

Theme : *Assessment And Decision-Making: Individual And Institutional Solutions*

Sub theme : *Opportunities and Challenges in Admission, Testing and Recruitment Policies in Public and Private Sector*

Topic : ***ISSUES AND CHALLENGES OF ACCESS AND MANAGEMENT OF ADMISSION OF STUDENTS TO TERTIARY INSTITUTIONS IN KENYA***

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ABSTRACT

The Kenyan Government has in the recent past introduced robust activities to increase openings for post school education and training. Based on the 2018 KCSE results, of the 651,189 high school leavers, 90,744 attained a mean grade of C+ and above and were qualified to join local universities, 121,288 who scored between C plain and C- in the 2018 KCSE examination are all eligible for diploma courses and the rest would join certificate and artisan courses. The purpose of the study was to examine the prospects of high school leavers, their parents and colleges, and to identify the factors influencing their preferences in selecting particular courses at universities and colleges. This ex post facto study gathered responses from the year 2016 to 2018 KCSE school leavers and their guardians, from 10 randomly samples schools in Nairobi which is the cosmopolitan capital city of Kenya. This resulted to 350 university/college students, 350 guardians of prospective students, and 100 university/college representatives being sampled. Two techniques, single mail-out with follow-up reminder letter and an administrator-assisted survey were applied to the distributed 800 questionnaires, out of 395 were responded to, a response rate of 49.38 percent. Expending the theory of planned behavior as a guide, respondents discussed the opportunities and challenges to the choices they made for courses. A qualitative analysis was conducted using a codebook to analyze the responses from the questionnaires and interview schedules. Higher education is perceived to be key to access to jobs which pay good salaries, confer social status and prestige, and provide avenues for social mobility. The Kenyan government is using higher education to improve on potential of poor communities, thus bridging the gap between the rich and the poor. Nonetheless, the increased public demand for tertiary education is abridged by inadequate opportunities, by having many programmes that do not impact on the positive economic outcomes. In conclusion, the interest of the school leavers are overridden by external interests, hence affecting morale and productivity

of graduates. The study recommends that there be more strengthened career choice sensitization at school level, and expansion of courses that have impact on the development of the country.

Key Words: Preferences, Tertiary Institutions, Prospects, Higher Education, Opportunities

1.0 Introduction

Kenya is a developing country heavily desiring to utilize available human resources to achieve its development goals. The 8-4-4 educational system used in Kenya was designed to achieve the goal of promoting development of individual skills and competencies. However, the choice of courses at tertiary institutions has been faced with numerous challenges, mainly emanating from choice of courses. Many students leaving high school have grades that more often than not, dictate on the courses the students pursue after school. The high university and college course fee urges has a great impact on students' course choice, not to mention the limited opportunities in competitive courses. Although students have wide range of alternatives on available courses at colleges and universities, there is scanty evidence that candidates make decisions for the right choice.

While students consider universities towards employment opportunities, intense competition prevails between universities in recruitment of intelligent students; hence students join the more prestigious colleges and universities. Consequently, better qualified students' pursue the same courses in more prestigious universities that have better human, service and physical services. For instance, candidates pursuing a degree in Medicine at the University of Nairobi have better facilities and lecturers than all other universities, yet low performing candidates end in universities with less facilities.

A mean grade of C+ and above qualifies to join local universities; those who scored between C plain are all eligible for diploma courses in tertiary colleges. Those who score below a KCSE mean of between D+ and C- may join may join artisan courses while those with lower grades are eligible to join artisan courses. The courses which seem to be more attractive in the job market include Architecture, Software Engineering, Nursing, Procurement and Logistics, Sales and Marketing. Other areas of interest include Epidemiology, Monitoring and Evaluation, Project Management, Graphic Design, GIS and Remote Sensing. There is also appreciable job market for Agricultural Economics, Quantity Surveying, Criminology and Forensic Science, Piloting and Aviation as well as Oil and Gas Engineering. However, there are only scanty opportunities for training in these areas.

2.0 Statement of the problem

The Kenyan Government has in the recent past introduced robust activities to increase openings for post school education and training. Based on the 2018 KCSE results, of the **651,189** high school leavers, **90,744** attained a mean grade of C+ and above and were qualified to join local universities, **121,288** who scored between C plain and C– in the 2018 KCSE examination are all eligible for diploma courses and the rest would join certificate and artisan courses. However, the job market in the country desires more technology based courses as they have an impact on industrialization levels in the country.

The number of candidates perusing some courses is more than others, mainly due to opportunities to study the courses. For instance, Economics is highly flooded in Kenya. It is estimated that over 3,000 people graduate with a degree in economics annually from local universities. Statistics on the other hand has numerous opportunities. Only less than 1,000 Kenyans graduate with a degree in statistics annually from local universities. It is reported that most economists end up as sales executives or insurance financial advisors because they have no option. While graduates with economics struggle to get a job of monthly income of \$500, the starting salary of a statistician in Kenya is \$700 monthly. At undergraduate level, statistics is more superior to economics but at PhD level, economists tend to earn more than statisticians and they are more respected. Most economists with PhD earn above \$6,000 while Statisticians with PhD earn \$2,500 to \$ 4,000.

