INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH & DEVELOPMENT

ISSN: 2278 – 0211 (Online)

Factors Influencing Choice Of Technical Subjects Among The Secondary School Graduates In Kenya

Werunga Kikechi
Department Of Educational Planning And Management, Masindemuliro University Of Science And Technology, Kenya
Alice Owano
Department Of Educational Planning And Management, Masindemuliro University Of Science And Technology, Kenya
T. M. O. Ayodo
Faculty of Education, Arts and Theology, Kabarak University, Kenya
Epari Ejakait
Department Of Educational Planning And Management, Masindemuliro University Of Science And Technology, Kenya

Abstract:
Provision of technical subjects in secondary schools is part of an effort by the Kenya government to equip secondary school graduates (SSG's) with technical and entrepreneurial skills. This is aimed at assisting the graduates who miss out on higher education to easily transit to the world of work. We ran a Multinomial logistic regression (MLR) on a data from a sample of 186 teachers and 393 SSG's (SSG's) in order to determine the factors influencing the choice of technical subjects among the SSG's in Kenya. The study was carried out in Mombasa and Bungoma counties with the SSG's of 2009, 2010 and 2011.We established that; school type, gender, parents' occupation, the school location and whether students are told the subject objectives or not were the main driving factors that influenced the choice of technical subjects at school level. We recommend that adequate academic and career guidance and counseling should be given to students before they select subjects in schools. Efficient guidance and counseling departments should therefore be set up in schools to render appropriate academic and career counseling services to students.

Key words: *Technical subjects; SSG's; School-based factors; Parental factors; Individual factors; Multinomial logistic regression*

1.Introduction

According to Okeke (2000) parents had a significant effect on students' choice of career and subjects. Parents' characteristics played a vital role in students' choice of technical subjects. Parents had a crucial task of preparing the child for education. In their task of socializing the child's parents had a greater influence on the child's development and future life choices (Mabunda, 2002). Elsworth, Harvey-Beavis, Ainley andFabris (1999) observe that students were more likely to be enrolled in Economics and Business, and Home Science if they came from lower socioeconomic status backgrounds.

Mohd, Salleh and Mustapha (2010) also affirms that family members can provide information and guidance, directly or indirectly to influence a young person's choice of career. Family members' career choices influence students' career decision and form a strong belief in what kinds of career are the best for the students. This is supported by Anderson and Gilbride (2007) who stated that knowledge about engineering was correlated to having an engineer in the family.

Rayne (1982) observed that, there must be some credible role models in the community who imparted in the mind of individuals the benefits of self- employment as a career. Hardy (1984) also observed that, lack of role models was a limiting factor in the career choices of young people; and that business ownership emerges more readily in the presence of strong entrepreneurial role models. The abundance of successful independent businesses acted as role models in the community and a contributing factor in students' choice of technical subjects in schools.

AccordingWhitelaw, Milosevec and Daniels (2000), gender was probably the most important variable related to pupils' attitudes to science and technology subjects. Many studies, for instance, Francis and Greer (1999) and Jones, Howe and Rua (2000) reported that males had more positive attitudes toward science and technology subjects than females.

Peer group effects on pupils' achievement in school had been widely reported (Hoxby, 2000; Robertson & Symons, 2003). These effects on achievement may have spillover effects on subject choice. In addition, a student's choice of subject may be influenced by

the aspirations of their peer group or through the expectations that schools had for that peer group. School managers believed that certain subjects were more appropriate for the type of pupils that attended their school (Davies, Adnett& Turnbull, 2003).

Ozioma (2011) observed that the level of interest in students and the position of the parent in the society sometimes influenced student's interest in the study of vocational subjects.Students whose parents were educated did not want to study vocational or technical subjects. The study observed that the family into which a child was born exerted a profound influence on the child's career. Ozioma further observed that shortage or absence of guidance counselors in some schools influenced the study of vocational subject in secondary schools. As a result most students, who were skilled and had the ability to study vocational or technical subjects, were not counseled to enroll in subjects that they would do better.

Indoshi, Wagah and Agak (2010) found that: schools lacked materials, equipment and facilities; the subject was expensive to implement and the time allocated for Art and Design was too short to handle the practical aspect of the subject. Many schools were not willing to offer the subject because most learners seemed to be uninterested in it.

A study by Owoyele and Toyobo (2008) points out that parental will, peer pressure and academic ability- when combined significantly predicted students' choice of school subjects at the senior secondary school level. In their analysis they further revealed that, peer pressure was the most potent predictor, followed by parental will, while academic ability was the least predictor of students' choice of school subjects.

