

# The Relationship between ICT Adoption and Student Enrolment in TVET Institutions in Bungoma County, Kenya

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## Abstract

The purpose of the study was to investigate the relationship of ICT Adoption and student enrolment in TVET institutions in Bungoma County, Kenya. Proportionate stratified sampling, census and simple random sampling were used to select a sample size of 426 respondents. Data was collected using questionnaires and document analysis. The items from the main questionnaire were organised according to the specific research objectives. The data was analyzed using Chi-square test of Homogeneity, Pearson Correlation and Linear regression. The study established that ICT adoption in form of availability and use of ICT resources had a statistically significant relationship with student enrolment and recommended that functional ICT facilities be available at all TVET institutions and be should utilized for learning and administration in the institutions.

**Keywords:** ICT Adoption, ICT Availability, ICT use, Student Enrolment.

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## INTRODUCTION

TVET is regarded as a key lever of international economic development, social advancement and by extension a panacea to the ever rising challenge of youth unemployment [1]. To this end governments the world over have not spared financial and planning resources with the aim of increasing student enrolment in TVET institutions [2]. However, student enrolment in TVET Institutions continues to be low. Adoption of ICT through; availability and use of ICT resources for management and administration, student engagement and learning in the TVET institutions is one of the strategies that can lead to increased enrolment [1].

## LITERATURE

Basri *et al.*, [3] carried out a study on the ICT adoption by universities and its impact on the students' academic performance. Data was collected from students in Saudi universities. The research method used was the Analytics of Momental Structures (AMOS) and results showed that the relationship between ICT adoption and academic performance was established in a conservative environment.

Factors restricting the use of ICT in public high school administration in the Kiambu County in Kenya were investigated by Muriko [4]. Descriptive survey design was adopted by the researcher while data was collected from 84 respondents in public secondary schools including heads of schools, their deputies and heads of departments. The data was analyzed using percentages and weighted averages which showed that ICT was optimally used as a resource for the administration of secondary schools.

Another study conducted in Kenya, Nkonge [5] investigated ICT adoption in Meru County primary teacher training institutions. The researcher used both qualitative and quantitative data collection and analysis for descriptive survey design. The 710 respondents included principals, lecturers and students teachers. The qualitative data was analyzed in the percentages, means and frequency counts. The study showed that lecturers and student teachers cannot fully benefit from the technology because of inadequate or even lack of equipment.

Similarly, Toyo [6] studied ICT adoption on educational development of learning institutions in Agbor and Warri in Nigeria. Questionnaires were used to collect data from 126 non-academic staff, which accounted for 50 % of the total population. Findings showed that there were many constraints to the effective implementation and usage of ICT services, which included: inadequate funding, lack of investments in ICTs, a low level of literacy by employees, etc. The study concluded that universities should integrate ICT in the management, administration, and research and curriculum implementation, to ensure optimization of higher education processes.

In a related study, Oyier *et al.*, [7] investigated the effect of ICT in management of private secondary schools in Nairobi. A survey design was adopted, with a target population of 140 private schools, and 40 principals were randomly sampled for the study. Questionnaires and interview schedules were used for collection of data. Findings suggested that the use of ICT is more widespread in schools with higher enrollment.

Another scholar, Mutisya [8] examined the extent to which IT was integrated into the administration of public secondary schools in County of Kitui, Kenya. This research used a descriptive survey framework and mixed methodology approach. Data was collected from head teachers, senior teachers, assistant teachers and education officials. Data analysis was done using quantitative and qualitative techniques. The study found that most principals were not ICT compliant; some did not even have email addresses.

Masai [9] carried out a case study in Kenyatta University, Kenya on application of ICT in service delivery. Respondents to the questionnaire were students studying at the university, department heads and IT officers. The study found that the investment in ICT has a significant positive influence on the service delivery.

