

# Influence of Type of Courses Offered on Enrolment to Technical Vocational Education and Training in Trans Nzoia County, Kenya

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## ABSTRACT

Vocational Education and Training (VET) is considered as the best solution to improve opportunities of youth who have limited resources, skills or motivation to enable them to continue pursuing higher education (Lerman, 2018). TVET develops professional skills in youth with basic knowledge and scientific principles (Billet, 2011). This prepares youth for both formal employment and self-employment. To promote self-employment, TVETs curricula usually include entrepreneurship, agricultural science, home economics, hospitality and tourism related courses for social reproduction and the transformation of vocational practices (Maclean & Wilson, 2009). It is there important to understand what type of courses are offered in vocational training centres and it influence on enrolment to TVET. The study adopted Education Production Function Theory which suggests that an increase in enrolment to TVET is dependent on the inputs such as the type of course offered. The scope of the study was 28 County Vocational Training Centers with 161 trainers and 2931 trainees. Stratified random sampling was used in sampling out the 15 VTCs across Trans-Nzoia County. Purposive sampling was used to sample VTC heads & director while simple random sampling was used to obtain trainers and trainees. The sample size had 464 respondents; 1 VTC director, 15 head of VTCs, 108 trainers and 340 trainees. Questionnaires and interview guide was used to collect data. The validity of the research instruments was ascertained through expert judgment. The reliability of the research instruments was determined using the test- retest method. The instruments produced reliability coefficient of 0.78 hence the tools were considered reliable. Quantitative data was analyzed using inferential statistics; Pearson Product Moment Correlation at  $\alpha = 0.05$  and simple regression analysis was used to test the hypothesis. The Pearson product moment correlation index obtained on the relationship between course enrollment and mean annual enrolment in TVETs were positive and high. Analysis of Variance (ANOVA) showed that 90.2 per cent of the variance in dependent variable (mean annual enrollment.) was explained and predicted by independent variables (course enrolment). The F-statistics produced ( $F = 143.645$ ) and ( $t = 1.212$ ) were significant at 5 per cent level ( $p < 0.0001$ ), thus confirming the fitness of the model and therefore, there is statistically significant relationship course offered and enrolment to TVET. The study found out that there was a statistically significant relationship between courses offered and enrolment to TVET and that some courses were more popular than others in vocational training centers.

**KEYWORDS:** *Courses offered, enrolment, TVET*

## I. INTRODUCTION

Technical and Vocational Education and Training (TVET) refers to a range of learning experiences which are relevant to the world of work and may take place in a variety of learning contexts including education and training institutions and workplaces. The word “TVET” describes; Vocational Education, Technical Education, Occupational Education, Workplace Education, Career and Technical

Education (CTE), Apprenticeship training, Entrepreneurship Education etc.” (UNESCO, 2017). The core role of TVET is developing professional skills and scientific principles in youth to prepare them for work; both formal and self-employment (Billet, 2011). To promote self-employment, TVETs curricula usually include entrepreneurship, agricultural science, home economics, hospitality and

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tourism related courses for social reproduction and the transformation of vocational practices (Maclean & Wilson, 2009). Vocational education and training (VET) are considered as the best solution to improve the opportunities of youths who have limited resources, skills or motivation which enables them to continue pursuing higher education (Lerman, 2018). It is against this background that a number of African nations have mounted various TVET reforms since the 1990's. This has led to formulation of policies that seek to address the social economic challenges faced by various nations. One major concern of policy makers is to ensure a TVET system that is relevant and accessible while addressing issues of quality (Konayuma, 2008).

Official Kenyan government figures showed that more than 130 TVETs across the country have no single students enrolled despite the government putting billions of shillings to boost technical training in the country. The data from inquiry report by the Ministry of Education department of Technical and Vocational Education showed that a total of 133 institutions have no student enrolled in both technical and business courses offered in various colleges (The Nation, 2020).

However, Kenya National Bureau of Statistics (KNBS) data indicates that enrollment in TVET doubled from 127,691 in 2012 to 275,139 in 2017. The Kenya Universities and Colleges Central Placement Service data for the 2020/2021 academic cycle likewise indicates that there is still low uptake of TVET courses despite the ongoing infrastructural expansion and investment in TVET institutions. For example, the declared capacity in the TVET institutions in this 2020/2021 cycle was 276,163 students but only 88,724 applicants were placed, translating to 32% of the capacity (KUCCPS, 2020). These figures suggest that there are still many students who after secondary school do not get enrolled to any institution of higher education.

