Teachers awareness, perception and use of OERs in Teaching English in Public Secondary Schools

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ABSTRACT: This study examined teachers' awareness, access, and use of open educational resources (OERs) and their impact on English teaching in secondary schools in Tanzania. The study was conducted in Mvomero district in Morogoro Region. It was about how English teaching is supported through the use of OERs. The study used a mixed approach, and data was collected from a sample of 100 participants. The sample was determined by criteria sampling, simple random sampling, and purposive sampling. Data were collected through questionnaires and focus group discussions. In data analysis, thematic analysis was used for qualitative data. In contrast, regression analysis was carried out for quantitative data using SPSS to determine whether there is a significant relationship between teachers' awareness, access and use of OERs in English language teaching. The results showed that only 35% of participants knew that OERs are beneficial and support English teaching. The results also showed that only 23% of participants had access to OER.

Moreover, only 9% of participants reported using OERs to support their teaching. Regression analysis revealed a significant relationship between teachers' awareness and access to and use of OERs to support their teaching. The study concluded that there is a need to increase English teachers' awareness and access to OERs to expand their use in the classroom. The study recommended that English teachers develop confidence in accessing and using OERs. Education stakeholders should facilitate teachers' capacity building on access and use of OERs and conduct future studies to address individual factors affecting teachers' awareness, access, and use of OERs in English language teaching in secondary schools.

KEYWORDS: Open Educational Resources; Public Secondary schools; teacher's awareness; Teachers use

1. INTRODUCTION

As global initiatives aim to make education affordable for everyone by minimizing costs such as tuition and school fees and even adopting tuition-free education policies, the question of quality and affordable educational resources remains a problem in the global education community but mainly must be solved in developing countries, especially in sub-Saharan countries such as Tanzania. Common educational resources such as textbooks in developing countries are indeed among the factors that increase the cost of education. They also affect the quality of education when a school or a support person, such as a teacher, does not cover the costs of purchasing quality reading materials. To understand the negative impact of unaffordable educational resources, the OER movement intervened by providing high-quality and affordable educational resources to students of all social classes with access to alternative low-cost textbooks (Bradley, 2013). OER focuses primarily on cost savings for students, particularly those from low-income families (Grewe and Davis, 2017). However, for students to access and use OER, be it course materials, modules, textbooks, streaming videos, tests, software, or any other tools, materials, or techniques used to support access to knowledge (William and Hewlett, 2013), The need for teacher guidance is significant. In other words, the more familiar teachers become with OER, the better-informed students are and the greater their access to and use of OER. Open Educational Resources (OER) refers to learning, teaching, and research resources in any form and medium publicly owned or distributed under an open license, allowing free access, reuse, repurposing, etc. Adaptation and redistribution by others (Yuan et al. 2008). They are usually made freely available on the Internet or the Web. Teachers and educational institutions use them primarily to facilitate course development, but they can also be used directly by students.

Learning objects such as lecture materials, references and readings, simulations, experiments, demonstrations, syllabi, syllabuses, and teacher manuals are examples of open educational resources (D'Antoni 2009). "Openness" is a popular academic tradition that promotes free access to knowledge and technology (Cronin and MacLaren 2018). Its mission was to help create impactful, lasting changes in learning opportunities for all children, wherever they are (Wiley et al. 2014). Reduced public education resources have increased accountability and unprecedented tensions in schools and systems (Hylén 2021). Open educational resources are global inventions that leverage the widespread availability of ICTs to democratize learning by making high-quality learning materials and tools available to anyone, anywhere, at any time, and at low cost (Yuan et al. 2008). Advances in technology have enabled teachers in underdeveloped countries to access up-to-date materials to support their teaching - materials that would otherwise never be available to them (Dutta 2016). It has been established, though, that the bulk of users of open education resources come from wealthier nations (Bissell 2009). Teachers and both formal and independent learners are using open educational resources (OER) at previously unheard-of levels due to the rapid advancements in ICT. The movement for open education resources aims to address disparities in educational access (Atkins et al. (2007). Students and educators resorted to emerging information and communication technologies to meet these new demands. One such resource that they used was Open Educational Resources, the utilization of which is the focus of this study. As in most regions of Tanzania, teachers in Morogoro have a high demand for educational resources, while the supply is limited for various reasons. Because teachers are responsible for ensuring they read and prepare for their lessons, their need for access to available educational resources is paramount. Teachers' Common initiatives include sharing class notes, using their old notes and reference books, and photocopying reading materials from other fellows who had access to them.

Although the initiative goes so far as not to leave teachers empty-handed, the most considerable risk in this process is the quality of the material disseminated. This doubt can lead to two assumptions: First, the cases in which students from different schools massively fail in a particular subject despite being taught by different teachers suggest that students may be sharing an irrelevant resource. Second, because teachers lack sufficient resources to make comparisons and make decisions; they share the same resources for years. Therefore, when asked about poor academic performance, their main argument remains the lack of resources, as demonstrated in the studies of Chakupewa (2018). Nghambi, (2015); and Melack, (2014). Teacher awareness is a teacher's ability to recognize and understand their tendencies, biases, and blind spots to serve their students better. It can also be defined as the practice of keeping abreast of the best teaching methods, educational trends, and understanding students' needs well in order to create the best possible learning environment. The use of modern digital technology is currently common practice in business, the entertainment industry, politics, science, medicine and education. Educational studies have shown that modern digital technology through ICT achieves significant achievements in the field of education and research (Robinson, 2015; Robinson et al., 2014; and Hilton III, et al., 2013). Furthermore, numerous studies conducted in the education sector have specifically focused on OERs and their impact on postsecondary students' academic performance (Robinson, 2015; Hilton III and Laman, 2012; and Lovett, Meyer, and Thille, 2008).). Other renowned studies in the same field have addressed the issue of students' access to, use and performance of OER (Grewe and Davis, 2017; Allen, Guzman-Alvarez, Molinaro and Larsen, 2015; and Feldstein et al. 2012). These and other effectiveness studies found that students who successfully access and use OERs achieve better or equivalent outcomes than students who use traditional reading materials (Grewe and Davis, 2017). Although previous studies have focused extensively on the access and use of OERs, the extent to which modern digital technology is used to facilitate English language teaching and learning in secondary schools in Tanzania is not yet well understood. Consequently, there is a general assumption that modern digital technology is for entertainment purposes and is less related to teaching and learning, particularly in secondary education. To examine this assumption, the current study examined the extent of teachers' awareness, access and use of OERs when teaching English language in secondary schools in Tanzania. This was in response to the fact that previous studies conducted in other parts of the world focused mainly on the influence of OER on students' learning performance without considering the teaching aspect.

With the growth and spread of modern technology, it is possible to access a lot of digital technology. Teachers, like everyone else are not far from using laptops, tablets and mobile phones to operate globally and access current trends. However, the question remains as to the extent to which they are aware of the availability, access, and use of OERs, which is intended to alleviate the problem of inadequate teaching and learning resources. The current study was carried out against this background.

2. RESEARCH METHODOLOGY

2.1 Research design

The cases were selected among English teachers in secondary schools in the Morogoro region, particularly in Mvomero district. Teachers, as curriculum implementers, were considered important participants because they were considered to have rich data on awareness, access, and use of OERs. Other educational stakeholders involved in monitoring curriculum implementation were also involved, as some of the required data, particularly on access and use of OERs, required informants who had extensive data on policy issues. Samples were drawn from both rural and urban populations to provide a true representation of the population in Mvomero District, although the results were not generalizable. The diversity of sampling representation should include different experiences and data to reflect the actual situation.

2.2 Area of the study

The study was conducted in Mvomero District in Morogoro Region. The area was chosen because it has reliable network and internet connectivity for digital communication and has a sufficient number of teachers using digital devices such as smartphones, tablets and laptops. The location is also considered suitable due to the prevailing digital technology culture through which the population in the district embraces modern digital technology in entertainment and business by using their accounts on Facebook, Instagram and WhatsApp to name a few. This suggests that the Mvomero population was not new to the world of modern digital technology and is therefore suitable for the data required in this study. Mvomero District also has a large number of secondary schools, either publicly or privately owned. In most of these schools, the lack of teaching and learning resources is a persistent problem, particularly in public secondary schools. This opens scope for examining the extent to which teachers were aware of alternative ways to address the problem through the use of modern digital technology and how often these alternative means were used to support teaching and learning processes and thereby improve student performance. This scenario made Mvomero district an appropriate research location to provide adequate and diverse data.