On the other hand, Opira [10] sought to establish the link between ICT and student enrolment at Gulu University in Uganda. Data was collected using questionnaires and interview schedules from a sample of 275. Cross-sectional survey design was employed and the researcher used the Pearson correlations to assess the linear relationship between the learning of students and ICT in testing the hypotheses. The researcher concluded that availability, accessibility and

user-ability of ICT resources significantly affect students' enrolment in Gulu University.

Saina, *et al.*, [11] investigated existing gaps in the implementation of strategies for ICT integration in the curriculum implementation of engineering department in TVET institutions in the Uasin Gishu County, Kenya. The research was based on the TAM (Technology Acceptance Model) and used descriptive research design. Data was gathered from trainees, trainers, administrators and instructors. The study concluded that the government needs to support TVET institutions on the strategies for mitigating challenges associated with ICT adoption and integration in engineering subject instruction.

The literature review shows that multiple studies in the area of ICT adoption and student enrolment in TVET institutions have been carried out. The scholars who have done the researches include; Toyo [6], Masai [9], Saina *et al.*, [11], Muriko [4] Basri *et al.*, [3], Nkonge [5], Shihundu [12], Oyier *et al.*, [7], and Mutisya [8]. However the studies did not specifically address the relationship between ICT adoption and student enrolment. Additionally the approaches, research design, methodology, sampling techniques and sample sizes, study areas and locations were different and borrowed concepts from each other. The current study sought to fill the gap in literature by revolving around the relationship between ICT adoption (availability and use) and student enrolment in TVET institutions. The study employed both primary and secondary data.

## RESEARCH METHODOLOGY

Correlational research design was the most suitable for the study to test the hypothesis and establish the relationship between the variables. Questionnaires and document analysis were used to collect data. Proportionate stratified, simple random sampling and census were employed for the study. From a target population of 9885, a sample size of 426 respondents was obtained. Proportionate stratified random sampling was used to select 65 TVET institutions from the 82 in the 9 sub-counties in Bungoma County. 65 principals of the sampled TVET institutions were selected by Census and simple random sampling was used to select 2 lecturers from the sampled TVET institutions giving a sample size of 130 lecturers and 3 students from 61 VTCs and 12 from 4 (3TTIs and 1 IST), because the TTIs and IST had a higher student enrolment, giving a total of 231 TVET students. As shown in Table 1.

**Table-1: Sample sizes of TVET institutions and respondents in Bungoma according to Sub Counties**

Sub county	Institutions/Sub County				Sample size of TVET institutions & respondents		
	TTIs & IST	VTCs	Total TVETs	Sampled TVETs	TVET students	TVET Lecturers	TVET Principals
Kimilili	1	9	10	8	33	16	8
Mt. Elgon		8	8	6	18	12	6
Bungoma Central	1	7	8	6	27	12	6
Bungoma West	-	8	8	6	18	12	6
Bungoma South	1	11	12	10	39	20	10
Bumula	1	14	15	12	45	26	12
Bungoma North	-	10	10	8	24	16	8
Webuye East	-	4	4	3	9	6	3
Webuye West	-	7	7	6	18	10	6
<b>Total</b>	<b>4</b>	<b>78</b>	<b>82</b>	<b>65</b>	<b>231</b>	<b>130</b>	<b>65</b>

Source: Author 2019

## RESULTS AND DISCUSSION

The following null hypothesis was tested;

**H<sub>0</sub>:** ICT adoption has no significant relationship with student enrolment in TVET institutions in Bungoma County.

### Relationship between ICT adoption in TVET institutions and student enrolment

The objective of the study was to establish the relationship between ICT adoption and student enrollment in TVET institutions in Bungoma County, to achieve the objective, respondents were first requested to rate whether the following ICT resources are available in their institutions or not and then rate the

extent of use of the ICT resources in their TVET institutions.

The hypothesis H<sub>0</sub> was tested: ICT adoption in TVET institutions has no significant relationship with student enrolment in TVET institutions in Bungoma County.