3.0 Research Objectives

The purpose of the study was to examine the issues and challenges high school leavers have in selecting universities and colleges, and to identify the factors influencing their preferences in selecting particular courses at universities and colleges. The objectives of the study were:

- i. Establish the popularity of various types of courses in Kenyan Colleges and Universities;
- ii. Establish the factors affecting candidate's choice of courses at Kenyan Colleges and Universities;
- iii. Establish the influence of the course on choices made by candidates;
- iv. Determine the relationship between home background and career choice.

4.0 Literature Review

4.1 Choice and Decision Making of Students

Choice and decision making in higher education has gained greater importance because higher education has become competitive and market-oriented. The results of study conducted in Australia, argued that the enrolment choice heavily depends upon students' family background, their demographics and shifts from one learning environment to other. They also described that university selection depends upon university policies & values, standards &

assessments and expertise of staff. In the course context, course entry requirements, mode of teaching, staff and responses of other registered students in course form the foundation for choice of course. Robinson and Bornholt (2007) gave the theory for course pathway that students adopt while in selection of course which is;

Pathway Progression = Student characteristics × Time Frame for course × Course × Choice

On the other hand, they argued that students' social and financial background determine the choice for university and course. The choice is not a rational process, which is the central theme to discuss in this study. Choice is influenced by different factors and also has significant effect on decision making.

Kenya lacks a skills record organization that would deliver data on the labour market requirements. As such, the approach to project, develop and implement an ICT-based Management Information System (MIS) and ultimately tie it to the labour MIS will produce an permitting atmosphere for college education to prosper regardless of the learners' physical setting. Through a dynamic labour market information system, the country will attain optimal exploitation of available human resources. This information will also be useful in assigning resources to education and training institutions while answering to the needs of the labour market and demand driven training to fill current gaps.

4.2 Theory of planned behavior

Theory of Reasoned Action suggests that a person's behavior is determined by his/her intention to perform the behavior and that this intention is, in turn, a function of his/her attitude toward the behavior and his/her subjective norm. The best predictor of behavior is intention. Intention is the cognitive representation of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior. This intention is determined by three things: their attitude toward the specific behavior, their subjective norms and their perceived behavioral control. The theory of planned behavior holds that only specific attitudes toward the behavior in question can be expected to predict that behavior. In addition to measuring attitudes toward the behavior, we also need to measure people's subjective norms – their beliefs about how people they care about will view the behavior in question. To predict someone's intentions, knowing these beliefs can be as important as knowing the person's attitudes. Finally, perceived behavioral control influences intentions. Perceived behavioral control refers to people's perceptions of their ability to perform a given behavior. These predictors lead to intention. A general rule, the more favorable the attitude and the subjective norm, and the greater the perceived control the stronger should the person's intention to perform the behavior in question.