2.3 Sample and sampling technique

2.3.1 Sample size

This study used a sample of 60 participants from a target population consisting of a total of 90 employees. Data were collected from 40 secondary school English teachers, 10 heads of English department, 1 District Education Officer (DEO), 03 school inspectors, 04 Ward Education Officers and 02 parent representatives. The reason for selecting this sample size is that the researcher is interested in an in-depth study that requires participants with rich and diverse data to address both administrative and pedagogical issues related to modern digital technology and English language teaching and learning to answer.

2.4 Sampling procedures

The study used both purposive and simple random sampling to select participants from the study population.

2.5 Purposive sampling

The study used purposive sampling to select 10 English language department heads; 01 district education officer, 04 district education officer as well as 03 school inspectors and 02 parent representatives. These respondents were key informants who have comprehensive and diverse data on their professionalism and experience in teaching and learning and in the use of modern digital technology in different areas of life.

2.6 Simple random sampling

The study used a simple random sampling technique to select English teachers from the selected secondary school. The study used this technique as it aimed to collect data from different respondents with different characteristics. Using a simple random sampling technique, 40 purposively selected teachers were selected from 10 secondary schools in 04 districts. Sampling technique was used to avoid bias in collecting data from the selected sources. The selected districts and their respective secondary schools were all located in Mvomero District in Morogoro Region. The sampling frame was obtained from the district education office. Ten pieces of paper were prepared, only four of which were numbered and the rest were blank. The pieces were folded and a maximum of 10 English teachers from each school were asked to select a piece of paper. If the number of English teachers is less than 10 but more than 04, the slips matched the number of teachers. After each teacher selected a folded piece of paper, everyone was asked to unfold their paper, and only those with numbered pieces of paper were selected to participate in the study. This process was repeated in all 10 schools until a sample of 40 English teachers was assembled.

2.7 Data collection methods
2.7.1 Questionnaire
A questionnaire can be defined as a research instrument consisting of a series of questions and other prompts to collect information from respondents. The study used questionnaires to collect quantitative data on secondary school teachers' awareness, access and use of OERs to support English teaching and learning. The study used questionnaires with open and closed endpoints for English teachers in selected secondary schools in Mvomero district. The questionnaires collected quantitative data on teachers' level of awareness of the available OERs, access and extent of their use of OERs to support English language teaching and learning. 80% of the data collected was quantitative in nature and responses were based on the Likert scale. The remaining 20% required qualitative data in response to open-ended questions from the questionnaire. 40 questionnaires were distributed to English teachers in the selected secondary schools, administered and later collected as only 04 teachers were involved in each school.

The other 20 questionnaires were administered to key informants to collect data from the perspective of curriculum managers. The use of questionnaires was preferred due to the ability to collect data from a larger number of participants in a short period of time and the accuracy of the data collected. The questionnaires were administered by the researcher and a research assistant.

2.8 Data analysis
Data analysis can be defined as the process that includes collecting, editing, coding, classifying, analyzing and cross-tabulating the collected data of data. The researcher used both qualitative and quantitative techniques during the study as they were conducted simultaneously. Regression analysis was performed using the SPSS version 25 software program (SPSS, Inc., Chicago, IL, USA) to process quantitative data.

3. RESULTS
The level of awareness of teachers in English teaching offerings. It was observed that the level of awareness of teachers was influenced by several factors. Based on the scale used, only 35% of respondents reported that they were aware of OERs used to support English teaching and learning in secondary schools. These results were based on the test that included selected variables that were considered important in describing the cause of some of the respondents' behaviors. The test conducted included several independent variables tested based on teachers' awareness of OERs for teaching English. The results are shown in Table 3.1

Table 3.1 Mean and Standard Deviation

	Mean	Std. Deviation	N
67	3.52	1.052	100
Work_ experience	1.317	.5474	100
Education level	2.57	.561	100
Gender	1.57	.495	100
Age	37.84	6.992	100

The results showed that the standard deviation for age, which was 6.9, was outside the S.D. range and therefore not closer to the true value, while the remainder represented measurements that were closer to the true value as they were less than ±2. These results also showed that except for age, whose data was spread out due to high standard deviation, the remaining data were clustered around the mean and thus had good standard deviation as its value was less than ±2.0. The mean for age (37.84) was exceptionally higher than the rest of the variables. This variation defined the difference between age and the remaining variables.

The findings also revealed the correlation between the extent of teachers' awareness and work experience, education level, gender and age. The findings were as presented in Table 3.2.

Table 3.2   Correlations (N=67)

	Work experience	Education level	Gender	Age
Work experience	.050	1.000	.171	-.080	-.051
Education level	.217	.171	1.000	-.236	-.273
Gender	-.070	-.080	-.236	1.000	.081
Age	-.078	-.051	-.273	.081	1.000

The results showed that there were positive relationships between teachers' level of awareness of OERs for English teaching and professional experience, whose value was 0.05, and education level, whose value was 0.21, as their values were greater than 0. Conversely, there were negative relationships between teachers' level of awareness of OERs for teaching English and gender, whose value was -07, and age, which was also -07. This is because the gender and age values were less than 0. Based on the results, the model summary in Table 3.3 was used to indicate the strength of the relationship between the model and the dependent variable.

Table 3.3 Model Summary

Model	R	R Square	Adjusted R Square	RStd. Error of the Estimate
1	.219a	.048	.035	1.034

a. Predictors: (Constant), age, work experience, gender, education level
b. Dependent Variable: 67

The results in Table 3.3 show that the R-squared is 0.04, which means that 4% of the variation in the output variable is explained by the input variable. Thus, only 4% of the observed variation in the target variable is explained by the regression model. An ANOVA test was performed to compare the variation between sample means and the variation within each sample. The results are shown in Table 3.4.

Table 3.4 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	15.438	4	3.860	3.613	.007
	Residual	307.667	288	1.068		
	Total	323.106	292			

a. Dependent Variable: 67
b. Predictors: (Constant), age, work experience, gender, education level

Model		Unstandardized Coefficients		Sig.	95.0% Confidence Interval for B	
		B	Std. Error		Lower Bound	Upper Bound
1	(Constant)	2.684	.578	.000	1.545	3.822
	Work experience	.024	.112	.828	-.196	.245
	Education level	.383	.116	.001	.154	.612
	Gender	-.042	.126	.741	-.289	.206
	Age	-.003	.009	.744	-.021	.015