### Availability of ICT Resources in TVET institutions

The distribution of responses on the availability of the ICT resources which also indicated a chi-square test of the homogeneity of responses between the Principals, lecturers and students are presented in table 2

**Table-2: Distribution of respondents by opinion on Availability of ICT resources**

Availability	Principals		Lecturers		Students		$\chi^2$	p-value
Computers	Yes	32 (58%)	Yes	59(51%)	Yes	87(47%)	15.2718	0.000
	No	23 (42%)	No	47(49%)	No	99(53%)		
Computer lab	Yes	21 (38%)	Yes	57(49%)	Yes	70(38%)	13.2781	0.000
	No	34 (62%)	No	59(51%)	No	116(62%)		
College Website	Yes	11 (20%)	Yes	15(13%)	Yes	4(2%)	11.0306	0.001
	No	44 (80%)	No	101(87%)	No	182(98%) (98%)		
Internet Kiosk	Yes	32(58%)	Yes	23(20%)	Yes	0(0%)	1.8211	0.095
	No	23(42%)	No	93(80%)	No	186(100%)		
Teleconferencing facilities	Yes	0(0%)	Yes	0(0%)	Yes	0(0%)	26.5452	0.000
	No	100(100%)	No	116 (100%)	No	186 (100%)		
College e-mail Accounts	Yes	33(60%)	Yes	36(31%)	Yes	5(3%)	1.0527	0.263
	No	22(40%)	No	80(69%)	No	181 (97%)		
E-learning platform	Yes	1(2%)	Yes	7(6%)	Yes	17(9%)	11.0374	0.008
	No	54(98%)	No	109(94%)	No	169(91%)		
College whatsapp group	Yes	43(78%)	Yes	89(77%)	Yes	101(54%)	1.8604	0.104
	No	12(22%)	No	27(23%)	No	85(46%)		
College Facebook group	Yes	43(78%)	Yes	18(16%)	Yes	70(38%)	1.6535	0.098
	No	12(22%)	No	98(84%)	No	116(62%)		
College Instagram group	Yes	43(78%)	Yes	16(14%)	Yes	27(15%)	1.8082	0.435
	No	12(22%)	No	100(86%)	No	159(85%)		
Projectors	Yes	32 (58%)	Yes	59(51%)	Yes	87(47%)	10.0297	0.005
	No	23 (42%)	No	47(49%)	No	99(53%)		
Wi-fi	Yes	40(73%)	Yes	38(33%)	Yes	17(9%)	1.107	0.061
	No	15(27%)	No	78(67%)	No	169(91%)		

Source: Field Data (2019)

Results in Table 2 showed that Principals of TVET institutions representing 32 (58%) indicated that computers are available while 59(51%) of the lecturers and 87(47%) of the students indicated that their institutions had computers in their institutions.

With a  $\chi^2$  values of 15.2718 and p-value of 0.000 ( $p < 0.05$ ), the results indicate homogeneity of responses from the three groups of respondents. 21 (38%) of the principals indicated that computer labs were available in their institutions whereas 57(49%) of the lecturers and 70(38%) of the students indicated that the computer labs are available.

The results from the three groups of respondents indicate that majority of the TVET institutions had no computer labs. With a  $\chi^2$  value of 13.2781 significant at 0.05 ( $p < 0.05$ ), the results show that there was no significant difference in opinion between the principals, lecturers and students as regards the availability of computers laboratories in their Institutions.

11 Principals representing 20% indicated that they had Institutions Websites whereas 15(13%) of the lecturers and 4(2%) of the students held a similar view. The results indicate that TVET institutions had no Institutional website and responses from all the three groups of respondents i.e. Principals, lecturers and students were homogeneous ( $\chi^2 = 11.0306$ ,  $p < 0.05$ ). The results show that there was no significant difference between the three groups on the availability of College websites.

32 Principals representing 58% indicated that the TVET institutions have internet kiosk where students can access internet services whereas 23(20%) of the lecturers and 0(0%) of the students held a similar view. With a  $\chi^2$  value of 1.8211 and p-value of 0.095, the results show that there a statistically significant difference between Principals views and those of their lectures and students on the availability of internet kiosks.