Kenya has set an ambitious goal of becoming industrialized by the year 2030. The availability of well-educated and relatively well-trained workforce is regarded as critical to industrialization. To achieve this goal, Technical, Vocational, Education and Training (TVET) institutions are charged with the major responsibility of preparing trainees with relevant knowledge and skills required in the labour market in order to enhance their productivity. The courses offered at different VTC could dictate the number of students enrolling in such particular institutions (Ronoh et al., 2014). This study therefore looks at the relationship between the courses offered and enrolment to TVET.

**The study objective:** To determine the relationship between courses offered and enrolment to TVET in Trans-Nzoia County, Kenya.

## II. Material And Methods

**Research design:** The study adopted Education Production Function Theory. The theory postulates that an increase in enrolment to TVET is dependent on the inputs such as the type of courses offered in the TVET institutions. Certain courses had higher enrolment than others.

**Target Population:** The study was conducted in Trans-Nzoia County which has a total of 28 public vocational training centres. The study targeted a population of 3121; among them was the Director of Vocational Training, 28 head of Vocational Training Centres, 161 trainers and 2931 trainees.

**Sampling Procedure and Sample Size:** The study adopted Stratified random sampling which placed the VTCs into five strata based on the sub-county where they are located. This technique was the most suitable since Trans-Nzoia is an extensive county. The use of stratified sampling also ensured that a representative sample is obtained. Simple random sampling was then used to select 3 VTCs from Trans-Nzoia East, 4 VTCs from Trans-Nzoia West, 4 VTCs from Kiminini, 2 VTCs from Kwanza and 2 VTCs from Endeless Sub-County. The sampled VTCs represented slightly above fifty percent of the total number of institutions. The use of simple random sampling eliminated bias and allowed sampling error to be easily estimated. Fifty percent representation was considered to be representative of the entire County TVET institutions. Purposive sampling was used in sampling 15 center managers from the sampled VTC and one VTC director. The study Adopted simple random sampling in selecting 108 trainers and 340 trainees from the 15 VTCs.

**Table 1: Sample Size**

Sample Group	Population	Sample Size	Percentage
VTC Director	1	1	100.0
Principals	28	15	50.1
Trainers	161	108	67.0
Trainees	2931	340	11.6
<b>Total</b>	<b>3121</b>	<b>463</b>	<b>14.8</b>

**Source:** Field data (2021).

**Research tool:** This study used questionnaires and interview guide. Questionnaires were administered to Center Managers, trainers and trainees. On the other hand, the interview was conducted on the TVET County Director. These tools provided critical

information that enabled the determination of influence of infrastructural facilities on access to TVET to be analyzed.

**Data analysis:** The study yielded both quantitative and qualitative data. Quantitative approach used Descriptive, correlation and inferential statistics for data analysis. Simple regression analysis and One way ANOVA was used in hypotheses testing. Data from questionnaires was first coded and analyzed using Statistical Package for Social Sciences (SPSS Version 25.0). The processed data was summarized using tables and figures and presented in frequencies and percentages. On the other hand, Qualitative data

generated from interview schedules was organized and presented in accordance with the research objectives.

### III. Result and Discussion

#### Response rate

A total of 463 questionnaires were distributed to the targeted participants as follows; 1 to the VTC County Director, 15 to the Head of VTCs (Centre Managers), 108 to VTC trainers and 340 to trainees. A total 375 questionnaires were returned. Table 1. shows the number of questionnaires given out to each category of respondents and the number of questionnaires that were returned.

