

The Influence Of
Transport Cost
Differentials On
Access To Secondary
Education In Kenya

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ABSTRACT

The government of Kenya introduced Free Tuition Secondary Education (FTSE) in January 2008 with the aim of increasing transition from primary to secondary by 70% percent. However, since the introduction of FDSE, little is known on the burden born by parents when taking their children to secondary education in relation to transport cost. This paper sheds light on the associations between transport cost, gender, age, category of school and access to secondary education using data from one county in Eastern Kenya. The results show that the average distance from households to school is 24km, with day schools being closer at 12km and boarding schools 28km away. It also established that there is a relationship between distance from household to school and cost of transport ($P < 0.05$ and coefficient of 142). In line with gender, the study established that household with girls in secondary school spends Ksh 3,186 compared to boys Ksh3, 100. However, the mean differences are not statistically significant. On the highest transport cost paid by both, the study shows girls pay Kshs, 19,000 and boys Ksh 18, 000. Unlike gender, the result shows that there is a relationship between the age of the students and transport cost ($r = -.105^*$, $p = .048$) implying that students who are younger relatively pay less transport cost compared to elderly ones. The study also established that students in day schools spend less money on transport than their counterparts in boarding schools. For those in day schools and boarding schools on average they spend Ksh 1,547 and Ksh 3,501 respectively. It further established that there is a positive statistical significant relationship between distance from household to school and school dropout ($r = 0.773$, $n = 339$, $p = 0.001$) an indication that transport cost affects access to secondary education in Kenya. Generally, transport cost negatively correlates with access to secondary education, suggesting that transport cost may be a barrier to middle level education in countries where the burden of educating children is borne excessively more by households than by governments.

Key words: Transport cost differentials, Access, Household and secondary education

1. INTRODUCTION

In Kenya, the cost of education is met by the government and household members. Government expenditure on education in Kenya is driven by the Sessional Paper No. 1 of 2005 on a Policy Framework for Education by the Training and Research and the Second Kenya Education Sector Support Programme (KESSP II) as well as by the Basic Education Act, 2013. These Acts of parliament and other associated programmes coupled by the direct and indirect benefits attributed to education and by conventional laws that safeguard the rights of children, have led the government of Kenya to give the education sector the highest public education allocation compared to allocations by other East African countries.

As a result of the aforementioned Acts of parliament, the government of Kenya introduced Free Tuition Secondary Education (FTSE) in January 2008 with the aim of increasing transition from primary to secondary

by 70% percent in all districts (Ohba, 2009). According to the Free Secondary Education policy, the government was expected to meet expenditures such as professional development of teachers, teachers' remuneration, infrastructure, administration and management, provision of bursaries and scholarship for needy students, public examinations, school amenities (water, energy and communication) and tuition fee. Currently *capitation* from the government for FDSE per students amounts to KSh12,870. *For the parents, they are* required to meet other discretionary expenditures like lunch, uniform, transport and boarding fees for those in boarding schools, besides development projects. This was in line with the government commitment to ensure that regional special needs and gender disparities were addressed (Ohba, 2009). However, since the introduction of Free Day Secondary Education, little effort has been made to establish whether hidden cost such as transport have influence on access to secondary education. This paper sought to establish the impact of transport cost differentials on access to secondary education in Kenya.

2. STATEMENT OF THE PROBLEM

According to Richard (2001) transport cost is one of the direct cost of education borne by the household. Since inception of FDSE in 2008 by Kenyan government, there is absence of data on full financial burden borne by parents who have children in secondary schools. The absence of this data may lead to inability of the government to come up with educational cost policies to promote 100% transition rate from primary to secondary. The absence of data on transport cost burden borne by households, coupled by tight household budgetary constraints of educating children in developing countries prompted this study to be carried out. The study sought to determine the average transport cost of education met by households and the extent to which it influences students' access to secondary schools. This cost was disaggregated by age, gender and school type attended by the students.

3. OBJECTIVES

The study was guided by the following objectives

- To establish the relationship between transport cost and students gender
- To establish the relationship between transport cost and age students
- To establish the relationship between transport cost and category of school
- To establish the influence of transport cost on access to secondary schools in Kenya

4. LITERATURE REVIEW

Literature has shown that, on the supply side, the most common policy measure has been to improve school access by constructing more schools and thereby reducing the distance from household to school (see Duflo

2001; Burde and Linden 2013; Kazianga et al. 2013). Even though improving school access has proven to be effective at increasing school participation, it is not obvious that improving access should always take the form of constructing new schools.