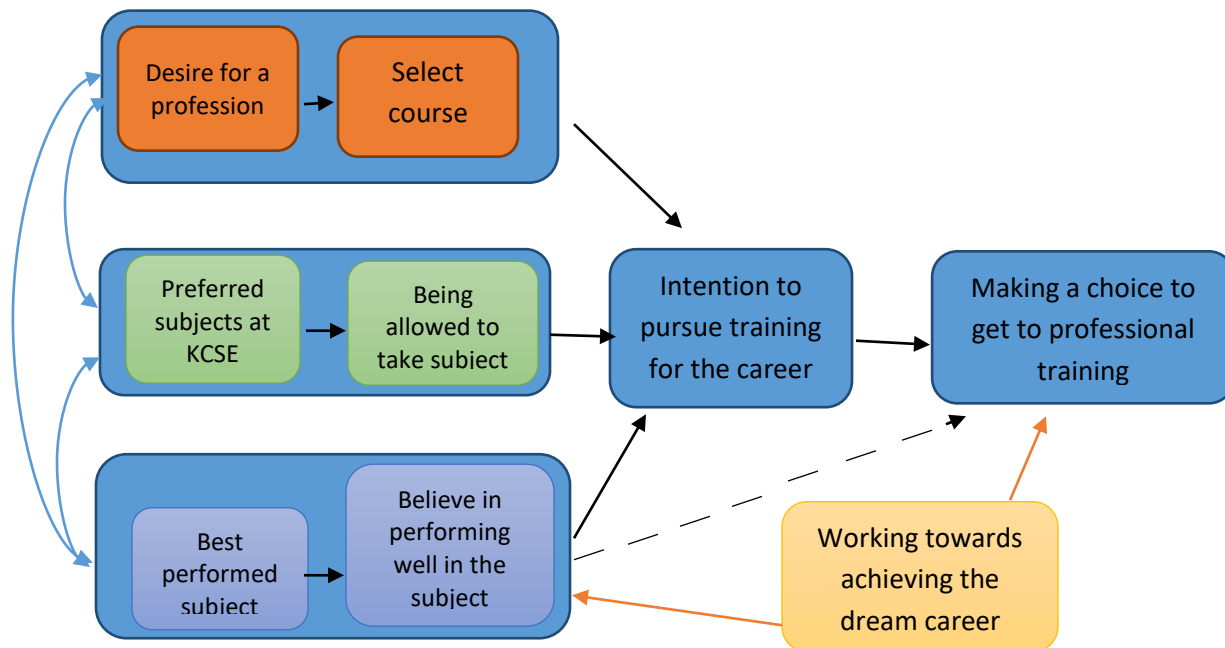


Figure 1: Conceptual Model on Theory of Planned Behavior

(Improvised from Azjen 2002 Model)

5.0 Methodology

Stratified random sampling was used for this research from respondents which are students of University of Nairobi, Kenyatta University, Jomo Kenyatta University, Strathmore University, Kabete Technical Institute, Nairobi Institute of Business Studies and Kenya Technical Teachers College. This ex post facto study gathered responses from the year 2016 to 2018 KCSE school leavers, from 10 stratified randomly sampled schools in Nairobi which is the cosmopolitan capital city of Kenya. From the schools, data on 350 students admitted to the fore-mentioned 3 public and 1 private university, 1 technical and 1 business institute and a teachers' college, their guardians and 100 lecturers and tutors from the colleges and universities. This resulted to 350 university/college students, 350 guardians of prospective students, and 100 university/college representatives being sampled. Two techniques, single mail-out with follow-up reminder letter and an administrator-assisted survey were applied to the distributed 800 questionnaires, out of 395 were responded to, a response rate of 49.38 percent. The study implied quantitative research approach, used structured and pre-tested questionnaire based on Likert scale (most important=10, least important=1) to collect the data. The questionnaire was developed based on factors influencing choice for university/ college and course. For analyses, score of 7-10 aggregated to strong influence; score of 4-6 to moderate influence and score of 1-4 to weak influence. Ten factors were selected for the choice of a course. The questionnaires also sought after data of

participants including age, gender, current subjects, desired subjects and reasons for choosing them, parents' qualification, desired university and reasons behind importance of university education to them.

6.0 Findings of Study

6.1 Descriptive Statistics

The three hundred and ninety five respondents mainly consisted of male students. The sample was balanced in terms of age (18-22 years). The percentage of participation in survey of 51% male students was greater than 49% female students, whereas, the sample had 164 technical courses and 231 business students. The technical students were from different disciplines such as engineering, hospitality, ICT and health. Business students are in areas such as Commerce, Law, Media, Theatre, and Tourism.

6.2 Performance of candidates at KCSE Examination

As per KNEC data, the number of candidates who scored the various grades over the five year period from 2014 to 2018 is as summarized in Table 1:

Table 1: National trends in KCSE candidates mean grade by Gender, 2013-2018

KCSE Grade	2014		2015		2016		2017		2018	
	Male	Female	Male	Female	Male	Female	Male	Female		Male
A	2,133	940	2,024	661	58	83	81	61	201	114
A-	7,644	4,124	7,952	4,117	2,685	1,960	1,813	901	2,180	1,239
B+	12,606	7,208	13,517	8,410	6,581	4,394	4,596	2,748	5,179	3,119
B	17,941	11,378	19,826	13,634	10,204	7,012	7,738	4,890	10,100	6,398
B-	21,997	16,318	25,312	19,269	13,649	10,096	11,631	7,754	15,666	10,681
C+	25,978	21,450	29,556	25,214	17,238	14,969	15,828	12,032	20,301	15,772
C	30,699	27,989	33,437	31,476	22,960	21,832	21,506	18,968	25,903	24,138
C-	36,015	34,662	37,482	36,633	30,979	30,047	31,206	29,834	35,700	35,729
D+	38,749	37,449	40,181	38,976	41,632	39,319	45,522	42,925	48,628	48,237
D	37,365	36,136	40,442	39,113	57,487	54,648	68,572	66,978	72,878	75,419
D-	24,542	23,174	25,531	23,127	77,718	72,211	88,040	91,341	81,248	84,103
E	3,227	2,409	3,127	2,223	18,077	15,322	18,345	17,191	16,793	14,061
Total	258,896	223,237	278,387	242,853	299,268	271,893	314,878	295,623	334,777	319,010
Grand Total	482,133		521,240		571,161		610,501		653,787	

From the analysis, there seems to be concentration on Degree courses as compared to the Diploma programmes. A closer look at the number of students qualified to join the various levels is as summarized in Figure 2:

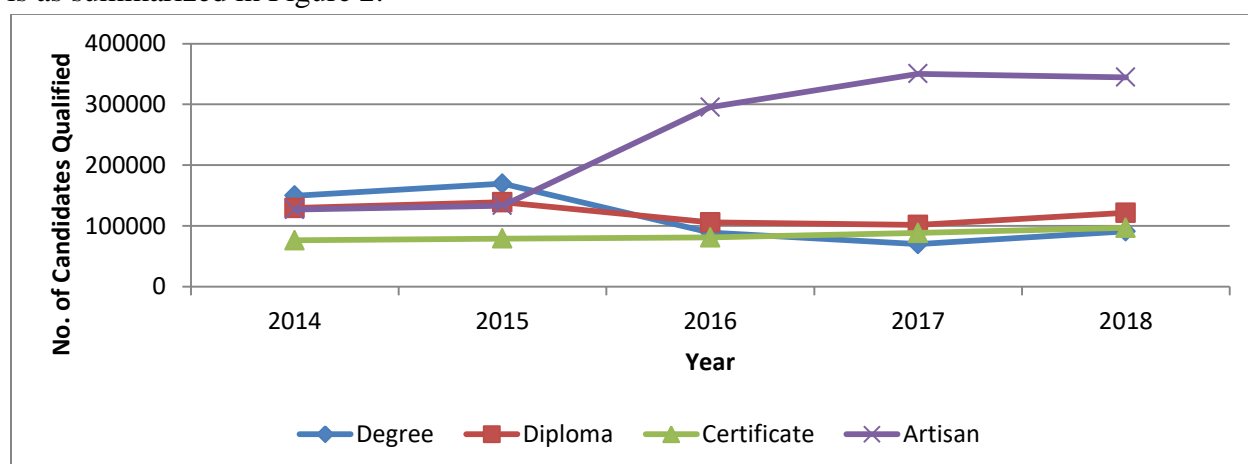


Figure 2: Number of Candidates Qualified to Take Courses at Various Levels

It is worth noting that the number of candidates who qualified to take a degree, diploma and certificate in the years 2016 to 2018 was not differentiated as expected. It is expected that a degree has higher demands in training, and offers one more opportunity than a diploma, as a diploma is also superior to a certificate. In Kenya, the payment of employees is basically pegged on the level of training, with university graduates earning more than the diploma holders, and diploma higher than certificate holders, who in turn earn more than artisan certificate holders.

6.3 Availability of College and University Education

The expansion in education in Kenya has been steady. Table 1 shows the growth in education at various levels for a five year period:

Table 2: Education Growth in Kenya

Level	2013	2014	2015	2016	2017
KCSE	445,520	482,133	521,240	571,161	610,501
TTCs	37,113	39,853	41,402	41,707	42,131
TVET	148,009	147,821	153,314	202,556	275,139
University		443,783	510,685	564,507	520,893

Source: Kenya National Bureau of Statistics Report for 2018

The candidates are admitted to colleges and universities through the Kenya Universities and Colleges Central Placement Service (KUCCPS) is a State corporation which coordinates the

placement of Government-sponsored students to universities and colleges, among other functions. Every year, KUCPPS works in consultation with stakeholders to revise the criteria for placement of candidates to degree and TVET courses and publicizes the information through its website. A student has 18 choices open to them,

- i. 6 Degree options;
- ii. 4 Diploma options;
- iii. 4 Craft Certificate options;
- iv. 4 Artisan Certificate options.

Candidates' aggregate points are calculated by converting the grades to scores as follows:

Grade	Score
A	12
A-	11
B+	10
B	09
B-	08
C+	07
C	06
C-	05
D+	04
D	03
D-	02
E	01

For instance, the year 2017 high school KCSE candidates who scored a minimum aggregate grade of C+ of 46 points shall be eligible for placement to both public and private universities to pursue degree courses under Government sponsorship. All candidates who scored a minimum mean grade of C– of 32 points shall be eligible for placement to pursue diploma courses offered in tertiary institutions. All candidates who scored a mean grade of D of 18 points and above shall be eligible for placement to craft certificate courses offered in tertiary institutions.

Here is how KUCCPS calculates your weighted cluster points for university admission. The following formula is used to calculate the weighted cluster point:

$$w = \left[\sqrt{\frac{r}{m} \times \frac{api}{spi}} \right] \times 48$$

Where: w = Weighted Cluster Point

- r = Raw Cluster index of the relevant subjects per cluster. This is the sum performance index for all the relevant subjects
- m = maximum performance index of the relevant subjects per cluster for all the relevant subjects per cluster for all the students. This is the sum of the maximum index for all the relevant subjects.
- api = Aggregate performance index. This is the summation of the performance index of the 7 subjects for the student
- spi = max performance index. This is the summation of the maximum possible performance index of the 7 required subjects.