a. Dependent Variable: 67

A one-way ANOVA was conducted to compare the effects of professional experience, education level, gender, and age on teachers' level of awareness of OERs for teaching English in secondary schools. The results showed that the differences between teachers' level of awareness of OERs for teaching english (0.00) and education level (0.00) were significant, while professional experience (0.82), gender (0.74) and Age (0.74) were statistically insignificant. Based on the results, the scatter plot was plotted as shown in Figure 3.1.
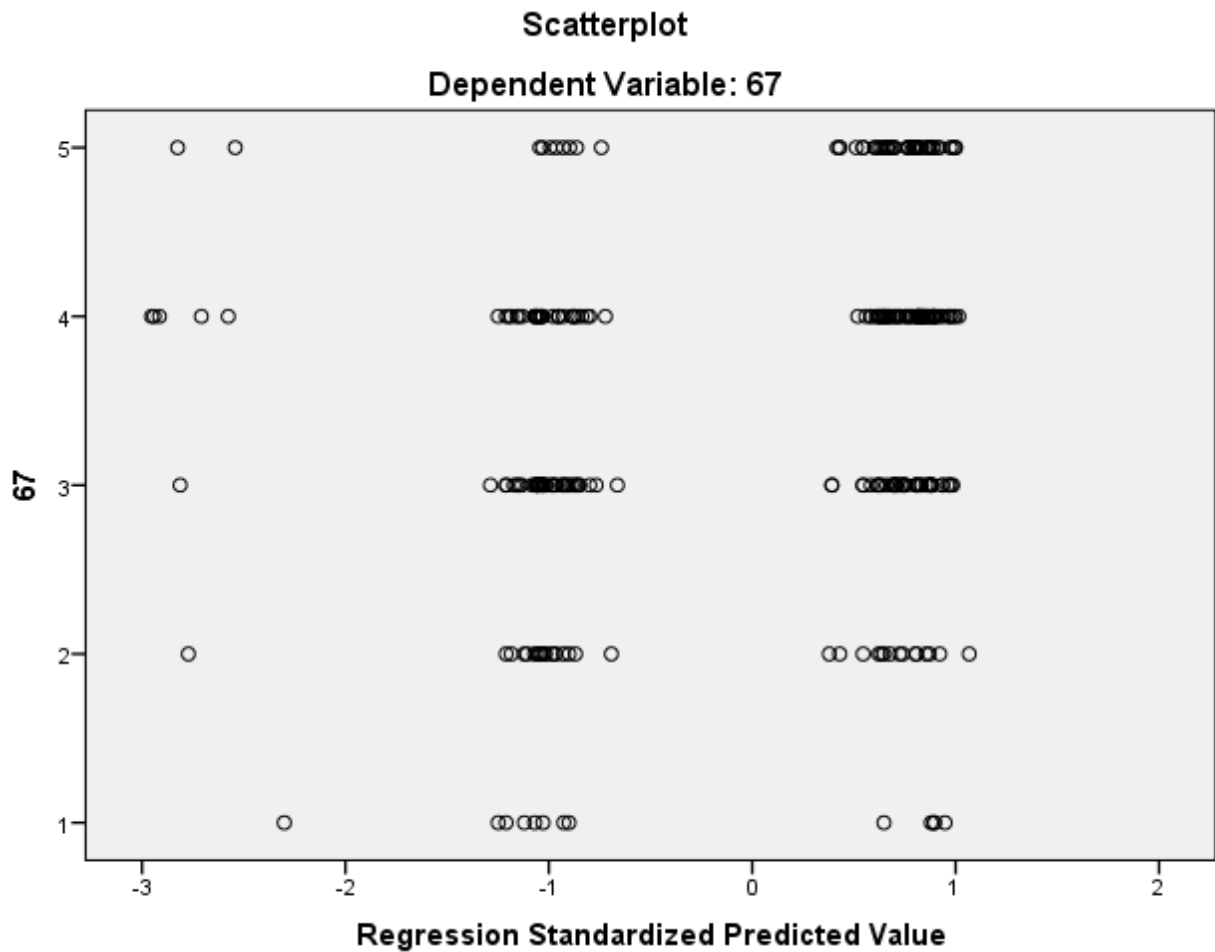
Scatterplot
Dependent Variable: 67

Figure 3.1. The extent of teachers' awareness of OERs for teaching English and work
Experience, education level, age and gender

3.3 The Extent of Teachers' Access to OERs for Teaching English
The results showed that only 23% of participants had access to OERs for teaching English in secondary schools. These results are based on factors tested based on the extent of teachers' access to OERs. The test conducted included several independent variables tested based on teachers' access to OERs for teaching English in secondary schools. The results are shown in Table 3.5

Table 3.5 Mean and Std. Deviation

	Mean	Std. Deviation	N
68	3.75	.934	100
27	3.81	.876	100
3	3.88	1.079	100
9	3.95	.997	100

The results showed that the standard deviation for (68) the extent of teachers' access to OERs for teaching English was 0.93, (3) Internet speed and connectivity was 1.07, (9) reliability and bandwidth strength was 0, 99 and (27) gadgets and institutional support, which was 0.87, were all closer to the true value as they were less

than ±2. These results also suggested that the data was clustered around the mean and thus had a good standard deviation as its value was less than ±2.0. The mean for all variables was between 3.75 and 3.95 with a difference of only 0.20. This suggested a close statistical relationship between the variables. The results also showed the correlations between (68) the extent of teachers' access to OERs for teaching English and (3) Internet speed and connectivity, (9) reliability and strength of bandwidth, and (27) gadgets and institutional support. The results are shown in Table 3.6.

Table 3.6 Correlations

		68	27	3	9
Pearson Correlation	68	1.000	.435	.321	.339
	27	.435	1.000	.509	.506
	3	.321	.509	1.000	.561
	9	.339	.506	.561	1.000

The results showed that there was a positive relationship between (68) the extent of teachers' access to OERs for teaching English (1.0) and the remaining tested variables (27, 3 and 9), whose values were respectively 0.43, 0.32 and 0.33 were; since their values were greater than 0. Based on the results, the model summary in Table 3.7 was used to indicate the strength of the relationship between the model and the dependent variable.

Table 4.7 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.461	.212	.204	.833

a. Predictors: (Constant), 9, 27, 3
b. Dependent Variable: 68

The results in Table 3.2.3 show that R-squared is 0.21, which means that 21% of the variation in the output variable is explained by the input variable. Thus, only 21% of the observed variation in the target variable is explained by the regression model. An ANOVA test was performed to compare the variation between sample means and the variation within each sample. The results are shown in Table 3.8

Table 4.8 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	54.080	3	18.027	25.953	.000
	Residual	200.733	289	.695		
	Total	254.812	292			

a. Dependent Variable: 68
b. Predictors: (Constant), 9, 27, 3

Coefficients

Model	Unstandardized Coefficients		Sig.	95.0% Confidence Interval for B	
	B	Std. Error		Lower Bound	Upper Bound
1 (Constant)	1.671	.243	.000	1.193	2.149
27	.350	.068	.000	.216	.484
3	.072	.058	.211	-.041	.185
9	.118	.062	.058	-.004	.241

A one-way ANOVA was conducted to determine the impact of (3) Internet speed and connectivity, (9) reliability and strength of bandwidth, and (27) devices and institutional support on (68) the extent of teachers' access to OERs for teaching English compare. The results showed that the differences between (68) the extent of teachers' access to OERs for teaching English (0.00) and (27) gadgets and institutional support (0.00) and (3)

internet speed and connectivity bridging (0, 02) were statistically significant. Conversely, the difference between (68) the extent of teachers' access to OERs for teaching English and (9) the reliability and strength of the range (0.05) was statistically significant as its value was 0.05. Basing on the findings, the chart was plotted as presented in Figure 3.2

Histogram

Dependent Variable: 68

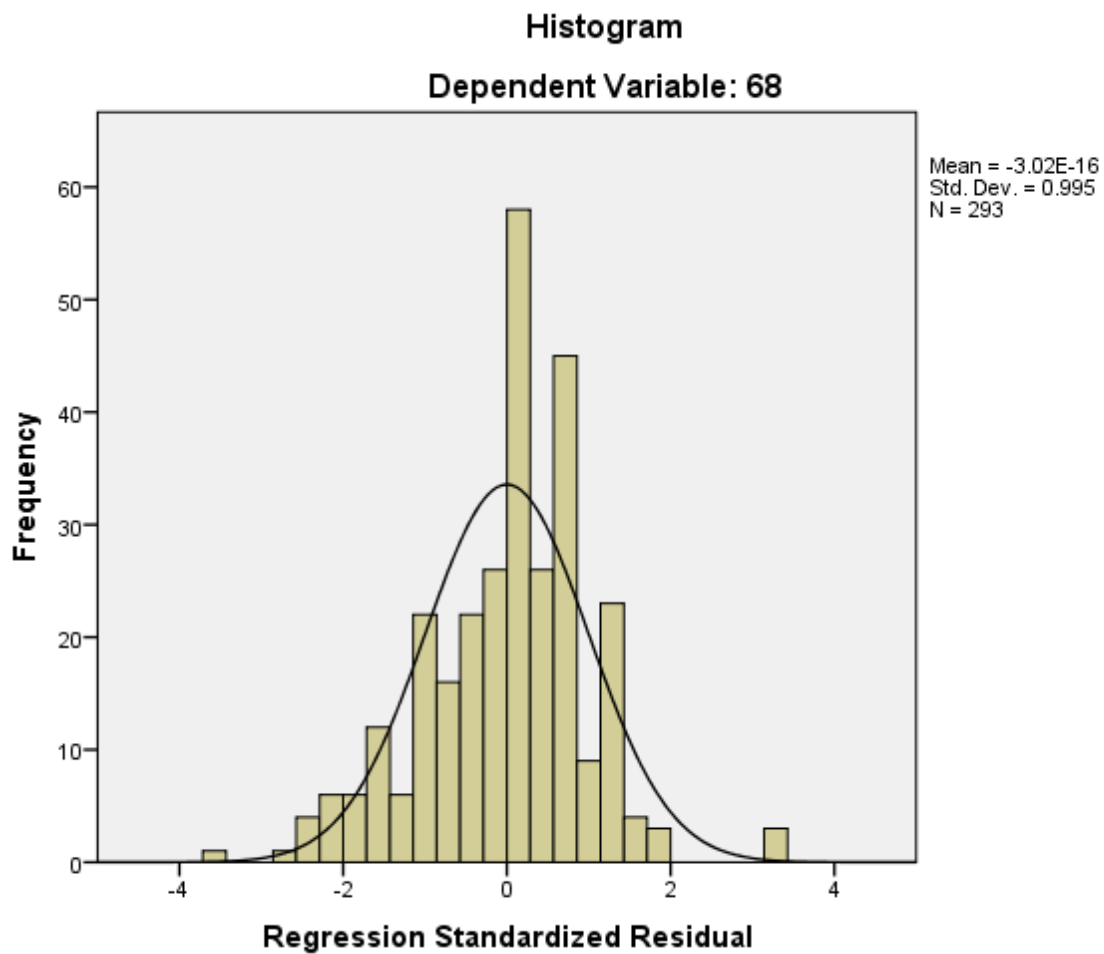Mean = -3.02E-16
Std. Dev. = 0.995
N = 293