This may be an indicator that some institutions have internet available for administrators and not to other members of the institutions hence it can be shown that TVET institutions have no internet kiosks.

The results are similar to the results on the availability of Wi-Fi in the institutions in which more than half of the 32(58%) Principals indicated that they have Wi-Fi while a marginal number of 23(20%) lecturers and 0(0%) students had the same opinion with the chi-square test of homogeneity indicating that the responses were not in unison ( $\chi^2 = 1.107$ ,  $p = 0.061$ ).

On the availability of teleconferencing facilities all the respondents indicated that the TVET institutions had no such facilities and the views were

similar across the three groups of respondents ( $\chi^2 = 26.5452$ ,  $p = 0.000$ ).

On the availability of college email accounts for the principals, lecturers and students 33(60%) principals indicated that they were available whereas 36(31%) of the lecturers and 5(3%) of the students held a similar view. This implies majority of the lecturers and students held contrasting views on the availability of college email accounts.

The difference in opinion is also supported by the chi-square value of 1.0527 and  $p > 0.05$  indicating lack of homogeneity amongst the three groups.

On the availability of e-learning platforms 1(2%) of the Principals, 7(6%) of the lecturers and 17(9%) of the students indicated that their TVET institutions had an e-learning platform hence could offer courses on-line compared to 54(98%) of the Principals, 109(93%) of the lecturers and 169 (83%) of the students who held the view that e-learning platforms were not available.

With a chi-square value of 11.0374 and  $p = 0.008$ , the study indicated that views held by all the three groups as regards availability of e-learning platforms were statistically similar.

With regard to the availability of Whatsapp, Facebook and Instagram groups for the members of the TVET institutions 43(78%), 43(78%) and 43(78%) of the Principals indicated that they were available whereas majority of the lecturers representing 18 (16%), 18(16%) and 16(14%) and students representing 70(38%), 70(38%) and 27(15%) indicated that they were not available.

Chi-square values of 1.8604, 1.6535 and 1.8082 respectively and p-values all greater than 0.05 implied that there was a significant difference between Principals, teachers and students' views on the availability or non-availability of the social platform accounts for their members.

Additionally, 32(58%) of the Principals 59 (51%) of the lecturers and 87(47%) of the students indicated that projectors were available in their TVET institutions and a chi-square of 10.8082 and p-value of 0.005, confirmed that views from the three groups of respondents were statistically similar.

#### **Extent of Use of ICT Resources in TVET institutions**

To establish the extent of use of ICT in TVET institutions in Bungoma County, respondents were requested to rate on a 5-point multi-item Likert scale the extent to which the various ICT facilities are used for management and administration, student learning and engagement and social networking in their institutions. Weighted averages were used to analyze the data. The results are presented in table 3.

**Table-3: Extent of Use of ICT Resources for Management & Administration in TVET Institutions**

S/N	Management & Administration	Not at all	Little extent	Moderate extent	Large extent	Very large extent	Mean
		1	2	3	4	5	
a.	Online registration	202	91	64	0	0	1.63
b.	School Website and Web pages	212	79	66	0	0	1.59
c.	College Email Accounts	83	159	66	43	6	2.24
d.	Video conferencing	307	50	0	0	0	1.14
f.	Teleconferencing	328	29	0	0	0	1.08

Source: Field Data (2019)

The results of Table 3 indicated that on the use of ICT to carry out online registration, a mean of 1.63 was obtained. This was a result of the majority of the respondents (202 out of 357) who indicated that they were not using online registration in their institutions. The results indicated that TVET institutions were using online registration to a little extent. Also, the following ICT functions were being used in TVET institutions to a little extent: School Website and Web pages (1.59), College Email Accounts (2.24), Animations & Simulations (2.21), Combination of learning resources and computer based interaction adapted to student needs (1.91), Online Research (2.38) and use of Skype (1.80), Video conferencing (1.14), Teleconferencing (1.08). These results indicate that majority of the respondents were not using ICT

resources for Management and Administration in TVET institutions. Use ICT in Management and administration will lead to effectiveness and efficiency in TVET institutions leading to increase in student enrollment.

