charged.

Households education cost in public boarding secondary schools

This paper also establishes the cost of education incurred by households including all the money paid by parents, guardians or other supporters in order to meet the cost of education of every child in public boarding secondary schools. This cost is made up of the cost of school fees, which includes lunch fees, transport cost from home to boarding school and vice versa, school material cost, school uniform cost and teachers' bonus. This amount is tabulated and the results are as presented in Table25.

Table25: Households education cost

Variable	Observations	Mean	Std. Dev.	Min	Max
Education cost	247	160903	23903	121700	223000

Table25 shows that parents of children in public boarding secondary schools pay the total average of 160,903 Rwandan francs per term to every child. However, the total minimum cost of education per term in public boarding secondary schools is 121,700 Rwandan francs and the maximum cost is 223,000 Rwandan francs per term. Zhan *et al.* (2019) revealed that low socio-economic status of households is an obstacle to parents to fulfill their responsibilities related to education of their children. This implies that participation of students in boarding secondary schools is associated with the socio-economic status of their parents.

The study also sought to indicate to total family income per month in order to find out the extent to which parents are able to afford the average cost of education required in public boarding schools in Rwanda and the results are in Figure5.

Figure5: Family monthly income
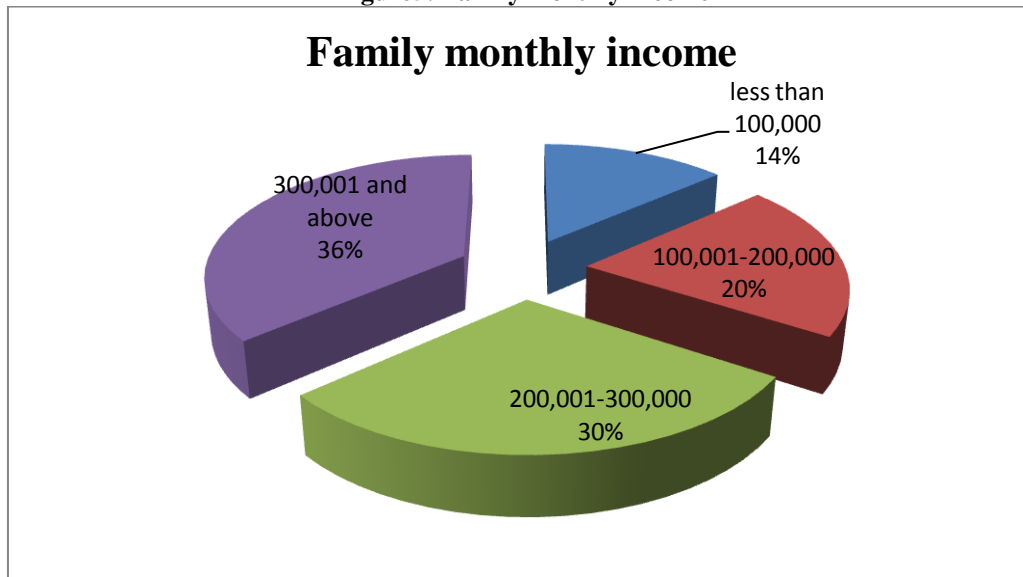
The Figure5 presents the categories of monthly family income. It shows that the majority as 36% of parents get monthly income categorized from 300,001 Rwandan francs and above while 14% of parents earns 100,000 Rwandan francs and below. This implies 14% parents of children in public boarding secondary school are not able to afford the cost of education of a single child without getting external support, as their monthly income is below the average cost of education in public boarding school. Mutegi (2015) revealed that the households income levels have been show to affect the enrolment in schools mostly to children of parents of low income level. Chaudhury *et al* (2006) income level correlates with school participation. This means that in developing nations, a family's financial potential has a huge impact on their children's school attendance. Therefore, both direct and indirect costs of education are taken as important factors associated with school access, dropout and completion.

The goal of this paper was to show how the cost of education differs by gender, age group, student class level, and school location for households.

Table26: Households educational cost by gender

Gender	Observations	Mean	Std. Dev.	Min	Max
Male	120	156794	22373	121700	221500
Female	127	165427	24728	123000	223000

Table26 shows that it is more costly to educate a girl in public boarding secondary school in Rwanda as the average of household educational cost is 165,427Rwandan francs while parents of boys in boarding schools pay an average cost of 156,794Rwandan francs. This implies that parents of girls in boarding secondary schools pay 2.6% more than parents of boys in boarding school per term. This may also be a burden to parents of girls in boarding schools than those of boys. Koriyow (2017), gender disparity is an issue to households financing education of their children due to high education cost by households and results to force out of boarding school. This study shows that households make themselves a decision of taking in or out of boarding secondary schools due to financial capacity.

This paper also sought to indicate the change of households educational cost by students' age group and the results are as presented in Table27.

Table27: Households educational cost by age group

Age group	Observations	Mean	Std. Dev.	Min	Max
Below 15years	22	157759	24080	123800	208000
16-18years	160	160808	24267	121700	223000
19years and above	65	162200	23189	123000	211000

Table27 shows that the household education cost is mostly spent to children aged from 19years and above with an average cost of 162,200 Rwandan francs while parents of children aged 15years pay less in public boarding secondary schools with an average cost of 157,759 Rwandan francs. This implies that the cost of

education in boarding school varies by the age of students. The study also presents the average cost of education paid by households in boarding school by students' class level and results are presented in Table28.