Figure 3.2. The extent of teachers' access to OERs for teaching English and Internet speed and connectivity, reliable and strong bandwidth and gadgets and institutional support.

Figure 3.2 indicates that there was normal distribution among the factors as shown in the skewness with the highest concentration in the middle. The distribution was plotted in a normal P-plot diagram as shown in Figure 3.3
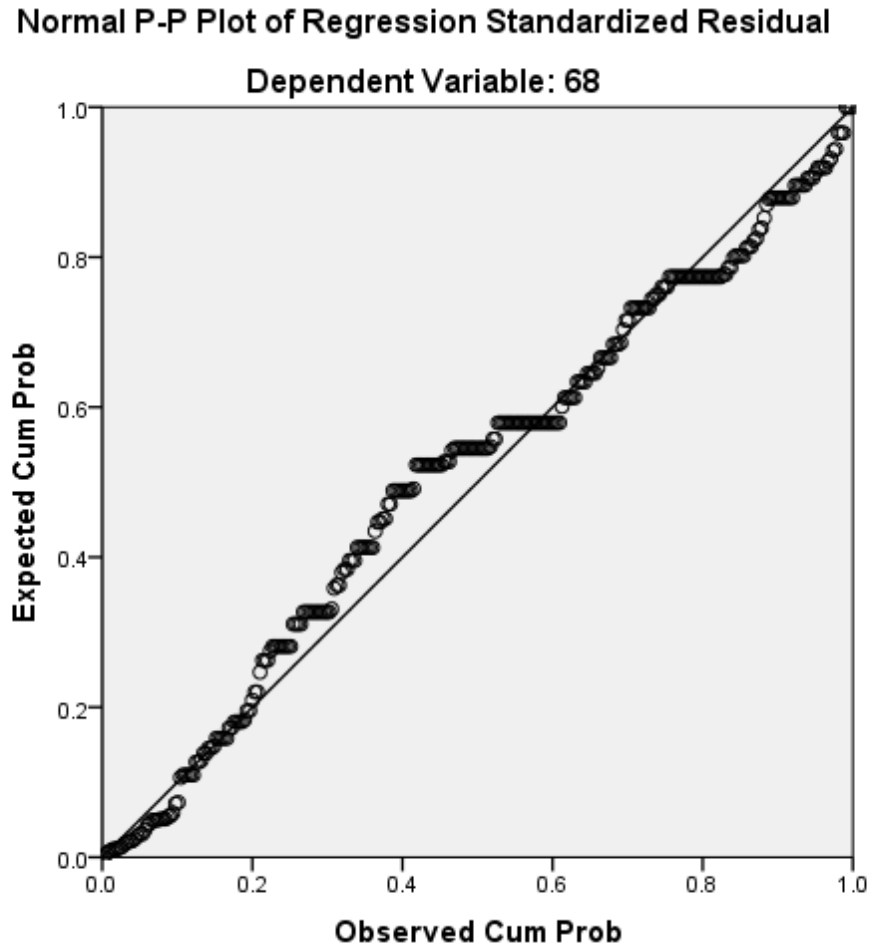
Figure 3.3 Normal P-Plot on Intrinsic research motivation
The same findings were presented through a scattered diagram as presented in Figure 3.4
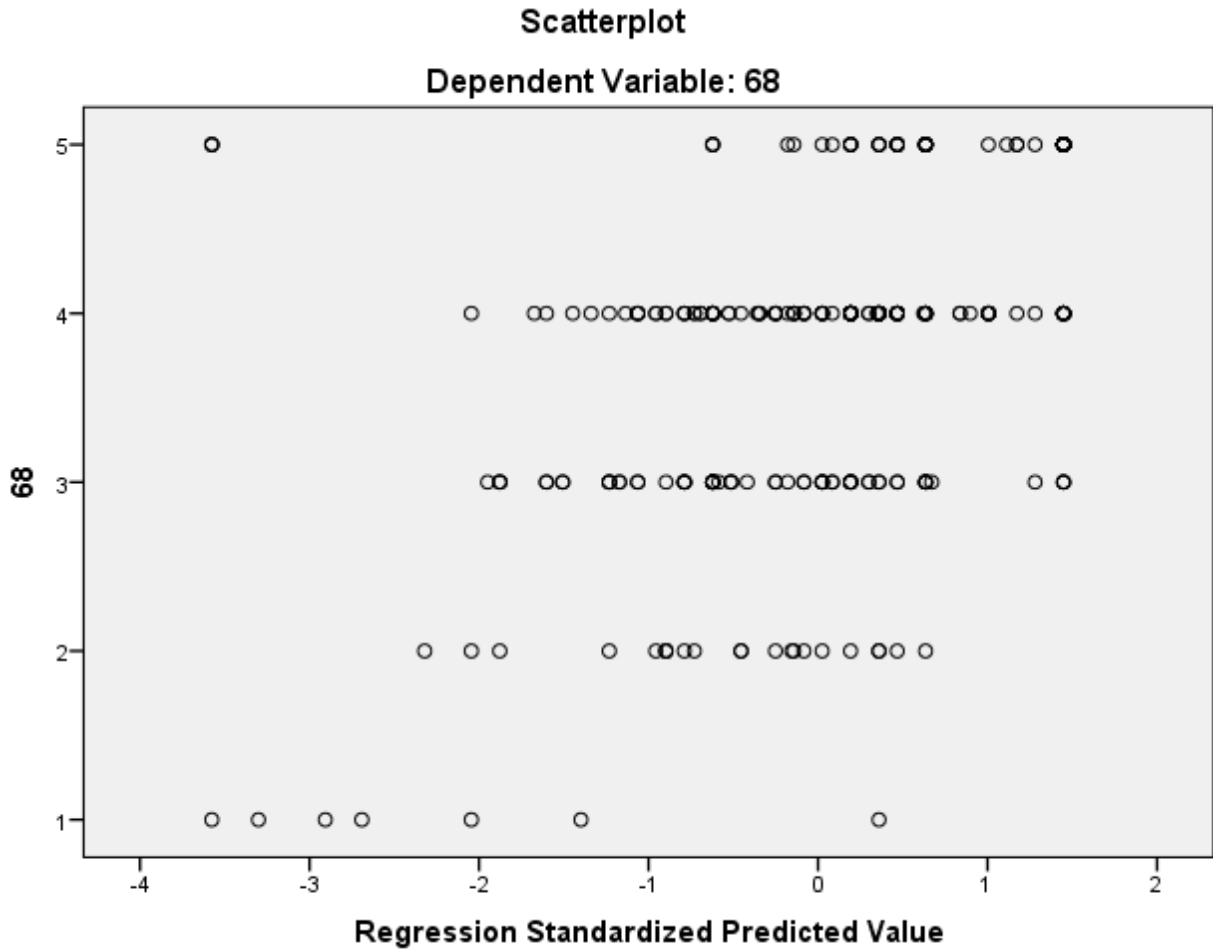
Scatterplot