**Table 2. Response Return Rate**

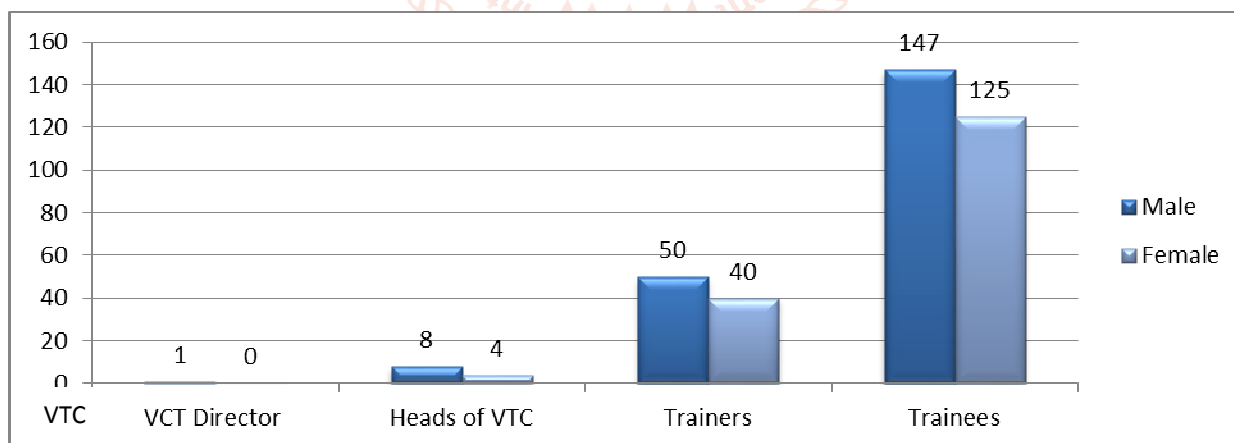
Respondents	Questionnaires Dispatched	Questionnaires Returned	Response Rate %
Head of institutions	15	12	80.0
Trainers	108	90	83.3
Trainees	340	272	80.0
Total	463	374	80.7

Source: Field Data (2021)

Table 2. shows that 374 questionnaires were successfully completed and returned. This translated to a response rate of 80.7%. Mugenda & Mugenda (2002) suggest that a response rate of 50% is adequate, 60% is good and 70% and above very good for a descriptive survey study. The response rate obtained was therefore considered reliable for the study. The researcher thus proceeded to analyze and interpret the data.

#### Background Information of the Respondents

Background information of the respondents for which data was collected included gender, age, number of years in service, department and highest level of education for the VTC director, Head of VTCs and trainers. Background information trainees who participated in the study included gender, age and religion. Additionally, socio-economic background information for trainees was also collected. Background information assisted in understanding the background characteristics of the respondents. The findings are presented in tables and figure that follow.



**Figure 1: Distribution TVET Trainee according to Sex**

According to the findings presented in Figure 2.1, the VTC director who participated in the study was male, out of the 12 Heads of VTC who took part in the study, 8 were male. There were 90 trainers who participated in the study, 50 (55.6%) of the trainers were male while 40 (44.4%) of the trainers were female. 272 of the respondents were VTC trainees, out of which 147 (54.0%) were male and 125 (46.0%) were female.

#### Distribution of TVET Trainees, Trainers and Head of VTCs based on Age

This section presents the age of the respondents who participated in the study. Table 3 presents the age of trainees.

**Table 3: Distribution of TVET Trainee based on Age**

Variable		Frequency	Percent
Age bracket	15-18yrs	117	42.9
	19-21yrs	60	22.2
	22-24yrs	54	20.0
	25 yrs and above	41	14.9
	<b>Total</b>	<b>272</b>	<b>100</b>

Source: Field Data (2021)

The findings in table 3. show that majority of the TVET trainees were aged between 15 and 18 years (n=117, 42.9%), which could imply that these cohort of TVET trainees are the ones who failed to proceed to secondary school even with emphasis on 100% transition. This informs policy implementors to make a follow-up on 100% transition policy. A total of 41 (14.9%) of the respondents are from age 25 years and above, Again, TVET education is flexible as anyone can join in any time. This is according to ministry of education task force on the re-alignment of the education sector to the constitution of Kenya 2010 towards a globally competitive quality education for sustainable development (2012) report. Further, 83 (22.2%) respondents were aged between 19 and 21 years while 75 (20.0%) respondents were aged between 22 and 24 years.

