

Does Parental Socioeconomic Status Matter in Pupils' Academic Achievement in Kenya Certificate of Primary Education? Empirical Evidence from Public Primary Schools in Kenya

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Abstract

We explore the effects of Parental Socio-economic Status (SES) on pupils' academic achievement. The population was the class eight primary school pupils enrolled in Bungoma Central Sub County. Multistage sampling technique was used to select 300 class eight pupils. The SES questionnaire was self-administered to the sampled pupils. Principal Component Analysis was used to categorize pupils into three Socio-economic Statuses. The obtained scores on Kenya Certificate of Primary Education (KCPE) examination were used as pupils' academic achievement. The Multiple Regression Analysis results showed that pupils from high SES are high achievers in KCPE while those from low SES remained low achievers. In this way the study verify the results of different studies in other countries that SES affects academic achievement. There is need to assist pupils from poor backgrounds morally, financially and place them in boarding schools to enhance their performance in KCPE.

Keywords: Socioeconomic Status, academic achievement

1. Introduction

Education is the best legacy a nation can give to its citizens especially the young (Safda et al., 2013). Worldwide primary education is considered a basic human right (MDG, 2000). Therefore, role of primary education in human capital development cannot be underscored. For example, primary education enhances the learner to participate effectively in nation building, improve health care and nutrition; and foster economic growth and social equality (Psacharapoulos, 1987). No wonder, the world conference in Thailand and Senegal in 1990 and 2000 respectively campaigned for relevant and quality primary education (World Bank, 2008; UNESCO, 2005).

Therefore, many countries now provide Free Primary Education (FPE) to ensure access and quality grades regardless of a child's family background, religion, age and location (ROK, 1997). Besides, primary education is a prerequisite for secondary education which later determines the tertiary institution one joins the profession to enter and future earnings (Nyagosia et al., 2013). Valarie (2002) asserts that the main aim of education is to ensure that every learner succeeds in education life. Therefore, pupils' academic achievement is a key concern for educational stakeholders and policy makers as failure in the national examinations spells doom for the learners whose life becomes ambivalent and full of discouragement (Nyagosia et al., 2013).

However, over the years there have been variations in pupil academic achievement in Kenya Certificate of Primary Education (KCPE) national examinations despite the government equitable funding and posting of trained teachers. Studies worldwide have attributed these disparities to various factors among others; parental SES with varied results. For instance, Leonard (2008) study in the US posits that low academic achievement is largely attributed to past discrimination and economic constraints on the part of the parent.

Rouse and Barrow (2006) observes that years of schooling completed and educational achievement of students varied widely by family backgrounds. On the other hand an opposing review of 66 studies by Henderson and Berla (2004) on parental involvement concluded that the most accurate prediction of students' achievement in school is not income or SES.

Similarly, Rothstein (2004), Harry and Klinger (2007) and Neito (2010) observe that SES does not cause academic difficulties. Yet, studies in Pakistan (Farooq et al., 2011; Suleman et al., 2012) revealed that parental SES did influence student's academic achievement. However, some of the studies done in Africa (Osonwa et al., 2013; Igbo et al., 2014) have

demonstrated that parental SES influences student's academic performance contrary to studies done by Adewale (2012) and Kapinga (2014) in the same continent showing no significant relationship between parental SES and student's academic achievement.

In Kenya, similar studies have also been done on family background factors and academic achievement. For example, studies by Ogweno (2014) and Jagero et al. (2014) have demonstrated that parental SES has an influence on student's academic achievement. Similarly, Bota (2007) study showed that students from low SES posted low academic achievement as most of their academic time is used in supplementing family income.

In addition, a study by Kamau (2013) found a positive relationship between family background variables and academic achievement. From the literature presented, it is clear that various studies worldwide have varied results on the effect of family background factors on academic achievement. In Kenya, similar studies have also contradicting findings. For example, studies done by Bota (2007) and Jagero et al. (2014) indicate that family background factors affects pupil's academic achievement while others (Ogweno, 2014) show contradicting findings.

In Bungoma Central Sub-County, despite the government equalization of the FPE funds, there are continued disparities in pupils' academic achievement in KCPE. However, no empirical studies have been carried to establish the effect of family related factors such as parental socioeconomic status on pupils' academic achievement despite the Sub-County low average mean score performance of 240.74 for the last five years. It is on this basis that this paper presents the findings on the effect of parental socioeconomic factors on pupils' academic achievement in the sub- County.

It is expected that the findings may assist stakeholders to mitigate the effects of parental SES that contribute negatively to pupils' academic achievement. This may improve efforts to reduce the already existing disparities in poverty levels for pupils from disadvantaged background due to low academic achievement. This could impact positively on the country's attainment of educational Sustainable Development Goals and Vision 2030.