Dependent Variable: 68

Figure 3.4 Scatterplot on Intrinsic Research Motivation

3.3 The Extent of Teachers' Use of OERs in Teaching English

The test conducted involved multiple independent variables which were tested against intrinsic research motivation as dependent variable to describe the mean and standard deviations. The findings were as presented in Table 3.9

Table 4.9 Mean and Standard Deviation

	Mean	Std. Deviation	N
70	3.58	1.065	100
35	3.66	.767	100
14	3.53	1.145	100
Work experience	1.317	.5474	100

The results showed that the standard deviation for (70) the extent of teachers' use of OERs in English classes was 1.06, (35) the self-perception of OERs was 0.76, (14) the capacity built in the use of OERs was 1.14 and work performed experience was 0.54 were all closer to the true value as they were less than ±2. These results also showed that the data was clustered around the mean and therefore had a good standard deviation as its value was less than ±2.0. The mean for all variables ranged from 1.31 to 3.66. With the exception of work experience, the difference between the remaining factors is only 0.13. This suggested a close statistical relationship between these variables. The results also showed the correlations between (70) the extent of teachers' use of OERs in English classrooms and (14) the capacity built for the use of OERs, (35) self-perception of OER and professional experience. The results are shown in Table 3.10

Table 3.10 Correlations

	70	35	14	Work experience
70	1.000	.390	.298	.077
35	.390	1.000	.413	-.027
14	.298	.413	1.000	-.001
Work experience	.077	-.027	-.001	1.000
70	.	.000	.000	.096
35	.000	.	.000	.325
14	.000	.000	.	.493
Work experience	.096	.325	.493	.

The results showed that there was a positive relationship between (70) the extent of teachers' use of OERs in teaching English (1.0) and the remaining variables tested, namely (35) capacity built through the use of OERs and (14) self-perception of OER and work experience, the values of which were 0.39, 0.29, and 0.07, respectively; since their values were greater than 0. Based on the results, the model summary in Table 3.11 was used to indicate the strength of the relationship between the model and the dependent variable.

Table 3.11 Model Summary

Model	R	R Square	Adjusted R Square	RStd. Error of the Estimate
1	.426	.182	.173	.969

a. Predictors: (Constant), work experience, 14, 35
b. Dependent Variable: 70

The findings in Table 3.11 show that R square is 0.18 which means 18% of the variation in the output variable is explained by the input variable. Thus only 18% of the observed variation in the target variable is explained by the regression model.

In making comparison of variations between the sample means and variation within each sample, ANOVA test was conducted and the findings were as presented in Table 4.12.

Table 3.12 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	60.239	3	20.080	21.404	.000
	Residual	271.126	289	.938		
	Total	331.365	292			

a. Dependent Variable: 70
b. Predictors: (Constant), research fields, 14, 35

Coefficients

Model	Unstandardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Sig.	Lower Bound	Upper Bound
(Constant)	1.175	.319	.000	.548	1.802
35	.450	.081	.000	.291	.610
14	.152	.054	.005	.046	.259
research fields	.166	.104	.110	-.038	.370

a. Dependent Variable: 70

A one-way ANOVA was conducted to compare the effect of (3) bridging social capital, (14) bonding social capital, and (35) self-efficacy on intrinsic research motivation. The results showed that the differences between intrinsic research motivation (0.00) and (14) bonding of social capital6 (0.00), (35) self-efficacy 9 (0.00) were significant and research fields (0.11) were not statistically significant. based on the results, the diagram was plotted as shown in Figure 3.5
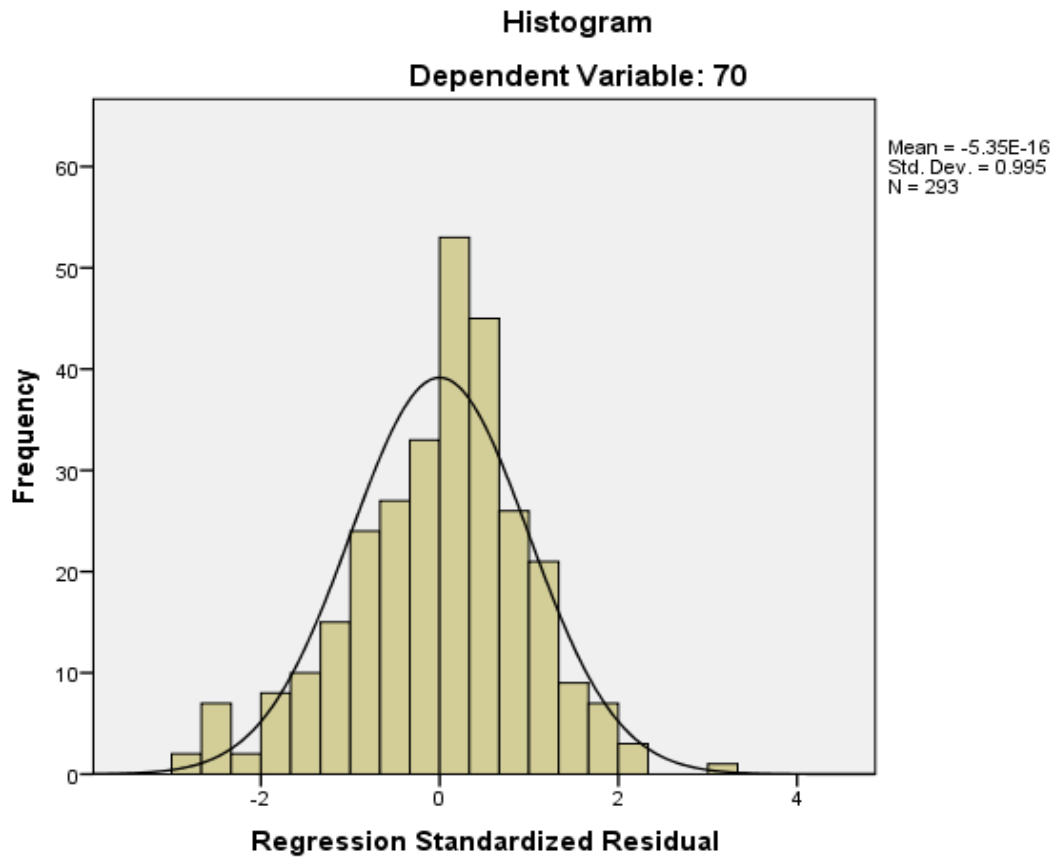
Figure 3.5 The extent of teachers use of OER in teaching English and self-perception, capacity build and work experience