#### Extent of Use of ICT Resources for Student learning and engagement in TVET Institutions

To establish the extent of use of ICT for student learning and engagement in TVET institutions in Bungoma County, respondents were requested to rate on a 5-point multi-item Likert scale the extent to which the various ICT facilities are used for student learning and engagement in their institutions. Weighted averages were used to analyze the data. The results are presented in Table 4.

**Table-4: Extent of Use of ICT Resources for Student Learning and Engagement in TVET Institutions**

		Not at all	Little extent	Moderate extent	Large extent	Very large extent	Mean
		1	2	3	4	5	
	<b>Student learning and engagement</b>						
a.	E-learning	256	99	2	0	0	1.29
b.	Distance learning	315	42	0	0	0	1.12
c.	Animations & Simulations	109	112	87	49	0	2.21
f.	Combination of learning resources and computer based interaction adopted to student needs	106	177	74	0	0	1.91
g.	Online Research	113	79	87	62	9	2.38

Source: Field Data (2019)

Results of Table 4 indicated that E-learning (1.29) and provision of distance learning (1.12) animations and simulations (2.21), combinations of learning resources and computer based interactions adapted to student's needs (1.91), online research (2.38) were not being used by the TVET institutions in Bungoma County.

This implies that most of the ICT activities which can be used to enhance learning hence increase enrollment of students were not being used in the TVET institutions. Use of ICT in student learning and engagement in institutions can no longer be ignored as it is now the new normal for any learning institution whereby most of teaching /learning materials are being

migrated to online platforms and applications such as 'Zoom' and 'Google Classroom'. An institution not utilizing ICT tools would be viewed as being unprogressive and unattractive especially to the youth and NEETS.

#### Extent of Use of ICT Resources for Social networking in TVET Institutions

To establish the extent of use of ICT for social networking in TVET institutions in Bungoma County, respondents were requested to rate on a 5-point multi-item Likert scale the extent to which the various ICT facilities are used for social networking in their institutions. Weighted averages were used to analyze the data as the results presented in Table 5 show.

**Table-5: Extent of Use of ICT Resources for Social networking in TVET Institutions**

S/N		Not at all	Little extent	Moderate extent	Large extent	Very large extent	Mean
		1	2	3	4	5	
	<b>Social networking</b>						
a.	Whatsapp	12	61	59	140	85	3.63
b.	Facebook	34	41	91	140	74	3.69
c.	Skype	126	177	54	0	0	1.80
d.	Instagram	20	83	176	69	9	2.90
e.	Twitter	58	45	157	84	13	2.86
f.	Youtube	42	71	129	115	0	2.89
g.	Mobile phones	12	21	69	140	115	3.91

Source: Field Data 2019

The Social networking ICT activities were established to be the most commonly used in TVET institutions. Use of Whatsapp (3.63), Facebook (3.69) and Mobile phones (3.91) was to a large extent while the use of Instagram (2.90), Twitter (2.86) and Youtube (2.89) was to a moderate extent.

The results indicate that majority of the respondents were using ICT facilities for social networking which might not have much impact on student enrollment since such activities can be done out of the institutions.

The researcher opines that the TVET institutions need to appreciate that, social networking platforms can also be used as forums to meaningfully engage students on management and administrative issues and learning. This is so because social network platform are not only popular among the youth but can also be leveraged to reach out with information on career opportunities, courses offered and training, opportunities for up scaling and even access online work. This will eventually lead to increase in student enrolment, by attracting the youth, many of whom are tech savvy.

### Aggregation of Extent of Use of ICT in TVET Institutions

The ratings for each respondent for the set of items were summed up to obtain an index which measured the extent of use of ICT in the TVET institutions.

Since the instrument consisted of 17 ICT uses and respondents were rating the extent of their use in their institutions, the following score values would be shown as.