A number of studies have shown that there is a positive correlation between school distance and access to education. For instance, in India Foster and Rosenzweig (1996) examined the effect of school construction on enrolment and established that the more the schools were constructed the more they got closer to households, hence reducing the distance from home to school hence high access. The same observation was made by Card (1995) who studied the effect of college proximity on college education in the USA. A study by Card (1995) was complimented by Currie and Moretti (2003) and Moretti (2004) by examining the long-term effects of college opening in the USA on access to college education. In Africa, a study by Lavy (1996) and Filmer (2004) demonstrated that distance from home to school affects access to education in Ghana. Other studies by Beegle and Burke (2004) and Bommier and Lambert (2004) in Tanzania demonstrated that same. Handa (2002) also established that distance from household to school affect access to education in Mozambique. Almost invariably, these studies found a positive effect of school availability on enrolment and school attainment.

A study by Knight and Sabot (1990) established an existence of uneven distribution of education opportunities between poor and non-poor regions both in urban and rural areas. These differences are brought about by the distance from household to school. Knight and Sabot (1990) further asserts that children from poor tend to have more limited access to educational opportunities than the non-poor especially in areas where the available schools are far from each other hence increasing the transport cost from home o school.

Knight and Sabot (1990), used to distance from school to household as a factor that denied children access to school hence justification of expanding secondary school education as a mechanism of lowering the transport cost to school. In their research, it was noted that the expansion of Kenyan secondary education system has given rise to more children having access to secondary education. They argued that family background has an effect on the type of school attended and results achieved largely due to the distance from school to home. The study shows that less privileged students were more likely to attend the poorer quality Harambee schools which also received less government subsidy thereby worsening inequalities.

The session Paper No. 1 on educational Planning and Policy (2005), outlined the government policy of working towards integrating secondary education as part of basic education. The policy in the long term was to promote the development of day schools as a means of expanding access or reducing costs to parents especially on the cost incurred by children as they commute from home to school. A study by APHRC (2007) indicated that the lack of schools within a reasonable distance is serious problem in rural areas, often marginal and remote parts of the countries. This limitation is shared with urban slums that are often neglected in the provision of basic infrastructure. The rural urban poor also share other common characteristics in constituting a majority of the

poor that cannot afford and programme to significantly improve transition to secondary school in the region; they must target these segments of population. Hence, the implementation of FDSE policy in Kenya ensures all Kenyan children are able to access basic education in which secondary education has been integrated.

5. METHODOLOGY

This study used correlational design to analyse the relationship between transport cost and access to secondary education in line Orodho (2005) who recommended correlational design especially when the study seek to establish the relationship between variables. The target population included all the 25 secondary school principals and 23,275 household heads in Tharaka south Sub county. To get the sample size the study used Yamane (1967) formulae as illustrated below

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

Where; n = minimum desired sample size

N = the target population (23275)

e = degree of precision (5%)

Therefore, by substitution:

$$n = \left[\frac{23275}{1 + (23275 * 0.05^2)} \right] = 393 \text{ household heads.}$$

In this case a list of households was made with the help of the area chief. The names of household heads were then folded and picked randomly. This was done to ensure that all the household heads in the sub county had equal chance of being picked to participate in the study. The study used Interview schedule, questionnaire and document analysis as main tools for data collection. Document analysis involved collections of data on students' enrolment from documents at school principals' offices.

6. RESULTS

The study sought to establish the distance from household to school and subsequently transport cost implications. The results are as presented in table 5.1

Table 5.1 Distance from students' household to school

Item	Frequency	Min	Max	Mean	Std
Distance from school to home in Kilometres	394	1	100	24.73	26.23

The result in Table 5.1 shows that on average students covers around 25 Km from home to school. This implies that most of the students cover long distances to access secondary education. The long distance from household to school is attributed to the sparse nature of population distribution. In Tharaka South sub county population density is very low. This make household be found far from secondary school.

Further analysis to establish the influence of distance on access to secondary education is as summarised in Table 5.2

Table 5.2 correlation coefficient between distance from households to school and drop our rate

		Distance from school to home in Km	Has name ever dropped from school
Distance from school to home in Km	Pearson Correlation	1	.773
	Sig. (2-tailed)		.001
	N	340	339

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5.2 shows that there is a positive correlation between distance from household to school and school dropout. The results show that the relationship is statistically significant ($r = 0.773$, $n = 339$, $p = 0.001$). this implies that children who come from far distance to attend school have a higher probability of dropping out of school compared to those who come from nearby.

On whether there was relationship between the transport cost and distance from household to school. The results are as presented in Table 5.3.