2. Research Methods

Multistage sampling technique was used to select 300 pupils from a target of 5,458 class eight pupils in Bungoma Central Sub-County. The SES questionnaire was developed to collect data on household assets ownership and housing and sanitation condition and was self-administered to the sampled pupils. The Principal Component Analysis (PCA) was used

to categorize pupils into three socio-economic statuses (high SES, middle SES and low SES) using household assets ownership and housing and sanitation condition data.

Higher positive scores were assigned to variables that were more likely to be associated with high SES while low values were assigned to variables more likely to be associated with low SES (Seema & Lilani, 2006). The household asset and housing and sanitation scores were summed for each of the class eight pupil, ranked and recoded into three quintiles namely, high SES, middle SES and low SES (Ruel & Menon, 2002), which were then used as a measure of the class eight pupil SES. The class eight pupils SES variable is the independent variable and is categorical (1=high SES, 2=middle SES and 3=low SES). The data is presented in Table 1.

Table 1: Class Eight Pupils SES from Principal Component Analysis

Variable name	Mean Proportion	Standard Deviation	Factor Score	Variable name	Mean Proportion	Standard Deviation	Factor Score
Household owns electric kettle	0.32	0.49	0.12	6=Other	0.05	0.23	0.09
Household owns video machine	0.31	0.54	0.09	Household roof type:			
Household owns refrigerator	0.28	0.43	0.16	1=Tiles/concrete/cement	0.20	0.42	0.33
Household owns wall clock	0.74	0.42	0.21	2=Galvanized iron/asbestos	0.57	0.46	0.15
Household owns an electric iron	0.68	0.42	0.33	3=Bamboo/wood/mud/grass	0.09	0.21	-0.51
Household owns a radio player	0.46	0.46	-0.22	6=Other	0.04	0.12	-0.14
Household owns a colour television	0.69	0.51	0.29	Main source of drinking water:			
Household owns a washing machine	0.21	0.33	0.02	1=Piped into residence	0.39	0.49	0.50
Household owns a satellite dish	0.21	0.31	0.12	2=Rain water	0.12	0.32	0.02
Household owns land	0.62	0.52	-0.09	3=Public tap	0.19	0.4	0.08
Household owns a car	0.21	0.4	0.13	4=Vendor	0.02	0.2	-0.17
Household owns a fan	0.19	0.39	0.07	5=River/canal/spring	0.20	0.41	-0.63
Household owns a wardrobe	0.47	0.41	0.14	6=Other	0.03	0.29	-0.14
Household owns a bicycle	0.51	0.5	-0.04	Household main toilet facility:			
Household floor type: 1=Earth floor	0.24	0.41	-0.60	1=Private flush	0.24	0.43	0.49
2=Wooden floor	0.012	0.24	0.03	2=Shared flush	0.10	0.31	0.07
3=Tiled floor	0.22	0.41	0.32	3=Own pit latrine	0.50	0.5	-0.31
4=Cemented floor	0.48	0.44	0.31	4=Shared pit latrine	0.10	0.3	-0.23
6=Other	0.09	0.21	0.07	Main source of cooking energy:			
Wall type: 1=Stone/ block/cement	0.50	0.51	0.51	1=Electricity/gas/solar	0.21	0.47	0.33
2=Mud bricks	0.24	0.43	0.09	2=Biogas/kerosene/charcoal	0.40	0.49	0.39
3=Mud and stick	0.21	0.33	-0.79	3=Firewood	0.30	0.48	-0.77

Source: Field Data, 2016

We also collected data on pupils' academic achievement in Kenya Certificate of Primary Education (KCPE) from 2015 Kenya National Examination Council consolidated mark sheets available from the sampled schools. The obtained KCPE scores are used as pupils' academic achievement. The pupils KCPE score is the dependable variable measured at interval scale. The data is presented in Table 2.

Table 2: Class Eight Pupils KCPE Scores in 2015

	N	Minimum	Maximum	Mean Mark
English	300	35	79	49.75
Kiswahili	300	32	81	52.52
Mathematics	300	34	86	48.55
Science	300	30	88	53.56
Social studies & Religion	300	36	85	51.68
Mean	300	33.4	83.8	256.06

Source: Field Data, 2016

3. Discussion of Findings

We use pupils KCPE index numbers to match their SES and KCPE scores. We use this data to test the null hypothesis that parental socio-economic status has no statistically significant effect on pupil's academic achievement in public primary schools in Bungoma Central Sub County using a multiple linear regression analysis (MLRA). We interpret our results at $p = 0.05$ on a two tailed test. The results of MLRA are presented in Table 3.