$17 \times 5 = 85$ ; Very large extent,  $17 \times 4 = 68$ ; large extent,  $17 \times 3 = 51$ ; Moderate extent  $17 \times 2 = 34$ ; little extent,  $17 \times 1 = 17$ ; Not at All

Based on the summated scores, a composite score was computed to represent the extent of ICT use in TVET institutions. The average score for the respondents were used to classify the institution as to whether they make use of ICT or not.

Institutions whose average composite index was less than 51 were classified as using ICT to a little extent while those whose average composite score was 51 or above were classified as using ICT to a large extent. Summary statistics of the scores are shown in the table 6.

**Table-6: Descriptive Statistics of Aggregated Extent of ICT Use**

	N	Min	Max	Mean	Std. Dev
Extent of ICT Use	357	17.00	85.00	38.3041	7.00972

Source: Field Data (2019)

The results of Table 6 show that the use of ICT mean index of 38.3041 was obtained with the values deviating from the mean to the extent of 7.00972. This implies that on the average, use of ICT on TVET institutions in Bungoma County was to a little extent, which can to a large extent be attributed to the low enrolment in TVET institutions in Bungoma County.

Findings of Table 6 imply that technologically TVET institutions in Bungoma County will continue to lag behind, which is detrimental to not only for advancement of TVET, but also the entire County in

this 21<sup>st</sup> century where ICT is the engine for economic development and industrialization, Vision 2030, the Big four agenda among others.

### Influence of adoption of ICT on Student Enrolment in TVET Institutions

To establish the relationship between adoption of ICT and Student Enrolment in TVET institutions, first a classification plot was made to provide a visual representation of the influence of ICT on student enrolment. In this case the study used the availability of ICT resources in the TVET institutions and the extent

of use of those resources to classify the enrolment in TVET institutions as either being high or low. The

results are shown in the figure1.

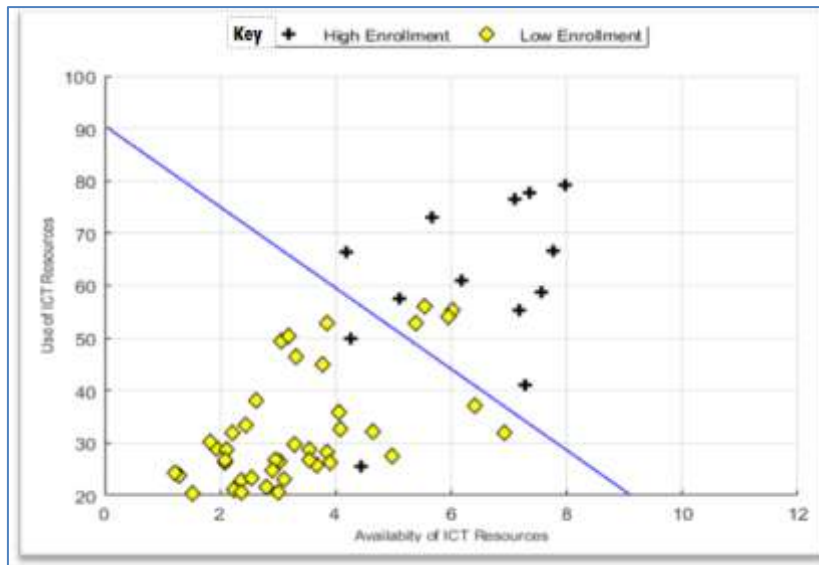


Fig-1: Classification plot of level of enrollment based on availability and use of ICT

The results of the analysis in Figure 1 show that majority of the TVET institutions in which the availability as well as use of ICT resources were both low were classified as having low enrolment of students while a marginal number of the institutions which reported high availability and use of ICT resources were categorized as having high enrollment. The results also show that simultaneously increasing the availability as well as the use of ICT resources improved enrollment in TVET institutions as indicated

by the classification of institutions which were established to have and make use of the ICT resources.

**Pearson Product Moment Correlation Index between ICT Adoption and Student enrollment.**

To ascertain the relationship inferred from figure 1 a Pearson Product Moment Correlation Index was calculated to find out the nature and strength of the relationship between the three variables, Student Enrollment, Availability of ICT Resources and Use of ICT Resources. The result is presented in table 7.