Table 5.3 Relationship between distance from household to school and transport cost to school

Unit cost	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
Distance	142.9823	64.36303	2.22	0.027	16.34345 269.6212

Table 5.3 shows that the distance from household to school highly influence transport cost of education. The results show that as distance to school increases the unit cost also increases ($B=142.9$, $P=.027$). This can be explained by the fact that parents' household are sometimes forced to part with travel cost of their kids who are attending secondary education.

These results are in line with the work of Fentiman et al, (1999) who established that distance to school is an important determinant of educational access. For example, in cases in which there are more primary schools than junior highs schools in the locality, and in which the only available secondary school is further away. The distance to the latter may be considered too far for younger children, especially girls (Juneja, 2001). This is also true in the cases of older girls and those children regarded by parents as vulnerable to sexual harassment (Colclough et al., 2000; Nekatibeb, 2002; PROBE, 1999). Parents are afraid of the safety of their children when they have to travel longer distances to school. Thus, according to Ainsworth et al. (2005), the likelihood of children attending primary school decreases the greater the distance to the nearest secondary school. This is an indication that long distance up-scale cost of transport from home to schools hence affecting children from poor households.

Studies in African countries such as Egypt have shown that the proximity of the schools to household greatly affect girls more than the boys. In his study Herz (1995) established that enrolment and the persistence of boys

and girls in schools is a function of distance to the available schools, for instance, the location of a school within 1 km of a community resulted in an enrolment rate of 94 percent for boys and 74 percent for girls; when the distance was increased to 2 km., boys' enrolment fell only slightly to 90 percent, but girls' enrolment plummeted to 64 percent. In relation to the school category, the study sought to establish whether there is a difference in distance between day schools and boarding school. To this effect the study established that there is a wide variation in relation to the distance covered by students who attend day and secondary schools in Tharaka south sub county. The results show that students attending day schools covers 12 Km on average. This translate to 24 kilometres per day while those attending boarding schools covers 28 Km on average. This makes access to secondary education difficult for the children in the area.

The actual transport cost to schooling was computed, this included the cost incurred by the students as they travel to and from school and the transport cost incurred by parents or guardians to visit their children at school. In this case the household heads were asked to indicate the amount of money that they pay on transport for a particular child in secondary school for the last twelve months. This cost was disaggregated by gender, age and category of the school of the students. The computation was done to establish whether transport cost to school differ by student age, gender or school category as presented in Table 5.4

Table 5.4 Transport Cost by Gender

Gender	observations	Mean	Std. Dev.	Min	Max
Male	154	3100.325	3485.115	300	18000
Female	201	3186.517	3373.768	200	19000

Table 5.4 shows that on average girls pay slightly higher transport cost than boys in Tharaka South sub-county. The mean for the girls is Ksh 3,186 for the period of twelve months or three school terms. This translates to Ksh 1062 per school term. The boys spend Ksh 3100 in a year on school transport. The results further indicate that the minimum amount of transport cost paid by the boys is Ksh300 and girls Ksh200. The highest amount of transport cost paid by the boys is Ksh 18, 000 while for girls it is Ksh, 19,000. This implies that on average household with girls in secondary school incur more transport cost than the household with boys.

The computation of transport cost by age of the students is as presented in Figure

Figure 5.1 mean transport cost by age of the students

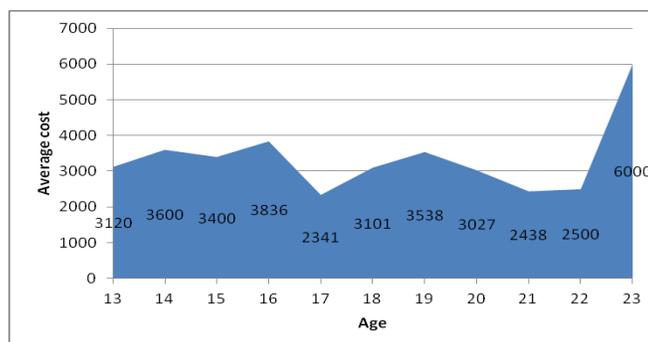


Figure 5.1 illustrates fluctuating trend in relation to the school transport by age, the results shows that children of age 23 pay more money for transport compared to the younger ages like 13 years. However, apart from ages 23, 22 and 21 majority of other ages on average spends Ksh 3,000 on school transport per year.

In line with school category that is day or boarding school, the results on the amount of money paid by students is as presented in Table 5.5.