According to Nyangi (2012) the factors that deterred the students from choosing a home science subject were lack of interest, the subject being too involved in theory and the acquisition of practical skills, inadequate facilities, lack of interest among home science teachers and teachers unqualified to teach the subject. The results also revealed that, most schools did not have a set criterion for selecting home science students. The results further showed that the attitude of students and teachers towards the subject was positive, and student enrollment in the home science subject was not consistent while the trend was on the decline. Therefore some measures needed to be taken to improve the level of student enrollment in the home science subject. This could be done by encouraging both male and female students to join the profession at all levels of the educational system.

2.Methodology

The study utilized an exploratory-descriptive survey research design. Nieswiadomy (2008) observed that exploratory research design is used when there is limited knowledge in the topic under study. On the other descriptive survey research design was also chosen because it involves collecting data in order to test the hypotheses or answering questions concerning the current status of the subjects of the study. Kerlinger, (2000), Cohen and Manion (1994) and Gay (1992) note that the descriptive survey research design seeks to identify the nature of factors involved in a given situation, determine the degree in which they exist and discover the links that exist between them. The research design was relevant in this study because it aided the researcher in determining the factors influencing the choice of technical subjects among the SSG's in Kenya.

2.1.The Sample Size And Sampling Procedure

In an ideal situation, data should have been collected from the whole target population in the two counties - Mombasa and Bungoma. But since the population was too large and scattered it was prohibitively expensive to use the whole population in the study. It was also not necessary and practical to make a list of the entire population. Under these circumstances, using Krejcie and

Morgan (1970) table for determining sample sizes from any given population, a sample of 186teachers and 375 SSG's were selected from a target population of 367 teachers and 14,590 SSG's who sat for their Kenya Certificate of Secondary Education (KCSE) in the years 2009, 2010 and 2011 in technical subjects. The sample size of the SSG's increased by five percent, hence 393, to take care of any questionnaires that would have gotten lost during data collection. Probability proportional to size (PPS) sampling technique was then used to determine the sample size per County, subject and gender for the SSG's. The sub sample proportions of the SSG's and teachers who teach technical subjects by county and gender were as shown in the Table 1.

Category		**Study Population**			**Total**
		Bungoma County		**Mombasa County**	
	Male	Female	Male	Female	
Teachers	114	50	7	15	186
Secondary School Graduates	173	169	27	24	393

Table 1: Study Sample Of Secondary School Graduates And Teachers Who Teach Technical Subjects

Snowball sampling techniques were used to trace the respondents. For the teachers, stratifiedrandomsampling technique was used. These enabled teachers teaching different technical subjects to be represented in the study in addition to having an equal chance of being picked on as respondents.

2.2.Data Collection Instruments

Questionnaires were used to collect data from SSG's and teachers of technical subjects. Given that the respondents were literate and had no problem in reading and answering the questionnaire, it was of great importance to use a questionnaire to save on time when the sample size was as big as 393and 186 for SSG's and teachers respectively. The questionnaires for the SSG's and teachers generated their personal data and opinions on what influences the choice of technical subjects in secondary schools.

3.Results And Discussions

The SSG's in the two counties (Mombasa and Bungoma) were provided with a list of factors that might have influenced their choice of technical subjects and requested to indicate whether they had an influence on their choice of technical subjects or not. They were also requested to add any other factor that they felt affected their choice of technical subject other than the ones listed for them. Several factors were found to influence the SSG's into taking the technical subjects while at school. The factors were analyzed in the subsequent sub headings by first looking at their frequency and percentage distribution in the sample.

3.1.Technical Subjects Pursued By The Secondary School Graduates

The technical subjects pursued by the SSG's in the two counties (Mombasa and Bungoma) were as summarized in Table 2.

		Mombasa county		Bungoma county	
No	**Technical subject**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
1	Home science	20	31.75	65	19.7
2	Art and design	5	7.94	32	9.7
3	Agriculture	7	11.11	170	51.52
4	Woodwork	7	11.11	11	3.33
5	Metal work	3	4.76	2	0.61
6	Building construction	1	1.59	15	4.55
7	Power mechanics	1	1.59	1	0.3
8	Electricity	1	1.59	4	1.21
9	Drawing and design	7	11.11	1	0.3
10	Computer studies	11	17.45	29	8.78
Total		63	100.0	330	100.0

Table 2: Secondary School Graduate's Choice Of Technical Subject By County

The results in Table 2 show that while Mombasa County was dominated by SSG's who took home science (31.75%), Bungoma County was dominated by those who took agriculture (51.52%) and home science (19.7%). The findings of Bungoma County are not surprising because it is a rural county and agriculture is its main economic activity hence students might tend to be biased towards agriculture as a subject.

3.2.Type Of Former Secondary School

Table 3 presents the type of former public secondary schools that were enrolled in by the SSG's in Bungoma and Mombasa counties.