**Table-7: Correlation between availability of ICT adoption and students' enrolment**

		Student Enrollment	Availability of ICT Resources	Use of ICT Resources
Student Enrollment	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	55		
Availability of ICT Resources	Pearson Correlation	.567**	1	
	Sig. (2-tailed)	.000		
	N	55	55	
Use of ICT Resources	Pearson Correlation	.713**	.213	1
	Sig. (2-tailed)	.000	.101	
	N	55	55	55

Source: Field Data (2019)

The results of this analysis in Table 8 show a positive moderate relationship between availability of ICT resources and student enrollment (r=0.567, p-value=0.000). Since the p-value is less than the level of significance alpha 0.05 it implies that the results were statistically significant. This suggests that availability of ICT resources plays a significantly positive role towards increasing student enrollment in TVET institutions.

Further the study established a positive strong relationship between the use of ICT in the TVET institutions and student enrollment (r=0.713, p-value=0.000) significant at 5% level of significance. The Correlational analysis indicate that if the ICT resources are available and are put into use this will lead to an increase in enrollment in the TVET institutions.

**Linear Regression Analysis of the relationship between ICT adoption and student enrollment of TVET institutions**

To further understand the relationship, a linear regression analysis was done. In the regression analysis

student enrollment was the dependent variable and the indicators for ICT adoption (availability of ICT resources and Use of ICT) were the independent variable as shown in Table 9.

**Table-9: Regression Coefficients for the relationship between ICT adoption and student enrolment**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.008	0.335		6.642	0.000
Availability	0.104	0.031	0.280	3.420	0.001
Use	0.185	0.036	0.395	4.962	0.000

a. Dependent Variable: Student Enrollment.

Source: Field Data (2019)

Findings from Table 9 indicate that the positive values of beta mean that, all the two independent variables under study have positive effect on the student enrollment in TVET Institutions as evidenced in their positive values of beta. It is evident from the Table 9 that, every unit increase in availability of ICT resources will result in a 10.4% increase in student enrollment in the TVET institutions and a unit increase in the use of ICT resources resulted to an 18.5% increase in student enrollment in TVET institutions. The standardized beta coefficients indicate that the use of the ICT resources had the greatest effect size of 0.395 compared to the availability of the ICT resources which had a standardized beta value of 0.280.

**T-Test for testing Hypothesis Three (H<sub>0</sub>)**

To test whether this relationship was statistically significant the following hypothesis was tested using a t-test as shown in Table 9 above.

**H<sub>0</sub>** ICT adoption has no significant relationship with student enrolment in TVET institutions in Bungoma County. i.e. (H<sub>0</sub>: b = 0 vs H<sub>a</sub>: b ≠ 0)

**H<sub>a</sub>** ICT adoption has a statistically significant relationship with enrolment institutions in Bungoma County.

Findings in Table 9 above shows that there is a significant relationship between availability of ICT resources and student enrollment ( $\beta = .104$ ;  $p < .05$ ) and there is a significant relationship between the use of ICT resources and student enrollment ( $\beta = .185$ ;  $p < .05$ ). These findings rejected the stated null hypothesis with 95% confidence level and accepted the alternative hypothesis that states that ICT adoption has a statistically significant relationship with student enrolment with 95% confidence level.

**Coefficient of Determination of the relationship between ICT adoption and Student Enrollment**

The coefficient of determination which indicates that the amount of variation in student enrollment can be attributed to the adoption of ICT in TVET institutions is shown in the model summary results shown in Table 10.

**Table-10: Model Summary for Coefficient of Determination of the relationship between ICT adoption and student enrolment**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.701 <sup>a</sup>	0.491	0.488	1.195

Predictors: (Constant), Availability, Use

Source: Field Data (2019)

As table 10 depicts, the value of R<sup>2</sup> was found to be 0.491. This indicates that 49.1% of the variation in enrollment in TVET institution can be attributed to adoption of ICT. This implies that 50.9% of variation in enrolment in TVET institutions can be attributed to other causes other than ICT adoption.