Here is an example of previous student's points used by the University of Nairobi, JKUAT, Kenyatta University and Technical University of Kenya. Assuming the students Score is as follows:

Subject	Grade
Maths	B+
English	B
Kiswahili	A-
Biology	C+
Physics	B-
Chemistry	B
History & Government	B+
Business Studies	A-
Aggregate	70

Example for cluster points calculation for the student whose results are summarized in Table 4:

Table 3: Computation of Maximum and Aggregate Performance Indices

Subject	Points	Subject PI	Max. Subject PI	Computing the Aggregate		Cluster Subject PI	
				Aggregate PI	Max. Subject PI	Cluster PI	Max. Subject PI
Math	10 (B+)	11.9	15.05	11.9	15.05	11.9	15.05
English	9 (B)	10.22	15.59	10.22	15.59	10.22	15.59
Kiswahili	11 (A-)	13.19	15.63	13.19	15.63	13.19	15.63
Biology	7(C+)	7.41	15.79	7.41	15.79	7.41	15.79
Physics	8 (B-)	8.79	15.07	8.79	15.07	8.79	15.07
Chemistry	9 (B)	10.59	15.67	10.59	15.67	10.59	15.67
History & Government	10 (B+)	11.36	15.0	11.36	15.0	11.36	15.0
Business Studies	11 (A-)	12.67	14.72	12.67	14.72	12.67	14.72
				$spi=77.34$	$api=107.42$	$r=42.9$ 5	$m=60.51$

$$w = \left[\begin{matrix} \mathbf{V} & r & X & api \\ & m & & spi \end{matrix} \right] X 48 = \left[\begin{matrix} \mathbf{V} & 42.95 & X & 107.42 \\ & 60.51 & & 77.34 \end{matrix} \right] X 48 = 47$$

To make it easy to calculate the cluster points, a student is provided with a computerized process of calculating where the candidate only provides the scores per the cluster subject. The weighted cluster points are inbuilt hence using the new formula is easy.

Using the cluster points, candidates calculate and make their choices on courses they would like to join at the university and other tertiary institutions. Some of the cluster points used by KUCPPS to admit students in some of the university courses are summarized under Figure 2:

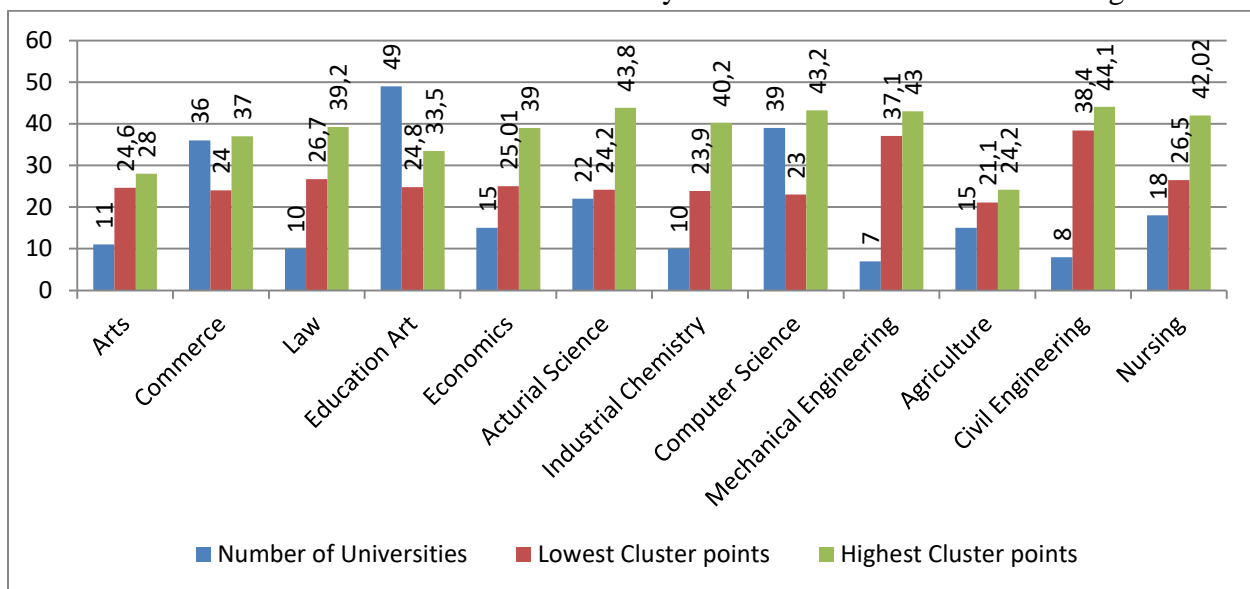


Figure2: Demand and Places Available per Course

Enrolment per Cluster in Public Chartered Universities In Public Chartered Universities at Bachelors level, the cluster with the highest enrolment is Business and Administration with 65,832 students, followed by Education (Arts) with 62,095 and Humanities and Arts with 33,030. The clusters with lowest enrolment were in Veterinary with 1,022 students; Manufacturing with 2,157 students and Law with 3,248 students.