Type of secondary school	**Mombasa**		**Bungoma**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Single sex boarding	8	12.7	166	50.3
Mixed day	23	36.51	59	17.88
Mixed boarding	0	0	26	7.88
Single sex day	32	50.79	6	1.82
Mixed day & boarding	0	0	73	22.12
Total	63	100	330	100

Table 3: Secondary School Graduates Type Of Former School By County

Majority of the SSG's in Mombasa County were from single sex day schools (50.79%) which sharply differs with Bungoma County that had a majority of its graduates coming from single sex boarding secondary schools (50.30%).

3.3.Descriptive Statistics

A measure of central tendency (mean) for selected variables was computed to summarize and give a figure which represented the whole data. Measures of dispersion (SD, Variance and Range) were computed to understand the variability or spread of distribution of variables.

Variable	Mean	Se (mean)	SD	Variance	N	Range	Min	Max
Subject	3.634	0.137	2.719	7.391	393	9	1	10
School type	2.374	0.079	1.560	2.434	393	4	1	5
Bungoma	0.840	0.019	0.367	0.135	369	1	0	1
Urban	0.265	0.022	0.442	0.195	393	1	0	1
Female	0.417	0.025	0.494	0.244	392	1	0	1
KCSE Year	2.033	0.036	0.715	0.512	393	2	1	3
Whether told objectives	0.638	0.024	0.481	0.232	393	1	0	1
Parents dead or alive	1.590	0.050	0.994	0.987	393	3	0	4
Encouraged by parents	0.574	0.025	0.495	0.245	393	1	0	1
Advised by parents	0.575	0.025	0.495	0.245	393	1	0	1
Parents occupation	0.333	0.024	0.472	0.223	393	1	0	1
Role models	0.555	0.025	0.498	0.248	393	1	0	1
Influenced by a friend,	0.204	0.020	0.403	0.163	393	1	0	1
subject's KCSE performance	0.275	0.023	0.447	0.200	393	1	0	1
guided by the teacher	0.372	0.024	0.484	0.234	393	1	0	1
Subject was compulsory	0.025	0.008	0.158	0.025	393	1	0	1
Number of teachers	0.196	0.020	0.397	0.158	393	1	0	1
availability of facilities	0.359	0.024	0.480	0.231	393	1	0	1
Personal interests	0.753	0.022	0.432	0.186	393	1	0	1
Subject's future value.	0.730	0.022	0.444	0.197	393	1	0	1
To acquire new knowledge	0.649	0.024	0.478	0.228	393	1	0	1
KCPE score	0.109	0.016	0.313	0.098	393	1	0	1
Note: Se (Mean) = Standard error of the mean, SD = Standard deviation, N = Sample size, Min = Minimum, Max = Maximum								

Table 4: Descriptive Statistics For Variables Used In The Analysis

It can also be observed that majority of the SSG's were previously in a mixed day (mean = 2.374, SD = 1.560). The SSG's also acknowledged that being told the technical subject objectives (Mean = 0.638, SD = 0.481), subject's future value (Mean = 0.730, SD = 0.444) and personal interest in the technical subject (Mean = 0.753, SD = 0.432) influenced their choice of the subject.This was followed by looking at their association with the dependent variable through a chi-square and lastly fitting those that had moderate or strong relationship in a MLR model to estimate their effect size on choice of technical subject by SSG's.

3.4.Chi-Square Results

Chi- square tests of all the variables used in the study were determined to show their relationship with the independent variable (technical subjects). The results were as summarized in Table 8. The chi-squares helped the researcher to determine which plausible association (association between variables) to pursue in the MLR model.A Cramer's V of less than 0.20 was generally considered a weak relationship, 0.20-0.49 was considered moderate and values more than 0.49 were considered strong relationships.The following variables were significant and had a moderate or strong relationship with the choice of technical subjects: type of secondary school enrolled in [$\chi 2$ (9) = 76.76, p<.001, Cramer's V = 0.24, N=393], Bungoma County [$\chi 2$ (9) = 74.24, p<.001, Cramer's V = 0.44, N=393], urban school [$\chi 2$ (9) = 46.13, p<.001, Cramer's V = 0.34, N=393], told subjects objectives [$\chi 2$ (18) = 21.09, p<.012, Cramer's V = 0.23, N=393], parents advice [$\chi 2$ (9) = 17.19, p<.046, Cramer's V = 0.21, N=393], parents' occupation [$\chi 2$ (9) = 19.49, p<.021, Cramer's V = 0.22, N=393]and female [$\chi 2$ (9) = 148.23, p<.001, Cramer's V = 0.61, N=393]. Thus, only variables with a moderate or strong relationship were fitted in the MLR analysis.