**Table 4: Distribution of TVET Trainers based on Age**

Age bracket	Frequency	Percent
Below 30 years	6	2.3
31-40 years	48	47.2
41-50 years	34	33.4
51-60 years	12	11.7
60 years and above	1	1.4
Not Indicated	4	4.0
<b>Total</b>	<b>101</b>	<b>100</b>

Source: Field Data (2021)

Table 4 presents data on distribution of trainers based the ages. Majority of the trainer respondents (48) 47.2% were 31-40 years old, 34 (33.4%) were aged 41-50 years, 12 (11.7%) were between 51-60 years while only 6 (2.3%) were below 30 years. There was only one trainer who indicated to be 60 years and above. It was also noted that 4 respondents did not indicate their age bracket.

**Table 5: Distribution of TVET Head of VTCs based on Age**

Age bracket	Frequency	Percent
Below 30 years	0	0
31-40 years	7	58.3
41-50 years	4	33.4
51-60 years	1	8.3
60 years and above	0	0
<b>Total</b>	<b>12</b>	<b>100</b>

Source: Field Data (2021)

Table 5 presents data on distribution of head of VTCs based their ages. Most of the respondents (7)58.3% were 31-40 years old, 4 (33.4%) were aged 41-50 years, and 1 (8.3%) was between 51-60 years. None of the heads of the VTCs was below 30 years and above 60 years. These findings indicate all the head of institutions were both energetic and experienced.

#### Head of VTCs and Trainer's Work Experience and Level of Education

The study also collected information on work experience of trainers and their highest professional qualification. The findings were presented in table 6 and table 7 respectively.



**Table 6: Head of VTCs and Trainers Work Experience**

Work experience	Frequency	Percent
1 year and below	3	2.7
2-5 years	24	24.2
6-10 years	44	43.1
11 years and above	25	24.8
Not indicated	5	5.2
<b>Total</b>	<b>101</b>	<b>100</b>

Source: Field Data (2021)

**Table 7: Head of VTCs and Trainers Highest Professional Qualification**

Professional Qualification	Frequency	Percent
Artisan/ craft Certificate	31	30.6
Diploma	45	44.4
Higher Diploma	3	2.8
Degree	17	16.7
Post graduate	3	2.8
Not indicated	3	2.7
<b>Total</b>	<b>101</b>	<b>100</b>

Source: Field Data (2021)

Table 7 shows that majority 44(43.1%) of the head of VTCs and trainers have work experience of 6 -10years and therefore, are in a better position to inform on institutional factors that influence access to TVET. Forty-five head of VTCs and trainers (44.4%) had their highest professional qualification as diploma. This means that most head of VTCs and trainers had attained the minimum (diploma) level of qualification required to teach and provide instruction in public VTCs as outlined in TVETA guidelines.

#### **Courses offered in Technical and Vocational Training and Education.**

Table 8 presents the distribution of trainees according to the courses enrolled.

**Table 8 Distribution of Trainees According to the Courses Enrolled In VTCs In Trans-Nzoia County**

Course	Frequency		Frequency	Percentage
	Male	Female		
Clothing, textile and Fashion	12	31	43	15.8
Electricals / Electronics	35	3	38	14.0
Building and construction (masonry)	30	6	36	13.2
ICT	8	26	34	12.5
Hairdressing and Beauty	5	27	32	11.8
Plumbing / Pipe Fitting	21	5	26	9.6
Others	5	16	21	7.7
Motor Vehicle Mechanics	14	5	19	7.0
Carpentry and metal work	12	6	18	6.6
Metal Processing	4	1	5	1.8
<b>Totals</b>	<b>147</b>	<b>125</b>	<b>272</b>	<b>100.0</b>

Source: Field Data, 2021

#### **Popular Courses in TVET Based on Enrolment per Course between 2017-2020**

Trainee enrollments per courses in TVET from the year 2017 to 2020 are presented in figure 2. below. The figure shows that there has been a continuous rise in enrolment to TVET since 2017. The course that had the largest enrolment was clothing, fashion and design.