Figure 3.5 indicates that there was normal distribution among the factors as shown in the skewness with the highest concentration in the middle. The distribution was plotted in a scatter plot as shown in Figure 3.6
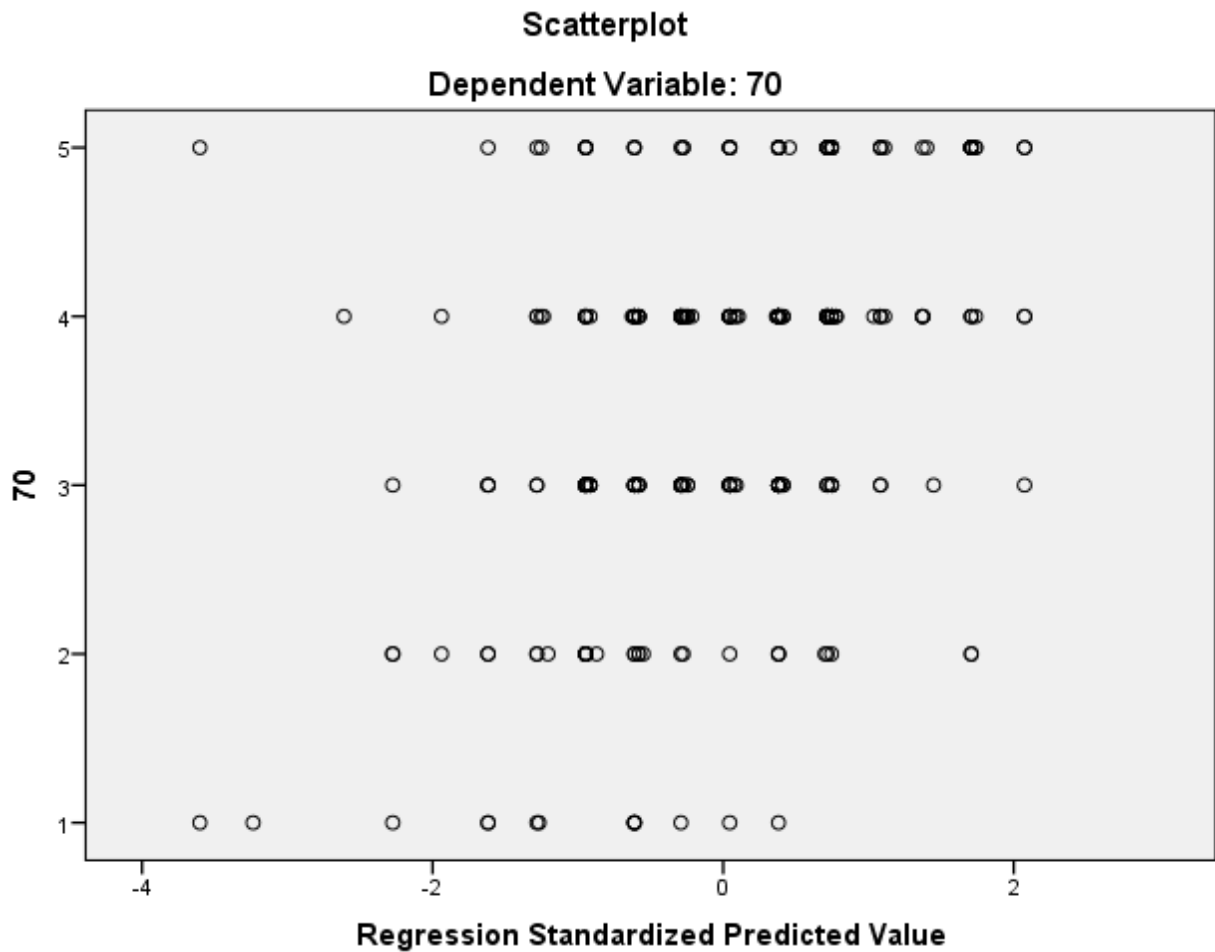
Figure 3.6 Scatterplot on Intrinsic Research Motivation

3.4. The Relationship between the Use of OERs in Teaching English and Other Factors

3.4.1 The use of OER and school management support

The test conducted included (80) school leadership support as an independent variable, which was tested against (71) the extent of teachers' use of OERs as a dependent variable describing their means and standard deviations. The results are shown in Table 4.13

Table 3.13. Mean and Standard Deviation

	Mean	Std. Deviation	N
71	3.09	1.137	293
80	3.26	1.111	293

The results showed that the standard deviation for (71) level of teacher use of OERs, which was 1.13, and (80) school leadership support, which was 1.11, were all closer to the true value as they were less than ±2. These results also showed that the data was clustered around the mean and therefore had a good standard deviation as its value was less than ±2.0. The mean for all variables was between 1.11 and 1.13, so the difference was only 0.02. The results also showed the correlations between (71) the extent of teachers' use of OERs and (80) school leadership support. The results are shown in Table 3.14.

Table 3.14 Correlations

		71	80
Pearson Correlation	71	1.000	.353
	80	.353	1.000
Sig. (1-tailed)	71	.	.000
	80	.000	.

The results showed that there was a positive relationship between (71) the extent of teachers' use of OERs (1.0) and (80) school leadership support, whose value was 0.3 as their values were greater than 0. Based on the model summary results in Table 3.15 was used to indicate the strength of the relationship between the model and the dependent variable.

Table 3.15 Model Summary

Model	R	R Square	Adjusted R Square	RStd. Error of the Estimate
1	.353a	.125	.122	1.066

a. Predictors: (Constant), 80
b. Dependent Variable: 71

The results in Table 3.15 show that R-squared is 0.12, which means that 12% of the variation in the output variable is explained by the input variable. Thus, only 12% of the observed variation in the target variable is explained by the regression model. An ANOVA test was performed to compare the variation between sample means and the variation within each sample. The results are shown in Table 3.16

Table 4.16 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.092	1	47.092	41.451	.000b
	Residual	330.601	291	1.136		
	Total	377.693	292			

a. Dependent Variable: 71

b. Predictors: (Constant), 80

Model		Unstandardized Coefficients		Sig.	95.0% Confidence Interval for B	
		B	Std. Error		Lower Bound	Upper Bound
1	(Constant)	1.910	.193	.000	1.530	2.291
	80	.362	.056	.000	.251	.472

a. Dependent Variable: 71

A one-way ANOVA was conducted to compare the effect of (80) school leadership support on (71) the extent of teacher use of OERs. The results showed that the differences between the level of teacher use of OERs (0.00) and (80) school leadership support (0.00) were statistically significant. Based on the results, the diagram was plotted as shown in Figure 3.7

Histogram

Dependent Variable: 71

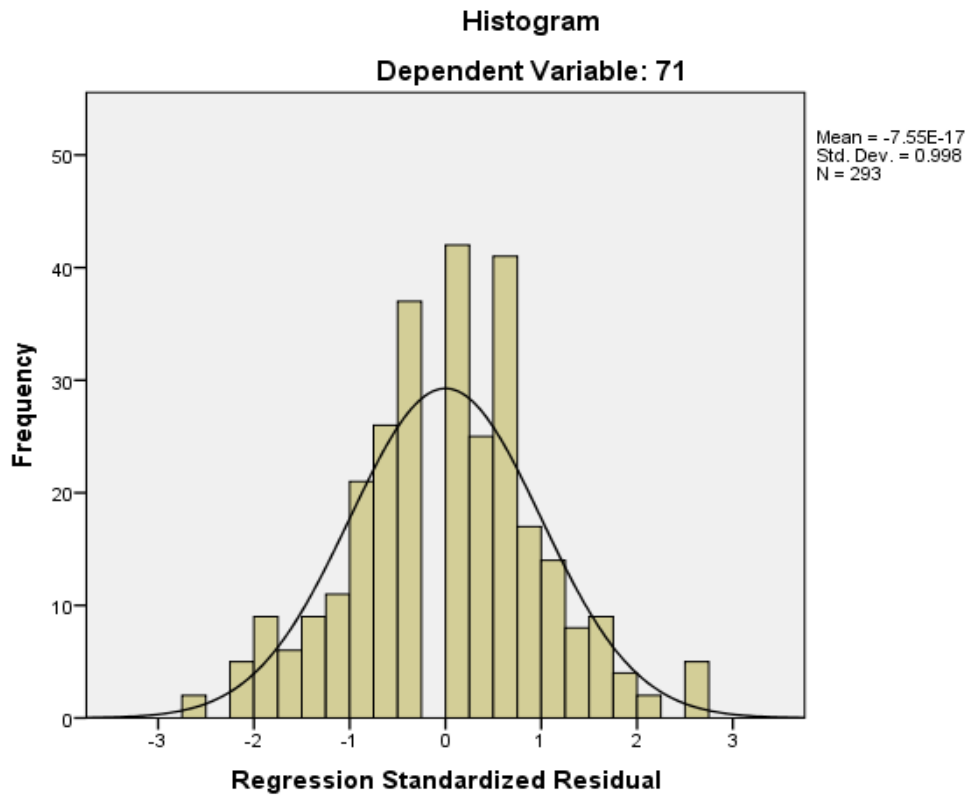Mean = -7.55E-17
Std. Dev. = 0.998
N = 293

Figure 3.7 The extent of teachers' use of OER and school management support
Figure 3.7 shows that there was a normal distribution between the factors, as shown in the skewness with the highest concentration in the middle. The distribution was plotted in a scatterplot as shown in Figure 3.8