Association between	χ^2	df	P	Cramer's V
Technical subject and school type	76.76	9	<.001	0.24
Technical subject and Bungoma County	74.24	9	<.001	0.44
Technical subject and urban school	46.13,	9	<.001	0.34
Technical subject and female	148.23	9	<.001	0.61
Technical subject and KCSE year	20.17	18	0.323	0.16
Technical subject and if told subject objectives	21.09	18	0.012	0.23
Technical subject and if parents are dead or alive	17.38	27	0.921	0.12
Technical subject and influence of parents advice	17.19	9	0.046	0.21
Technical subject and parents occupation	19.49	9	0.021	0.22
Technical subject and influence of role models	9.20	9	0.419	0.15
Technical subject and peer group influence	6.94	9	0.644	0.13
Technical subject and subjects KCSE performance	21.09	9	0.900	0.10
Technical subject and guidance by career teacher	7.78	9	0.557	0.14
Technical subject and subject being compulsory	11.45	9	0.246	0.17
Technical subject and number of teachers	7.56	9	0.579	0.14
Technical subject and availability of facilities	7.19	9	0.618	0.14
Technical subject and my interest in the subject	7.33	9	0.602	0.14
Technical subject and future value of subject	4.36	9	0.886	0.11
Technical subject and acquiring new knowledge	16.22	9	0.062	0.19
Technical subject and KCPE score	10.47	9	0.314	0.16

Table 5: Chi-Square Results For The Association Between Technical Subject And Selected Variables

3.5.Multinomial Logistic Regression Analysis Of The Factors Influencing The Choice Of Technical Subjects In School

The preferred statistical approach for this analysis was to fit a MLR as shown in Table 6 where the dependent variable is a 10-level unordered categorical variable (technical subject), while the independent variable (type of school) was a 5-level unordered categorical variable. MLR is a categorical data analysis used when there are three or more unordered categories in the outcome variable.

MLR is often considered an attractive analysis because; it does not assume normality, linearity, or homoscedasticity. For easier analysis, the other factors that influenced graduates choice of technical subjects were therefore broadly grouped into three categories namely: school based factors; parental factors and individual characteristics. Table 6 gives adescription of variables used in the multinomial logistic regression model.

Variable name	Variable label	Variable description
subject	Type of subject	categorical variable, 1=home science, 2=art and design, 3=Agriculture, 4=Woodwork, 5=Metal work, 6=Building construction, 7=Power mechanics, 8=Electricity, 9=Drawing and design, 10= Computer studies
bungoma	bungoma county	binary variable, 0=mombasa county; 1=bungoma county
urbansch	urban school	binary variable, 0=rural, 1=urban
female	Female	binary variable, 0=male; 1=female
schtype	type of secondary school	categorical variable, 1=Single sex boarding; 2=Mixed day; 3=Mixed boarding; 4=Single sex day; 5=Mixed day & boarding

Variable name	Variable label	Variable description
objosub	told subject objectives	binary variable, 0=no, 1=yes
parentets	parent encouraged technical subject	binary variable, 0=no, 1=yes
parentsoittts	influenced by my parents occupation	binary variable, 0=no, 1=yes

Table 6: Description Of Variables Used In The Multinomial Logistic Regression Model

	Home science vs Agriculture			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Type of school: Single sex boarding (ref)				
Mixed day	1.07 [.53, 2.13]	0.69 [.32, 1.47]	0.4* [.16, .99]	0.4* [.16, .99]
Mixed boarding	0.27† [.06,1.26]	0.33 [.072,1.54]	0.25 [.05,1.34]	0.28 [.05,1.49]
Single sex day	14.93** [.15,70.47]	5.27† [.96,28.89]	8.96* [1.28,62.94]	10.57* [1.52,73.72]
Mixed day & boarding	1.43 [.74,2.81]	1.31 [.64,2.68]	0.75 [.32,1.76]	0.8 [.34,1.92]
Bungoma		0.23* [.06,.94]	.21† [.04,1.07]	0.23† [.05,1.18]
Urban school		1.06 [.39,2.90]	1.01 [.32,3.21]	1.1 [.34,3.54]
Told subject objectives		0.56† [.31,1.01]	0.5† [.25,1.01]	0.48* [.24,1.00]
Female			33.93*** [12.42,92.71]	37.48*** [13.27,105.86]
Parents encouraged technical subject				1.67 [.86,3.28]
Influenced by parents occupation				1.11 [.56,2.20]