It is worth noting that courses such as Mechanical Engineering and Industrial Chemistry with higher demand in terms of infrastructure are available in only a few universities at 7 and 10 universities respectively offering the courses. In contrast, courses which have less demand in training needs, such as Education Arts have up to 49 universities offering the courses. Courses that are not very attractive to candidates have low cluster points, such as Arts (maximum of 28 pints while those in very high demand, such as Civil Engineering (44.1) and Actuarial Science have very high cluster points. The categorization of points is replicated at the Diploma and

Certificate level, hence training is offered not on demand in the labour market, but according to the availability of training opportunities. Courses perceived to place a graduate in a job more easily attract more applicants.

Technical and Vocational Education and Training Institutions

Technical and Vocational Education and Training (TVET) constitutes any form of education, training and learning activity leading to the acquisition of practical knowledge, understanding and skills relevant for gainful economic engagement, both formal and informal (KIPPRA, 2019). The TVET has recorded outstanding increase in enrolment for the period from 2015 to 2019. According to the Kenya National Bureau of Statistics (KNBS), student enrollment in TVET doubled from 127,691 in 2012 to 275,139 in 2017 (Figure 3).

The enrolment of female learners in Science, Technology, Engineering, Mathematics (STEM) subjects remains consistently low. According to the KNBS Statistical Abstract 2017, there has been an upward trend in registration of the Kenya Certificate of Secondary Education (KCSE) of the STEM subjects but still the number of female students is still much lower. Indeed, female students taking Physics at high school examination (KCSE) by the year 2016 were 43,186 while male students were 106,604. Further, in 2016, in some subjects such as Building and Construction, only 9 female students compared to 223 males sat the examination; power mechanics had 4 female candidates compared to 158 males; and computer studies had 5,403 female candidates as compared to 7,551 male candidates. This indicated a negative cultural existence that had a negative bias of female students towards STEM subjects.

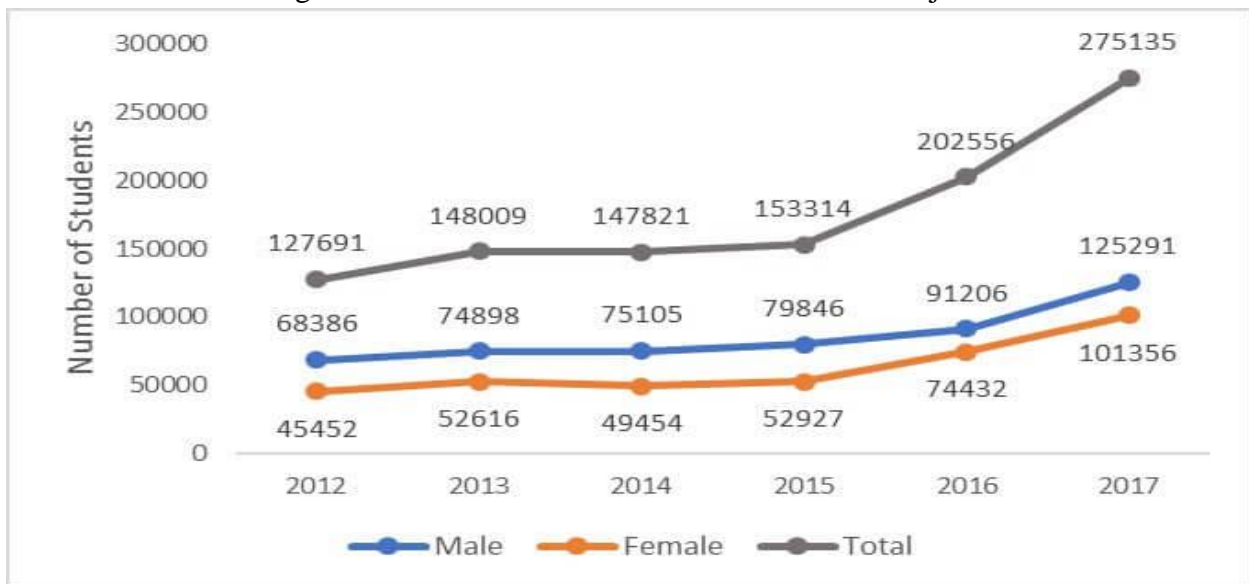


Figure 3: TVET Enrolment Trend Source: *Economic Survey, 2018*

6.4 Factors Affecting University and College Choice

Students of both fields were asked to give importance to the ten elements they give in their decision making process while selecting a college/university. The findings were as summarized in Figure 2:

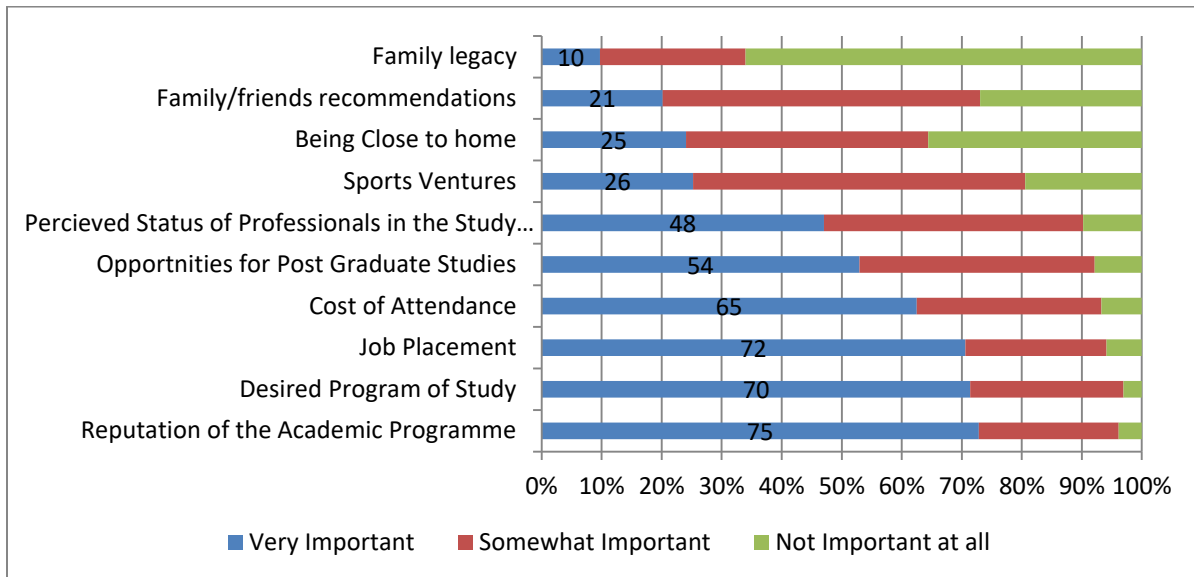


Figure 3: *Percentage of Students Rating a Factor as Important When they are Choosing College/University*

Prominence and programme (75%) and Job placement (72%) seemed to be the most important factors in selection of a college/university for technical and business students. Other important factors include a course being the desired programme (70%), cost of attendance (65%) and opportunities for advancement in learning (54%). The least factors in choice of university/college were family legacy (10%), family and friends recommendations (21%) and being close to home (25%).

Data collected from parents also corroborated the figures as follows;

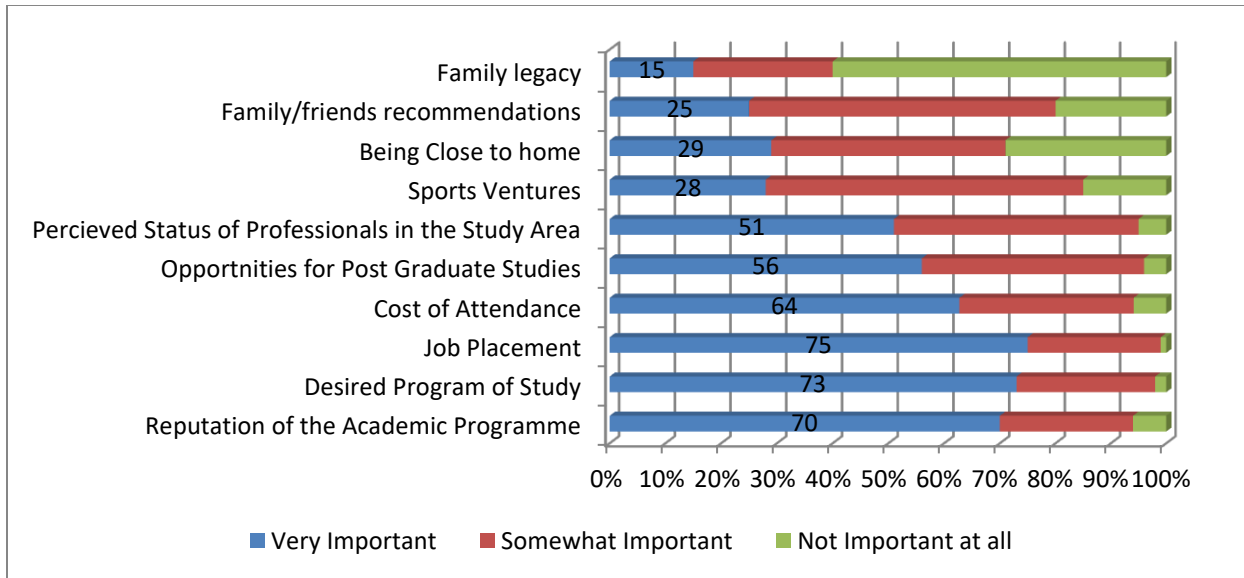


Figure 4: Percentage of Guardians Rating a Factor as Important when they are Choosing College/University

The lecturers and tutors also had similar opinions as follows:

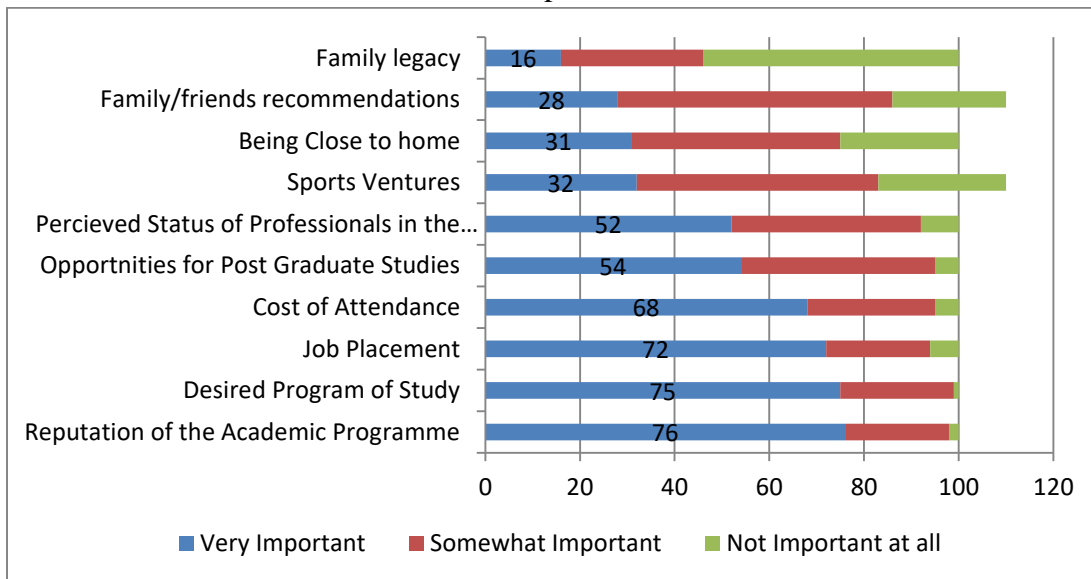


Figure 4: Percentage of Tutors/Lecturer Rating a Factor as Important when they are Choosing College/University

6.5 Correlation of Home background and the Choice of University Choices

Table 4.6 shows the relationship between the candidate's choice of a university course and the home ground. The table shows that a strong link between home background and the candidate's choice of a university course at ($r=0.748^{**}$, $p<0.01$, $N=77$), job market on the candidate's choice of a university course at ($r=0.464^{**}$, $p<0.01$, $N=77$), financial capacity and candidate's choice of

a university course at ($r=0.535^{**}$, $P<0.01$, $N=77$), KCSE performance and candidate's choice of a university course at ($r=0.687^{**}$, $P<0.01$, $N=77$) and career choice sensitization and candidate's choice of a university course at ($r=0.379^{**}$, $P<0.01$, $N=77$).

Table 4: Correlation of Home background and the Choice of University /College Choices

	Pearson Correlation	Sig. (2-tailed)	N
Home background characteristics	0.748**	.000	395
Job market	0.464**	.000	395
Financial capacity	0.535**	.000	395
KCSE performance	0.687**	.000	395
career choice sensitization	$r=0.379^{**}$.000	395
** Correlation is significant at the 0.01 level (2-tailed).			

Home background characteristics include among others the education levels of the parents and siblings, home location and settings, those interacting with the student among other environmental influences. The job market is mainly determined by the frequency of advertisement of the various jobs in the media. Whereas many finance support programmes target primary school children transiting to secondary schools, only Higher Education Loans Board is meant for those in colleges and universities.

7.0 Conclusion

It can be concluded that university/college undergraduate students have higher proportion of male students and they did not take into account the parents' & teachers' advice and guidance from schools because of their seeking of independence in their life, while girls seem to have a negative attitude towards STEM subjects. The universities should take into account the gender based marketing approach due to the different preferences of courses of male and female students. The students consider information provided through prospectus, website, press reviews and other written material as misleading which play an important role in students' decision making. However, there is an overemphasis on universities as opposed to the other tertiary institutions. The current structure de-motivates learners, as external controls override their efforts when it comes to opportunities available. On the other hand, colleges and universities need to be more strategic to attract students and raising their education quality, and to make it possible to attract better quality students.

8.0 Recommendations:

The focus on training at college and university levels should endear to preparing the students for the job market, while equipping them with relevant skills that are in line with demand in the labour market, including 21st century skills.

The study recommends that:

- i. A college preparatory curriculum be availed to high school school students to make choice early in high school, before they make choice of subjects;
- ii. Have policies that encourage girls to take STEM subjects in school to provide them an opportunity to further studies in relevant career areas;
- iii. The quality of training in all colleges and universities be harmonized to produce equally effective graduates;
- iv. Encourage and uphold entrepreneurial and technological innovations in the youth;
- v. Keep under control and re-direct training of the youth in line with productive economic activities;
- vi. Impart marketable skills and technical know-how that respond to contemporary labour market demands by the industry, informal sector and for self employment.

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