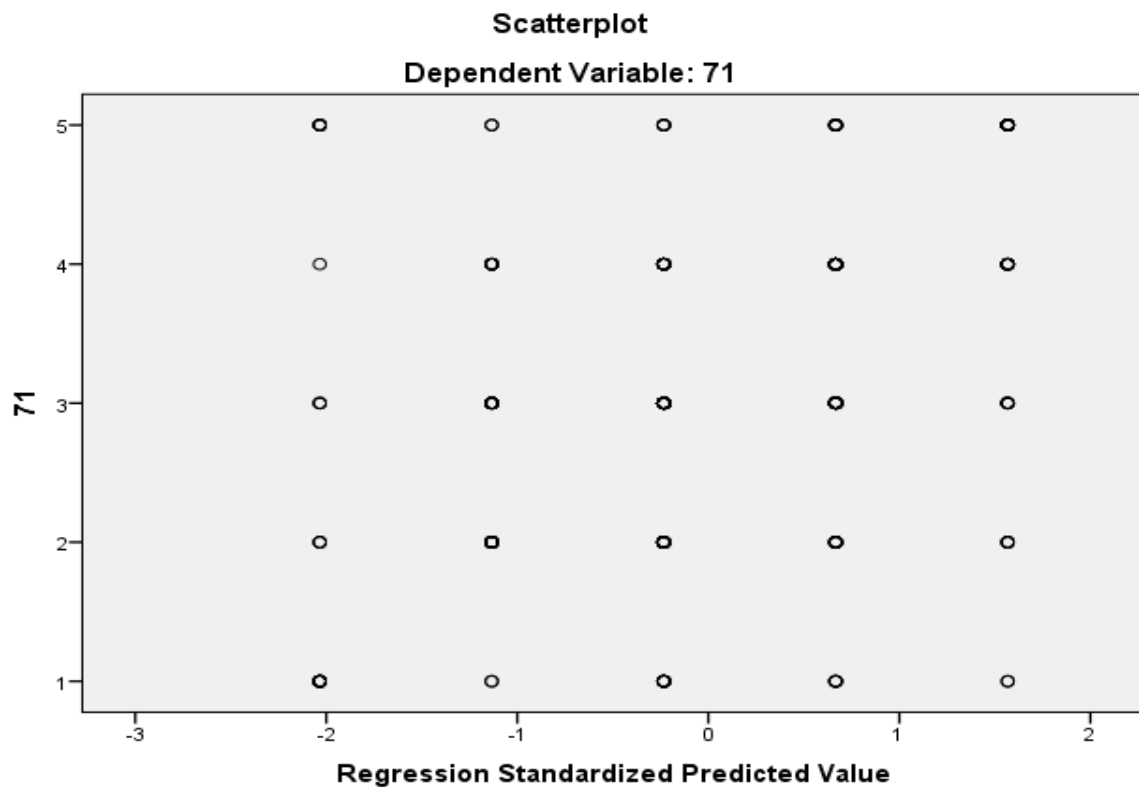## Scatterplot

Dependent Variable: 71

Figure 3.8 Scatterplot on the extent of teachers' use of OERs

3.4.2 The extent of teachers use of OERs, work experience and education level

The test conducted involved research fields and academic degree as independent variables which were tested against (73) the extent of teachers' use of OERs as a dependent variable to describe their means and standard deviations. The findings were as presented in Table 3.17

Table 3.17 Mean and Standard Deviation

	Mean	Std. Deviation	N
73	3.56	.994	293
Work experience	1.317	.5474	293
Education level	2.57	.561	293

The results showed that the standard deviation for (73) the extent of teachers' use of OERs at 0.99, professional experience at 0.54 and education level at 0.56 were all closer to the true value as they were less than ±2 deceive. These results also showed that the data was clustered around the mean and therefore had a good standard deviation as its value was less than ±2.0. The mean for all variables ranged from 1.31 to 3.56, giving a difference of 2.25. The results also showed the correlations between (73) the extent of teachers' use of OERs and the independent variables, namely professional experience and educational level. The results are shown in Table 3.18

Table 3.18 Correlations

		73	Work experience	Education level
Pearson Correlation	73	1.000	.021	.244
	Work experience	.021	1.000	.171
	Education level	.244	.171	1.000
Sig. (1-tailed)	73	.	.363	.000
	Work experience	.363	.	.002
	Education level	.000	.002	.

The results showed that there was a positive relationship between (73) the extent of teachers' use of OERs (1.00), professional experience (0.02) and education level, the value of which was 0.24, as their values are larger were as 0. Based on the results of the model. The summary in Table 3.19 was used to indicate the strength of the relationship between the model and the dependent variable.

Table 3.19 Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.244	.060	.053	.967

a. Predictors: (Constant), education level, work experience
b. Dependent Variable: 73

The findings in Table 3.19 show that R square is 0.6 which means 6% of the variation in the output variable is explained by the input variable. Thus only 6% of the observed variation in the target variable is explained by the regression model. In making comparison of variations between the sample means and variation within each sample, ANOVA test was conducted and the findings were as presented in Table 3.20

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.230	2	8.615	9.216	.000
	Residual	271.091	290	.935		
	Total	288.321	292			

a. Dependent Variable: 73
b. Predictors: (Constant), education level, work experience

	Unstandardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Sig.	Lower Bound	Upper Bound
Work experience	-.039	.105	.708	-.246	.167
Education level	.438	.102	.000	.236	.639

a. Dependent Variable: 73

A one-way ANOVA was conducted to compare the effect of work experience and education level on (73) the extent of teachers use of OERs. The findings revealed that the differences between the extent of teachers use of OERs (0.00), education level (0.00) were statistically significant, however work experience (0.70) was statistically insignificant. Basing on these findings, the chart was plotted as presented in Figure 3.9
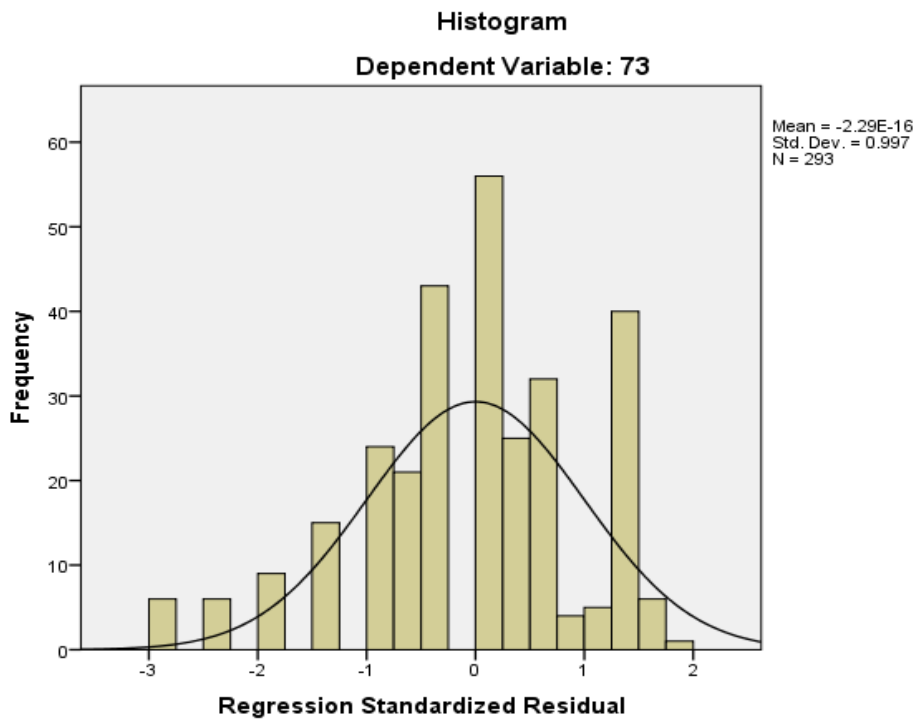

Figure 3.9 The extent of teachers use of OERs, work experience and education level