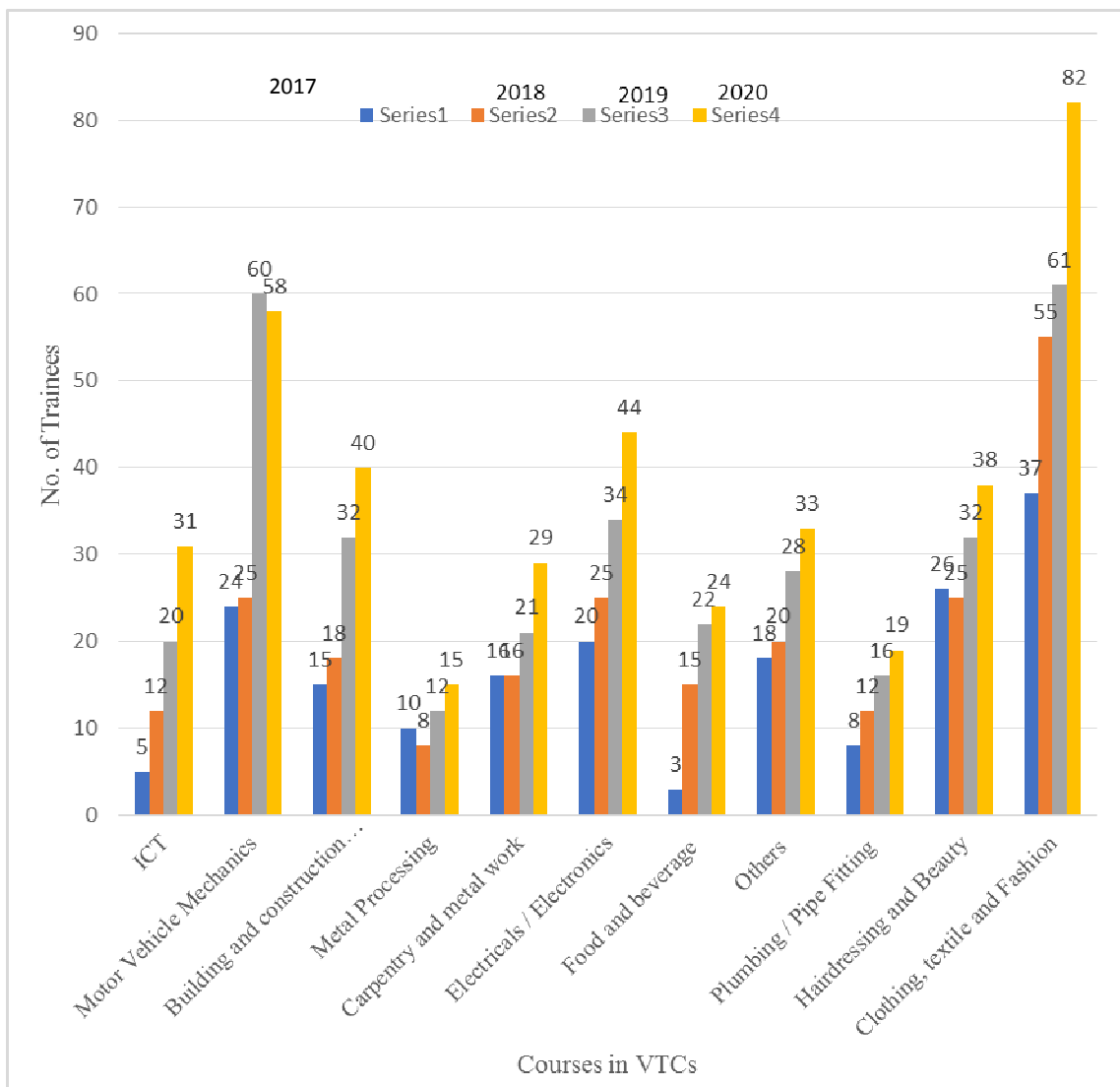


Figure 2: Trainees enrolment to VTCs in Trans-Nzoia County between 2017-2020

Table 9: Descriptive result on influence of type and variety of course offered on access to TVET by Head of VTC.

Statement	SA	A	UD	D	SD	Mean
Marketability and industrial needs of courses offered affects access to TVETs	7 (58.3%)	2 (16.7%)	2 (16.7%)	1 (8.3%)	0 (0.0%)	1.75
Type of course influences enrolment	3 (25.0%)	6 (50.0%)	2 (16.7%)	1 (8.3%)	0 (0.0%)	2.08
Lack of certain courses in the institution limits enrolment	0 (0.0%)	7 (58.3%)	1 (8.3%)	3 (25.0%)	1 (8.3%)	2.8
Availability of Courses accredited by TVETA influences access to TVETs	0 (0.0%)	2 (16.7%)	2 (16.7%)	6 (50.0%)	2 (16.7%)	3.67

Key: SA-Strongly agree, A-Agree, UD- Undecided, D-Disagree SD- Strongly Disagree.