Table28: Households educational cost by student' class level

Student' class level	Observations	Mean	Std. Dev.	Min	Max
Senior one	20	143976	3210	135000	162000
Senior two	3	132533	3100	129000	134800
Senior three	9	152311	19304	123800	175500
Senior four	42	157740	23304	123700	214800
Senior five	76	156406	23505	121700	218500
Senior six	97	168398	23254	123800	223000

Table28 shows that parents of children studying in senior six pay a high cost of education valued at an average of 168,398 Rwandan francs per term. Parents of children studying in senior two pay less valued at an average of 132,533 Rwandan francs per term. The cost of education also goes up to students of senior four with an average cost of 157,740 Rwandan francs and goes down to students of senior five that pay an average cost of 156,406Rwandan francs. It is also found that cost of education also reduces to students of senior three and senior one pay average cost of 152,311 and 143,976 Rwandan francs respectively per term. According to Alex (2014), household' educational costs has been faced our two main challenges like late disbursement of education cost required and insufficient funds which affect adequate school participation. This study shows that a household may fail to enroll or continue enrolling their children in boarding secondary due to their insufficient funds and affect a student' school completion.

The study also presents the results related to households educational cost by students' school location and illustrated in Table29.

Table29: Households educational cost by student' school location

School location	Observations	Mean	Std. Dev.	Min	Max
Urban area	76	168036	17858	130300	205800
Rural area	171	157733	25559	121700	223000

Table 29 shows the average cost of education incurred by parents of children in public boarding secondary schools located in urban and rural areas. Table29 shows that parents of children in schools located in urban areas pay an average cost of 168,036 Rwandan francs and parents of children in schools located in schools of rural areas pay an average cost of 157,733 Rwandan francs. This implies that parents of children in schools of urban areas pay 3.2% more than parents of children in rural areas every term. Zhan *et al.* (2019) supported that the cost of education incurred by households varies by school historical background, which become a challenge to families of low socio-economic status.

This paper, sought to examine the involvement and influence of the households' socio-economic status (family ubudehe categories) able to continue enroll their children in public boarding secondary schools. This was very important for this study as it was helpful to indicate the level households able to enroll their children in boarding school due to their ubudehe categories. The Figure6, presents the findings of households able to continue to enroll children in boarding school by ubudehe categories.

Figure6: Family continues to enroll children in boarding by ubudehe category
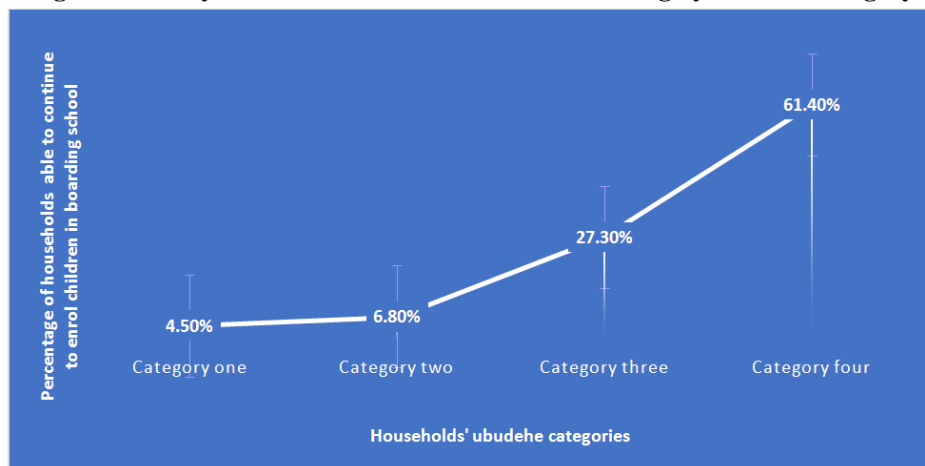
The results presented in the figure6, show the further analysis done to investigate the level through which the households can continue to enroll their children in boarding secondary schools by their socio-economic status (ubudehe categories) by the time the costs of education for boarding schools have been increased. The results give that the students whose families in the ubudehe category four, are the most to get opportunity to continue participating in boarding schools though the cost of education have been increasing where they indicate 61.4 percent.

This is followed by households in ubudehe category three, where 27.3 percent of the households they should continue to enroll the children in boarding schools however, the costs of education keep increasing. The results in the figure6, also explain that the households indicated in ubudehe category two are able to continue enrolling their children in boarding schools at 6.8 percent of the total households ubudehe categories while the households whose ubudehe category one, take the remaining 4.5 percent of the total households ubudehe categories. Meanwhile, the stability of participating in public boarding secondary schools to students depends on the hierarchy of the households' socio-economic status or their ubudehe categories. It is in this regard therefore, the determination of the education costs, might be based on the financial capacities of families enrolling their children in boarding schools which can be an obstacle to the development of the youths' literacy. This also suggests that household wealth determines a household' ability to invest in education of a child (Rankin & Aytac, 2006).

V. CONCLUSION

The study also reveals that there is a negative relationship between the average amount of money spent by household to educate a child in boarding secondary school and student' participation rate in public boarding secondary schools. This indicates that the increase in household educational expenditures decreases the participation rate of students in public boarding secondary schools.

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