	Art and design vs Agriculture			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Type of school: Single sex boarding (ref)				
Mixed day	0.29* [.10,.90]	.22* [.067,.72]	.28* [.08,.94]	.28* [.08,.94]
Mixed boarding	[n/a]	[n/a]	[n/a]	[n/a]
Single sex day	4.62 [.73,29.22]	2.14 [.267,17.11]	6.35 [.68,58.95]	2.36 [.26,21.43]
Mixed day & boarding	0.41† [.14,1.14]	.39† [.13,1.15]	.74 [.13,4.14]	.54 [.18,1.68]
Bungoma		.30 [.05,1.90]	.38 [.04,3.40]	.42 [.06,2.99]
Urban school		1.06 [.39,2.90]	1.08 [.32,3.68]	1.09 [.31,3.87]
Told subject objectives		.74 [.33,1.68]	.83 [.37,1.88]	.89 [.38,2.06]
Female			.12** [.03,.54]	.11**[.03,.48]
Parents encouraged technical subject				.55 [.25,1.21]
Influenced by parents occupation				.37* [.15,.89]

	Woodwork vs Agriculture			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Type of school: Single sex boarding (ref)				
Mixed day	1.05 [.29,3.79]	0.55 [.13,2.28]	.82 [.19,3.44]	.79 [.18,3.42]
Mixed boarding	[n/a]	[n/a]	[n/a]	[n/a]
Single sex day	27.49*** [4.49,168.51]	8.12† [.93,71.34]	6.35 [.68,58.95]	8.39† [.87,81.24]
Mixed day & boarding	0.58 [.12,2.92]	0.48 [.09,2.64]	.74 [.13,4.14]	.75 [.13,4.34]
Bungoma		0.40 [.05,3.34]	.38 [.04,3.40]	.48 [.05,4.53]
Urban school		2.02 [.38,10.81]	2.02 [.36,11.23]	1.92 [.33,11.13]
Told subject objectives		0.26* [.08,.79]	.28* [.09,.87]	.31* [.10,.96]
Female			[n/a]	[n/a]
Parents encouraged technical subject				.56 [.17,1.77]
Influenced by parents occupation				.53 [.15,1.85]

	Metalwork vs Agriculture			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Type of school: Single sex boarding (ref)				
Mixed day	1.83 [.25,13.49]	.65 [.06,6.69]	.82 [.08,8.91]	.75 [.06,9.37]
Mixed boarding	[n/a]	[n/a]	[n/a]	[n/a]
Single sex day	19.24* [1.19,310.45]	2.22 [.09,56.10]	1.49 [.05,41.99]	1.62 [.05,55.69]
Mixed day & boarding	[n/a]	[n/a]	[n/a]	[n/a]
Bungoma		[n/a]	[n/a]	[n/a]
Urban school		[n/a]	[n/a]	[n/a]
Told subject objectives		1.29 [.17,9.57]	1.31 [.17,9.97]	1.84 [.21,15.97]
Female			[n/a]	[n/a]
Parents encouraged technical subject				.19 [.02,1.96]
Influenced by parents occupation				.82 [.07,9.79]

	Building construction vs Agriculture			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Type of school: Single sex boarding (ref)				
Mixed day	0.13† [.02,1.03]	.10 [.011,.84]	.13 [.01,1.15]	.13† [.01,1.16]
Mixed boarding	0.31 [.04,2.48]	.40 [.05,3.34]	.44 [.05,3.83]	.38 [.04,3.42]
Single sex day	[n/a]	[n/a]	[n/a]	[n/a]
Mixed day & boarding	[n/a]	[n/a]	[n/a]	[n/a]
Bungoma		1.06 [.09,13.03]	1.02 [.08,13.70]	1.31 [.10,17.84]
Urban school		4.24* [1.3,13.85]	4.34* [1.28,14.74]	4.7* [1.34,16.76]
Told subject objectives		.51 [.15,1.72]	.62 [.18,2.15]	.64 [.18,2.29]
Female			[n/a]	[n/a]
Parents encouraged technical subject				.88 [.28,2.78]
Influenced by parents occupation				.41 [.12,1.47]

	Power mechanics vs Agriculture			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Type of school: Single sex boarding (ref)				
Mixed day	[n/a]	[n/a]	[n/a]	[n/a]
Mixed boarding	[n/a]	[n/a]	[n/a]	[n/a]
Single sex day	[n/a]	[n/a]	[n/a]	[n/a]
Mixed day & boarding	[n/a]	[n/a]	[n/a]	[n/a]
Bungoma		[n/a]	[n/a]	[n/a]
Urban school		[n/a]	[n/a]	[n/a]
Told subject objectives		.42 [.16,11.25]	.48 [.02,12.28]	.72 [.03,15.59]
Female			3.88 [.17,91.06]	3.72 [.10,137.69]
Parents encouraged technical subject				[n/a]
Influenced by parents occupation				2.30 [.10,52.57]