Table 3: Multiple Linear Regression Coefficients of the Effect of Parental SES on Pupils Academic Achievement in KCPE

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1.339	2	.670	4.208	.006 ^b
Residual	47.257	298	.159		
Total	48.597	300			

Coefficients^a

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.695	1.41		.668	.000
High SES	.631	.551	.602	2.896	.000
Middle SES	.596	.231	.531	.515	.003
Low SES	.533	.220	.421		
Sample Size	R	R Square	Adjusted R Square	SEM	Sig.
300	.455	.371	0.312	.675 ^a	.0012

a. Dependent Variable: Pupils Academic Achievement in KCPE

b. Predictors: (Constant), Parental SES

SEM=Standard Error of Mean

Source: SPSS Output, 2016

The results of the multiple regression model in Table 3 showed that the constant of regression was significant at $p=0.05$, an indication that the model captured all the pertinent variables that explained the variations in pupils academic achievement in KCPE in Bungoma Central Sub-County. The F-statistic ($F(2, 298) = 4.208, p=0.006$) indicated that the R^2 for the model was significantly different from zero at $p=0.05$.

This implies that all the coefficients in the model were significantly different from zero and were important in explaining the variation in pupils' academic achievement in KCPE in Bungoma Central Sub-County. Therefore, we rejected the null hypothesis that parental socio-economic status has no statistically significant effect on pupil's academic achievement in public primary schools in Bungoma Central Sub County. The results of the MLRA showed that parental socio-economic status had a statistically significant effect on pupil's academic achievement in public primary schools in Bungoma Central Sub County. The variable explained 31.2% of the variations in pupil's academic achievement in public primary schools in Bungoma Central Sub County other factors held constant.

The results in Table 3 revealed that pupils from high SES were predicted to do better in KCPE than those from the middle and low socioeconomic statuses. Similarly, pupils from the middle SES were predicted to have high KCPE scores compared to those from low SES. The results showed that high SES, middle SES and low SES accounted for 0.602, 0.531 and 0.421

respectively in the variations of class eight pupils academic achievement in KCPE. Therefore, the results suggested that for pupils from high SES their probability of performing well in KCPE is 60.2% while those from middle socio economic status was 53.1% while those from low class had a probability of 42.1%. Further, the results revealed that pupils from high SES were predicted to have 7.1% and 18.1% advantage to perform better in KCPE over their counter parts in the middle SES and low SES respectively.

Similarly, pupils from the middle SES were predicted to have 11% advantage in performing better in KCPE over their counter parts in the low SES. These clearly indicate that parental socio economic status is statistically significant in predicting pupil's academic achievement in KCPE in Bungoma Central Sub-County. The three constructs of parental SES were statistically significant at $p=0.05$. The results clearly suggest disparities in pupils' academic achievement in KCPE in the sub-county with those from high SES dominating the high scores. This has a spillover effect on equity in education opportunities in the higher levels and the potential of creating unequal societies.

The results are in line with studies done in the West. For instance, a study by Musarat, et al. (2013) indicates that parental SES had an effect on students' academic achievement. Studies done in Pakistan (Suleman et al., 2012; Farooq et al., 2011; Akhtar, & Hamid, 2011) had similar results. In Africa, studies by (Igbo et al., 2014; Osonwa et al., 2013) also showed similar results. In Kenya, a study by Jagero et al. (2014) found similar results. However, other studies have shown contrary results.

For instance, a study by Adewale (2012) in Nigeria found that parental socio economic status had no significant relationship with the academic performance of students. In Kenya, a study by Ogweno (2014) found out that, families with the lowest monthly income had higher mean score compared to those from families with the highest monthly income. The difference in the findings can be attributed to the sample size used, the school environment and the respondents used. Most of the studies reviewed used data from secondary school students. This study used data from primary school pupils and KCPE scores.

We therefore modeled pupils' academic achievement in KCPE as a function of parental SES using the regression equation: $y_i = \beta_0 + \beta_{1i}x_{1i} + \dots + \beta_{ki}x_{ki} + \varepsilon_i$; as: $y_i = 0.695 + 0.602x_1 + 0.531x_2 + 0.421x_3 + 0.141$ for $i = 1 \dots n$; and $y_i =$ pupil academic achievement in KCPE of i^{th}

pupil; β_0 = the intercept (constant); β_{1i} = the slope (Beta coefficient) for x_{1i} ; x_{1i} = the first explanatory variable that is explaining the variance in y for the i^{th} pupil; $\beta_{ki}x_{ki}$ = the k^{th} slope for the k^{th} explanatory variable for the i^{th} pupil. ε_i = error term for individual pupil assuming that the variance is constant and is independent of covariates (explanatory variables).

4. Conclusion and Policy Recommendation

The findings revealed that parental socioeconomic status had a statistically significant effect on pupils' academic achievement in KCPE. This paper therefore asserts that variations in pupils scores in KCPE are accounted by their parental SES and those pupils from high SES would post better scores in KCPE than their counterparts in the middle SES or low SES. Therefore, there is need to institute programs that target pupils in the middle and low SES in Bungoma Central Sub-County to cushion them from poor performance in KCPE due to their family poor backgrounds. Such children could be identified and enrolled in boarding schools or still be supported financially through bursaries. Still, their parents could also be financially empowered through the existing programs at national and country governments. This may in the long run address the growing disparities in access to education opportunities at all levels and create a just society.

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