Results from table 9 indicated that more than half (n=7, 58%) of the heads of institution respondents strongly agreed that marketability and industrial needs of courses offered affects access to TVETs, 2 (17%) heads of institution agreed that marketability and industrial needs of courses offered affects access to TVETs however 1 (8%) disagreed that marketability and industrial needs of courses offered affects access to TVETs.

Three quarters of the heads of institution (n=9, 75 %) agreed or strongly agreed that the type of course influences enrolment, 3 (25%) heads of institution strongly agreed that type of course influences enrolment and 6 (50%) heads of institution strongly agreed that type of course influences enrolment. 7 (58 %) agreed that type of course influences enrolment.

On the other hand, more than half of the heads of institution (n=8, 67 %) disagreed or strongly disagreed that the type of course influences enrolment 2 (17%) heads of institution strongly disagreed that type of course

influences enrolment and 6 (50%) heads of institution strongly disagreed that type of course influences enrolment.

### Correlation Matrix for the Courses Offered and Access to TVET

On further analysis the study sought to find out if there was a statistically significant relationship between courses offered and access to TVET. To compute this, an inferential statistic was applied to test the Pearson Product Moment correlation relation between course enrollment and mean annual between 2017 and 2020 at 95% confidence level and the results were summarized in table 10

**Table 10: Summary of the Pearson Product Moment correlation analysis for the relationship between course enrollment and mean annual enrolment for 2017-2020**

	Pearson Correlation	Pearson Correlation	Sig. (2-tailed)	N
<b>Pearson Correlation</b>	Mean annual enrollment	1	-	-
	ICT	0.989	0.001	102
	Motor Vehicle Mechanics	0.972	0.003	102
	Building and construction (masonry)	0.997	0.000	102
	Metal Processing	0.99	0.001	102
	Carpentry and metal work	0.982	0.001	102
	Electricals / Electronics	0.961	0.005	102
	Food and beverage	0.991	0.001	102
	Others	0.983	0.001	102
	Plumbing / Pipe Fitting	0.993	0.00	102
	Hairdressing and Beauty	0.989	0.001	102
	Clothing, textile and Fashion	0.977	0.002	102

According to Table 10, all the Pearson product moment correlation index obtained on the relationship between course enrollment and mean annual enrolment in TVETs were positive and high. Building and construction (masonry) had an index of 0.997 ( $\rho < 0.0001$  at  $\alpha = 0.05$ ), Plumbing / Pipe Fitting had an index of 0.993 ( $\rho < 0.0001$  at  $\alpha = 0.05$ ), Food and beverage had an index of 0.991 ( $\rho = 0.001$  at  $\alpha = 0.05$ ), ICT had an index of 0.989 ( $\rho = 0.001$  at  $\alpha = 0.05$ ), Metal Processing had an index of 0.990 ( $\rho = 0.001$  at  $\alpha = 0.05$ ), Hairdressing and Beauty had an index of 0.989 ( $\rho = 0.001$  at  $\alpha = 0.05$ ), Carpentry and metal work had an index of 0.991 ( $\rho = 0.001$  at  $\alpha = 0.05$ ), Clothing, textile and Fashion had an index of 0.977 ( $\rho = 0.002$  at  $\alpha = 0.05$ ), Motor Vehicle Mechanics had an index of 0.972 ( $\rho = 0.003$  at  $\alpha = 0.05$ ) and Electricals / Electronics had an index of 0.961 ( $\rho = 0.005$  at  $\alpha = 0.05$ ). Based on these findings the study went further to compute regression analysis.