	Electricity vs Agriculture			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Type of school: Single sex boarding (ref)				
Mixed day	[n/a]	[n/a]	[n/a]	[n/a]
Mixed boarding	[n/a]	[n/a]	[n/a]	[n/a]
Single sex day	9.62† [.71,129.84]	3.53 [.12,102.07]	2.36 [.032,172.24]	11.88 [.07,1891.06]
Mixed day & boarding	[n/a]	[n/a]	[n/a]	[n/a]
Bungoma		[n/a]	[n/a]	[n/a]
Urban school		[n/a]	[n/a]	[n/a]
Told subject objectives		[n/a]	[n/a]	[n/a]
Female			[n/a]	[n/a]
Parents encouraged technical subject				2.45 [.17,35.45]
Influenced by parents occupation				[n/a]
	Drawing and design vs Agriculture			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Type of school: Single sex boarding (ref)s				
Mixed day	[n/a]	[n/a]	[n/a]	[n/a]
Mixed boarding	[n/a]	[n/a]	[n/a]	[n/a]
Single sex day	[n/a]	[n/a]	[n/a]	[n/a]
Mixed day & boarding	[n/a]	[n/a]	[n/a]	[n/a]
Bungoma		[n/a]	[n/a]	[n/a]
Urban school		[n/a]	[n/a]	[n/a]
Told subject objectives		1.82 [.33,9.90]	1.87 [.34,10.30]	2.14 [.37,12.54]
Female			3.61 [.17,91.06]	3.61 [.52,24.89]
Parents encouraged technical subject				0.45 [.07,2.92]
Influenced by parents occupation				.26 [.02,2.76]

	Computer studies vs Agriculture			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Type of school: Single sex boarding (ref)				
Mixed day	1.31 [.54,3.20]	.96 [.36,2.56]	.98 [.37,2.61]	1.07 [.40,2.2]
Mixed boarding	.92 [.24,3.53]	1.07 [.27,4.20]	1.06 [.27,4.18]	.93 [.23,3.76]
Single sex day	19.25** [3.62,102.39]	7.41* [1.14,48.35]	6.98* [1.04,46.96]	9.88* [1.41,69.28]
Mixed day & boarding	0.87 [.31,2.44]	1.15 [.39,3.45]	1.14 [.38,3.43]	1.33 [.43,4.10]
Bungoma		.36 [.08,1.68]	.37 [.08,1.75]	.47 [.10,2.28]
Urban school		2.35 [.81,6.8]	2.33 [.81,6.72]	2.54† [.86,7.54]
Told subject objectives		1.16 [.51,2.63]	1.15 [.51,2.61]	1.16 [.50,2.68]
Female			1.00 [.46,2.17]	.91 [.41,2.01]
Parents encouraged technical subject				1.22 [.57,2.63]
Influenced by parents occupation				.23**[.09,.60]
Pseudo R2	0.09	0.13	0.26	0.29
†p<.10, *p<.05, **p<.01, ***p<.001; Note: n/a = not applicable				

Table 7: Multinomial Logistic Regression Coefficients Of Factors Driving Choice Of Technical Subjects (N=393, 95% Confidence Interval In Parenthesis)

- **Choice of Home Science over Agriculture**

  Model 1 point out that the type of school enrolled in has some effect on subject choice. The relative risk ratio of choosing home science over agriculture increased by 14.93 times (p<. 01) for respondents who attended single sex day school relative to those who attended single sex boarding schools. The relative risk ratio of choosing home science over agriculture decreases 0.27 (p<. 10) times for respondents who attended mixed boarding school over those who attended single sex boarding schools. In Model 2, when we control for Bungoma County the effect of single sex day schools on the choice of home science over agriculture remains when compared to single sex boarding schools. Model 2 further shows that the likelihood to enroll in home science over agriculture in Bungoma County compared to Mombasa County decreases by 0.23 (p<. 01). Interestingly when we control for gender (female) and parental factors in models 3 and 4 the relative risk ratio of choosing home science over agriculture increases by 8.96 (p<. 05) and 10.57 (p<. 05) times respectively for respondents who attended single sex day school relative to those who attended single sex boarding schools.

  Of the respondents who were in the Bungoma County as compared to Mombasa county the relative risk ratio of enrolling in home science decreased by a factor of 0.21 (p<. 10) when we control for gender and 0.23 (p<. 10) when we control for parental factors. On the other hand the relative risk ratio of choosing home science over agriculture increases by 33.93 (p<. 001) for females over males. It even increases further by a factor of 37.48 (p<. 001) when we control for parental factors in model 4. This implies that school type and gender are the main variables that did drive the selection of home science among SSG's in Bungoma and Mombasa counties. On the other hand, school type, the county in which the school is situated, and whether the students were told the subject objectives before they selected the subjects, did influence the selection of agriculture in both Bungoma and Mombasa County.

  This finding did not corroborate with the findings of Nyangi (2012) who established that the main factors that influenced the student's choice of home science subject were: good examination results, personal liking of the subject, promise of future career opportunities, own interest, parents, career teacher, home science teacher and home science providing a foundation for good family life.