Table 5.5 Transport cost by school category

School Type	frequency	Mean	Min	Max
Day school	167	1547	300	18000
Boarding	201	3501	200	19000

Table 5.5 indicates that, the mean transport cost for the students in day schools is lower than the mean transport cost for those in boarding school. The students in day schools on average spends Ksh 1,547 and those in Boarding schools spends Ksh 3,501. This gives a variation of Ksh 1,954; this difference can be associated to the distance from home to school as already shown. Students in boarding schools cover long distances 28 kilometers while those in day schools cover 12 kilometers. This therefore implies that, children in boarding schools incur more transport cost when going to report to school and when coming from schools on closing days or when sent home to collect school fees and also when parents/guardian visit then in schools. For those in day schools, they pay less because they walk to school hence incurring no cost. Upon probing parents with children in day schools. they said that their children mostly walk to school or sometimes uses bicycles. This reduces the cost of transport especially for the boys who are able to walk or ride a bicycle to school. In the earlier results in Table 4.4 results indicated that girls pay more transport cost than the boys on average.

In line with the gender, the study sought to establish whether there is any relationship between transport cost and gender of the students. The results are as presented in Table 5.6.

Table 5.6 Relationship between gender of the child and transport cost

		Childs gender (1=male)
Transport	Pearson Correlation	.049
	Sig. (2-tailed)	.362
	N	355

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5.6 shows that there is a very weak correlation between transport cost and the gender of the students ($r=.05$, $N=355$, $p=.36$). The results show that transport has no relationship with students' gender. This implies that even though girls pay more than the boys the difference is not statistically significant

On the aspect of age and transport cost, the correlation results are as presented in table 5.6

Table 5.6 The relationship between age and transport cost

		Age of child
Transport	Pearson Correlation	-.105*
	Sig. (2-tailed)	.048
	N	355

** . Correlation is significant at the 0.01 level (2-tailed).

As presented in Table 5.6, the results show that unlike gender where there was no association between gender and transport; there is association between transport and the age of the students. This implies that students who are younger in age relatively pay less transport cost compared to older children. In this case, parents who have children older than others incur more transport than the rest.

In relation to school category, the results are as illustrated in table 5.7

Table 4. 1 The relationship between transport costs by category of school

		Type of school (1=sub-county)
Transport	Pearson Correlation	-.246**
	Sig. (2-tailed)	.000
	N	293

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5.7 shows that there is a negative correlation between the school category and the transport cost ($r=-.246$, $N=293$ and $p<0.001$). This implies that those in sub-county school pay less transport than those in extra county school. The difference is also associated with distance because the sub-county schools are closer to the household compared to the extra-county schools which admit students from far distance.

7. CONCLUSION

This study indeed established that distance from household to school is a determinant to school access. This is attributed to the actual distance from households to schools which was found to be 25km on average especially for boarding schools and 12km for the day school. The long distance escalates the transport cost hence making it difficult for some parent to afford. The distance makes it difficult for children to walk to school.

On the relationship between the distance and cost of transport, the study established that there is a statistical significant relationship between distance and transport cost ($P<0.05$ and coefficient of 142) an indication that an increase in kilometre leads to an increase of transport cost by Ksh 142. In line with gender, the study established that girls on average are given slightly higher money for transport than the boys in Tharaka south Sub County. The mean for the girls is Kh3, 100 and Ksh 3,186 for the boys for the whole year. The minimum amount transport cost given to a student by parents is Ksh 300 boys and girls Ksh200. The highest amount of money given as transport was Ksh 18, 000 for the boys while for girls it is Kshs, 19,000.

Unlike gender, the result shows that there is a relationship between the age of the students and transport cost. This implies that students who are younger in age relatively pay less transport cost compared to those who have more age. This means that parents who have children older than the rest pay more transport cost.

The study also established that students in day schools spend less money on transport than their counterparts in boarding schools. For those in day school and boarding schools on average they spend Ksh 1,547 and Ksh 3,501 respectively. The differences on spending on transport can be associated to the distance from home to school. Those in boarding schools cover long distance and therefore spend more money of transport from and to school on opening days, closing days and also when sent home to collect school fees.

In relation to transport cost and the category of school, the study establishes that there is a relationship between the school category and the transport cost. This implies that those in sub county schools pay less transport than those in extra county school. This is also attributed to the distance because the sub county schools are closer to the household compared to the extra-county schools which admit students from far distance.

8. RECOMMENDATIONS

- The study recommends that more day schools ought to be established in order to shorten the distance from home to school
- The study also recommends schools to organise for transport on opening days and closing days where the school buses can drop students in destinations near their homes
- There is need to minimize students' movement d from school to home, especially students in boarding schools. This can be done minimizing sending students home for school fees
- There is need to subsidise the transport cost for the girls by the government, this can be done through affirmative action programme
- There is need for parents to invest by taking their children to schools near their homes. This would reduce the distance covered from home to school hence lower transport cost

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