**The Goodness-of-Fit of the Regression Model**

To determine the goodness-of-fit of the regression model, Analysis of Variance (ANOVA) was used and the results are as shown on table 11.

**Table-11: ANOVA for goodness-of - fit of Regression Model**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	437.021	2	218.511	81.625	0.000 <sup>b</sup>
	Residual	139.220	52	2.677		
	<b>Total</b>	<b>576.241</b>	<b>54</b>			

a. Dependent Variable: Student Enrollment b. Predictors: (Constant), Availability, and Use.

Source: Field Data 2019



The analysis of variance results in Table 11 indicate that the model fit is significant at 5% level of significance since  $p=0.000$ ,  $F=81.625$  with 54 degrees of freedom. This implies that the adoption of ICT as measured by the availability of ICT resources and the use of ICT has a significant positive effect on student enrollment.

From Table 11, ICT adoption is measured by availability and use of ICT resources by integration of ICT in management and administration, curriculum implementation, e-learning, online classes and distant learning among other applications. This implies that young people are likely to be attracted to TVET institutions that have adopted ICT in their operations since such initiations portend a future for international marketability and therefore attracted to enroll in such institutions.

The findings illustrated in Table 11 concur with the fact that Purpose of government policy should be for the facilitation and enhancement of ICT integration in TVET institutions [2]. This therefore follows that trainees should acquire 21st Century skills that are not only demand led but also relevant to labour market needs, which skills include ICT compliance. This objective may be realized by ensuring that all students and lecturers have access to ICT resources in addition to ensuring that enabling infrastructure exists in all TVET institutions in Bungoma County, Kenya. Additionally enabling policy should ensure adequate availability and utilization of Digital Learning Resources in the TVET system [2].

Findings presented in Table 11 also agree with Opira [10] who found that availability, accessibility and user-ability of ICT resources significantly affects students' enrolment in Gulu University. Although Opira [10] supported the current study, the main limitation is due the fact that the research was conducted in Gulu University in Uganda, since Uganda's environment in terms of geographical, economic, political and educational system is different from Kenya. Further, the study was conducted in one university and the results could not be verified objectively against the scenarios stated by the respondents in TVET institutions in Kenya. In this regard the researcher found it difficult to generalize the results to other learning institutions in Kenya.

## SUMMARY

The study sought to investigate the relationship between ICT adoption in TVET institutions and student enrolment in Bungoma County.

The results of the analysis show that majority of the TVET institutions in which the availability as well as use of ICT resources were both low were found to have low enrolment of students and indicated that simultaneously increasing the availability as well as the

use of ICT resources improved enrolment in TVET institutions as indicated by the classification of institutions which were established to have and made use of the ICT resources.

The Pearson Correlation analysis results showed a positive moderate relationship between availability of ICT resources and student enrollment ( $r=0.567$ ,  $p=0.000$ ) and a positive strong relationship between the use of ICT in the TVET institutions and student enrollment ( $r=0.713$ ,  $p=0.000$ ) significant at 5% level of significance.

Regression analysis results showed that there was a significant effect of availability of ICT resources ( $\beta=.104$ ;  $p<.05$ ) and the use of ICT resources ( $\beta=.185$ ;  $p<.05$ ) on student enrollment. The value of  $R^2$  was found to be 0.491 which indicated that 49.1% of the variation in enrollment in TVET institution can be attributed to adoption of ICT.

## CONCLUSION

Based on the findings of the research, the researcher concluded that ICT adoption in TVET institutions has a statistically significant relationship with student enrolment hence if ICT resources are available and put into use, this will lead to an increase in student enrolment in the TVET institutions.

## RECOMMENDATIONS

Fully functional ICT facilities be made available in all TVET institutions and be used for management and administration and student learning and engagement a phenomenon that will likely lead to increased student enrolment in TVET institutions.

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