- **Choice of Art and Design over Agriculture**

  Model 1 in Table 7 also points out that the relative risk ratio of choosing art and design over agriculture decreased by a factor of 0.29 (p<. 05) and 0.41 (p<. 10) for respondents who enrolled in a mixed day school and mixed boarding and day schools respectively over those who attended single sex boarding schools. In model 2, the same effect remains when we control for school factors such as the county in which the school is located (Bungoma County), whether the students were told the subject objectives before they selected the subjects (told subject objectives) and whether the school was in an urban area or a rural area (urban school). When we control for gender in model 3 and parental factors in model 4 the relative risk ratio of choosing art and design over agriculture decreases by a factor of 0.28 (p<. 05) in both models for respondents who enrolled in a mixed day school in reference to those who attended single sex boarding schools.

  In model 3, the relative risk ratio of choosing art and design over agriculture decreases by a factor of 0.12 (p<. 01) for

females as compared to males. It further reduces by a factor of 0.11 (p<. 01) for females over males when we control for parental factors. In model 4, the influence of parents' occupation also did reduce the chances of the respondents enrolling in art and design over agriculture (0.37; p<. 05). This implies that type of school, gender (female) and parents' occupation did influence the selection of agriculture over art and design.

- **Choice of Wood Work over Agriculture**
  Table 7 further points out that the relative risk ratio of choosing wood work over agriculture increased by 27.49 (p<. 001) times for respondents who chose to attend single sex boarding schools as compared to those who chose to attend single sex boarding schools. The same effect is replicated in model 2 where the relative risk ratio of choosing wood work over agriculture increases by 8.12 (p<. 10) when we control for gender (female). In model 4 the relative risk ratio of choosing wood work over agriculture also increases by 8.39 (p<. 10) when we control for parental factors.
  It can be also observed in model 2 that the relative risk ratio of choosing wood work over agriculture decreased by 0.26 (p<. 05) for respondents who were told the subject objectives. The relative risk ratio of choosing wood work over agriculture decreased even further when we controlled for gender, 0.28 (p<. 05), in model 3and when we controlled for parental factors, 0.31 (p<. 05), in model 4 for respondents who were told the subject objectives. This implies that type of school influenced the choice of wood work over agriculture while being told the subject objectives before selection of subjects did influence the respondents to select agriculture as their preferred technical subject over wood work.
- **Choice of Metal Work over Agriculture**
  Enrolling in a single sex day school in relation to enrolling in a single sex boarding school did increase the chances of the respondents taking metal work other than agriculture by a factor of 19.24 (p<. 05) as evidenced in model 1 in Table 7. The effect of school type on the selection of metal work over agriculture disappeared in models 3 and 4 when we did control for school and parental factors. This implies that there are other factors other than the ones under study that explain why the respondents preferred metal work over agriculture.
- **Choice of Building Construction over Agriculture**
  According model 1 the relative risk ratio of choosing building construction over agriculture decrease by a factor of 0.13 (p<. 10) for respondents who attended mixed day schools relative to those who attended single sex boarding schools. The relative risk ratio of choosing building construction over agriculture did increase by a factor of 4.24 (p<. 05) and 4.34 (p<. 05) in models 2 and 3 respectively for respondents who attended urban schools as compared to those who attended rural schools. The relative risk ratio of choosing building construction over agriculture did further increase by a factor of 4.7 (p<. 05) in models 4 for respondents who attended urban schools as compared to those who attended rural schools. This implies that the location of the school played a big role when selecting building construction over agriculture.
- **Choice of Power Mechanics over Agriculture**
  Models 1, 2, 3 and 4 could not give the outputs for school type (n/a) because all the respondents who took power mechanics were from single sex boarding schools which was the reference school type. Though the relative risk ratio of choosing power mechanics over agriculture did increase by a factor of 2.30 when we controlled for the influence of parents' occupation, the effect was not significant. According to model 1, the relative risk ratio of choosing electricity over agriculture increases by 9.62 (p<. 10) times for respondents who attended single sex day school relative to those who attended single sex boarding schools. All the respondents who took drawing and design were from single sex boarding schools and hence could not give outputs for a comparison with other school types. Despite this, when we control for school factors and gender, the relative risk ratio for choosing drawing and design over agriculture, though not significant, did increase for the respondents who were told subject objectives before they chose the subject and those who were female across the three models (2, 3 and 4).
- **Choice of Computer Studies over Agriculture**
  In Model 1 it can also be observed that the relative risk ratio of choosing computer studies over agriculture increases by 19.25 (p<. 01) times for respondents who attended single sex day school relative to those who attended single sex boarding schools. When we control for school factors in model 2, gender in model 3 and parental factors in model 4, the relative risk ratio of choosing computer studies over agriculture increases by a factor of 7.41, 6.98 and 9.88 respectively for respondents who attended single sex day school relative to those who attended single sex boarding schools, and are all significant at p<. 05. The relative risk ratio of choosing computer studies over agriculture also increases by 2.54 (p<. 10) times for those who were in urban schools as compared to those who were in rural schools. In the same vein the relative risk ratio of choosing computer studies over agriculture also decreases by 0.23 (p<. 01) times for those whose parents' occupation influenced their choice of computer studies. This implies that the school type and location of the school whether in urban or rural areas did influence the respondent's choice of computer studies as their preferred technical subject in secondary school. On the other hand parents' occupation influenced the choice of agriculture over computer studies among graduates. Thus, family members can provide information and guidance, directly or indirectly to influence a young person's choice of career. Family members' career choices influence students' career decision and form a strong belief in what kinds of career are the best for the students.