### Regression Model for Course Enrollment and Mean Annual Enrolment

Regression analyses are a set of techniques that can enable us to assess the ability of an independent variable(s) to predict the dependent variable(s). As part of the analysis therefore, regression analysis was done. The study created a regression model

**Table 11: Coefficients<sup>a</sup>, ANOVA<sup>b</sup> and MODEL Summary**

Model		Model		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.224	0.047		1.212	.000
	ICT	.142	.249	.132	0.569	.005
	Motor Vehicle Mechanics	.083	.187	.079	4.187	.003
	Building and construction (masonry)	.175	.132	.154	5.097	.001
	Metal Processing	.098	.979	.078	8.696	.001
	Carpentry and metal work	.128	.891	.094	9.373	.000
	Electricals / Electronics	.121	.788	.103	7.121	.000
	Food and beverage	.291	.043	.272	7.879	.001
	Others	.184	.035	.167	6.601	.000
	Plumbing / Pipe Fitting	.083	.044	.061	9.668	.003
	Hairdressing and Beauty	.156	.251	.143	10.582	.000
	Clothing, textile and Fashion	.965	.253	.751	6.253	.002

	<b>R</b>	<b>.911<sup>a</sup></b>			
	<b>R Square</b>	<b>.902</b>			
	<b>ANOVA<sup>b</sup></b>	<b>F</b>	<b>143.645</b>		
		<b>Sig.</b>	<b>.000<sup>a</sup></b>		

A. Predictors: (Constant), ICT, Motor Vehicle Mechanics, Building and construction (masonry), Metal Processing, Carpentry and metal work, Electricals / Electronics, Food and beverage, Others, Plumbing / Pipe Fitting, Hairdressing and Beauty, Clothing, textile and Fashion

B. Dependent Variable: mean annual enrolment.

From Table 10, it is clear that the R value was 0.911 showing a positive relationship. The coefficient of determination R<sup>2</sup> value was 0.902. This shows that 90.2 per cent of the variance in dependent variable (mean annual enrollment.) was explained and predicted by independent variables (course enrolment). The F-statistics produced (F = 143.645) and (t= 1.212) were significant at 5 per cent level ( $p < 0.0001$ ), thus confirming the fitness of the model and therefore, there is statistically significant relationship course offered and access to TVET. From the Regression Model and Based on this table, the equation for the regression line is:

$$Y (\text{mean annual enrollment/access}) = \alpha + \beta_1 \text{ICT} + \beta_2 \text{Motor Vehicle Mechanics} + \beta_3 \text{Building and construction (masonry)} + \beta_4 \text{Metal Processing, Carpentry and metal work} + \beta_5 \text{Electricals / Electronics} + \beta_6 \text{Food and beverage} + \beta_7 \text{Others} + \beta_8 \text{Plumbing / Pipe Fitting} + \beta_9 \text{Hairdressing and Beauty} + \beta_{10} \text{Clothing} + \beta_{11} \text{textile and Fashion} + e$$

Thus;

$$Y (\text{mean annual enrollment/access}) = 0.224 + 0.142 \text{ICT} + 0.083 \text{Motor Vehicle Mechanics} + 0.175 \text{Building and construction (masonry)} + 0.098 \text{Metal Processing} + 0.128 \text{Carpentry and metal work} + 0.121 \text{Electricals / Electronics} + 0.291 \text{Food and beverage} + 0.184 \text{others} + 0.083 \text{Plumbing / Pipe Fitting} + 0.156 \text{Hairdressing and Beauty} + 0.965 \text{Clothing, textile and Fashion} + e$$

The second null hypothesis stated that

**H<sub>02</sub>:** *There is no statistically significant relationship between courses offered and access to TVET in Trans-Nzoia County.*

To test the hypothesis at 0.05 significant levels the regression model was created at 95% confidence level. The F-statistics produced (F = 143.645) was significant at 5 per cent level ( $p < 0.0001$ ), thus confirming that at least one of the predictors was useful for predicting annual mean enrolment (access) to TVET, therefore, there is statistically significant

relationship between course offered and access to TVET. The study rejected the null hypothesis, indeed the course offered affected access (mean annual enrollment) to TVET.

#### IV. Conclusion

There were courses that were more popular with trainees attending to vocational training centers. Analysis of the influence of type of courses offered indicated that there was a positive correlation between the type of course offered and enrolment to TVET. More resources should be channeled to the popular courses and popularization be mounted on the least popular courses in order to boost enrolment to TVET.

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