4.Conclusion

In conclusion the study established that the following factors did drive the selection of technical subjects among the SSG's in Bungoma and Mombasa counties: type of school, location of the school (whether urban or rural), county, when they are told subject objectives prior to the selection of the subject, gender, encouragement from parents and parents' occupation.

5.References

1. Anderson, L., &Gilbride, K., (2007). The future of engineering: A study of the gender bias. McGill Journal of Education, 42(1), 103-117.
2. Cohen, L., &Manion, L., (1994). Research methods in education (4th ed). London: Croom Helm.
3. Davies, P., Adnett, N., & Turnbull, A. (2003). Market forces and diversity: some evidence from the 14-19 curriculum, Journal of curriculum studies, 35(4):479 -498.
4. Elsworth, G. R., Harvey-Beavis, A., Ainley, J., &Fabris, S., (1999). Generic interests and school subject choice. Educational Research and Evaluation, 5: 290–318
5. Francis, L., & Greer, J., (1999). Measuring attitudes towards science among secondary school students: The affective domain.Journal of research in science teaching, 35(1): 877-896.
6. Gay, L. R., (1992). Educational research competencies for analysis and applications, (4thed). New York: Macmillan.
7. Hardy, C. (1984, April). Education for enterprise: blocks and ways forward. Paper delivered at national conference on education for enterprise held at Homerton College, Cambridge, 4-6.
8. Hoxby, C. (2000) Peer effects in the classroom: Learning from gender and race variation, NBER Working Paper, No. W7867, (August).
9. Indoshi, F. C., Wagah, M. O., &Agak, J. O. (2010). Factors that determine students' and teachers' attitudes towards art and design curriculum.International journal of vocational and technical education. 2 (1): 9-17.
10. Jones, G., Howe, A., &Rua, M., (2000).Gender differences in students' experiences, interests, and attitudes towards science and scientists.Science Education, 84(1): 180-192.
11. Kerlinger, F. N., (2000). Foundations of behavioural research (5th ed.), New Delhi: Holt, Rinehart and Winston.
12. Krejcie, R. V., & Morgan, W. D., (1970)."Determining sample size for research activities".Educational and psychological measurement, 30(3): 607-610.
13. Mabunda, N. P., (2002). The role of the school in preparing school leavers for self-employment. Unpublished DoctorialDissertation . University of south Africa. South Africa.
14. Mohd F., Salleh, A. M., & Mustapha, R., (2010). The Influence of Personal and Contextual Aspects on Career Decision Making of Malaysian Technical Students: Proceedings of the 1st UPI International Conference on Technical and Vocational Education and Training Bandung, Indonesia, 10-11 November 2010
15. Nieswiadomy, R., (2008). Foundations of research (5thed). New Jersey: Pearson P Hall
16. Nyangi, M., (2012) Factors that influence the trend of student enrolment in home science in Nairobi secondary schools. Kenyatta University: unpublished thesis
17. Okeke, A. N. (2000). The impact of school subjects on the choice of careers and profession. West African Journal of Education, 17 (1): 5 – 11.
18. Owoyele, J. W., & O.M. Toyobo, O. M., (2008).Parental will, peer pressure, academic ability and school subjects selection by students in senior secondary schools: The Social Sciences, 3(8) 583-586.
19. Ozioma, C. A., (2011). "Influential factors affecting the attitude of students towards vocational subjects in secondary schools in southeastern Nigeria".Journal of educational and social research.1(2): 49-56.
20. Rayne, R. A., (1982). The entrepreneur: an educational challenge. Search, 13(23):9 – 10
21. Van Wyk, N., (2001). Preparing South African educators for school-family-community partnerships.Educare, 30(1and 2): 115-139
22. Whitelaw, S., Milosevic, L., & Daniels, S., (2000). Gender behaviour and achievement: A preliminary study of pupil perceptions and attitudes. Gender and Education, 12 (1): 87 – 113.