Figure 3.9 indicates that there was normal distribution among the factors as shown in the skewness with the highest concentration in the middle but slightly negatively skewed. The distribution was plotted in a scatter plot as shown in Figure 3.10
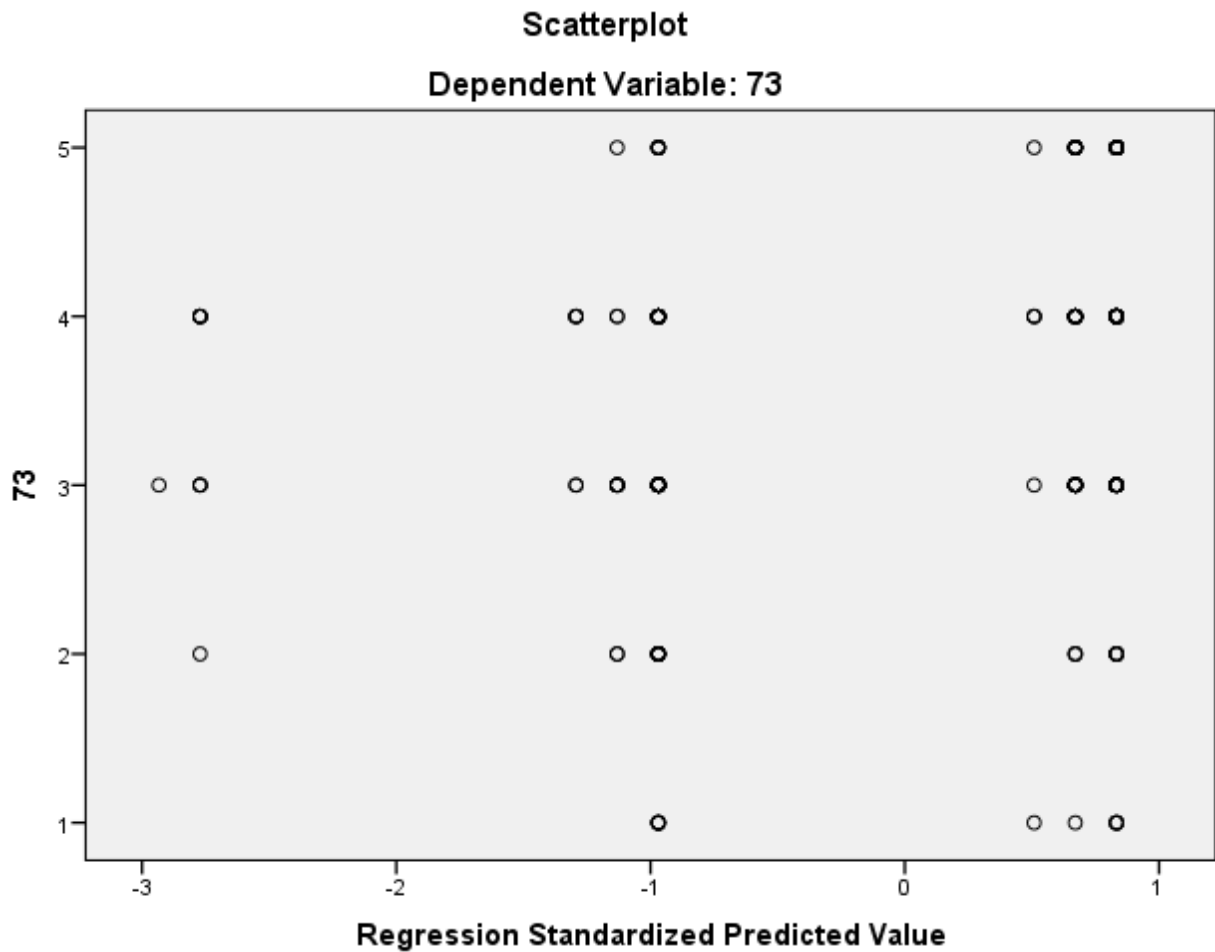
Figure 3.10 Scatterplot on the extent of teachers' use of OERs

3.4.3 The extent of teachers' use of OERs, Age and Gender

The test conducted involved age and gender as independent variables which were tested against (76) the extent of teachers' use of OERs as a dependent variable to describe their means and standard deviations. The findings were as presented in Table 3. 21

Table 3.21 Mean and Standard Deviation

	Mean	Std. Deviation	N
76	3.88	.965	293
Age	37.84	6.992	293
Gender	1.57	.495	293

The results showed that the standard deviation for (76) the extent of teachers' use of OERs was 0.96, for age was 6.99, and for gender was 0.49. With the exception of age, the standard deviations of the remaining factors were all closer to the true value, being less than ±2. These results also showed that the data was clustered around the mean and therefore had a good standard deviation as its value was less than ±2.0. The mean for all variables ranged from 1.57 to 37.84, giving a difference of 36.27, suggesting high variation between factors. The results also showed the correlations between (76) the extent of teachers' use of OERs and the independent variables of age and gender. The results are shown in Table 3.22

Table 3.22 Correlations

		76	Age	gender
Pearson Correlation	76	1.000	-.118	-.039
	Age	-.118	1.000	.081
	Gender	-.039	.081	1.000
Sig. (1-tailed)	76	.	.021	.251
	Age	.021	.	.083
	Gender	.251	.083	.

The findings indicated that there were negative relationships between (76) the extent of teachers use of OERs (1.00), age (-0.11) and gender whose value was -0.03 since their values were less than 0.

Basing on these findings the model summary in Table 3.23 was used to report the strength of the relationship between the model and the dependent variable.

Table 3.23 Model Summary

Model	R	R Square	Adjusted R Square	RStd. Error of the Estimate
1	.122a	.015	.008	.961

a. Predictors: (Constant), gender, age
b. Dependent Variable: 76

The results in Table 3.3.3 show that R-squared is 0.01, which means that 1% of the variation in the output variable is explained by the input variable. Thus, only 1% of the observed variation in the target variable is explained by the regression model. An ANOVA test was performed to compare the variation between sample means and the variation within each sample. The results are shown in Table 3.24

Table 3.24 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.062	2	2.031	2.198	.113
	Residual	267.993	290	.924		
	Total	272.055	292			

a. Dependent Variable: 76
b. Predictors: (Constant), gender, age

Model		Unstandardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Sig.	Lower Bound	Upper Bound
1	(Constant)	4.582	.346	.000	3.901	5.263
	Age	-.016	.008	.048	-.032	.000
	Gender	-.058	.114	.608	-.283	.166

a. Dependent Variable: 76

A one way ANOVA was conducted to compare the effect of age and gender on (76) the extent of teachers' use of OERs. The findings revealed that the differences between extrinsic research motivation (0.00), age (0.04) and gender (0.06) were statistically insignificant. Basing on these findings, the chart was plotted as presented in Figure 3.11

Histogram

Dependent Variable: 76

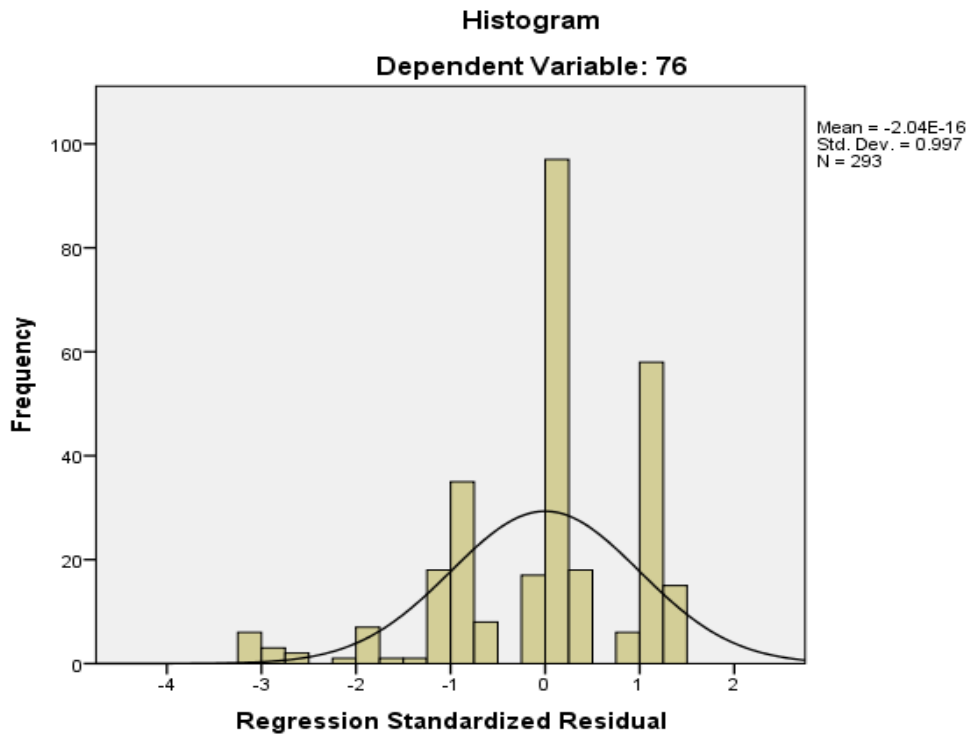Mean = -2.04E-16
Std. Dev. = 0.997
N = 293

Figure 3.11 The extent of teachers' use of OERs, age and gender

Figure 3.11 indicates that there was normal distribution among the factors as shown in the skewness with the highest concentration in the middle. The distribution was plotted in a scatterplot as shown in Figure 3.12

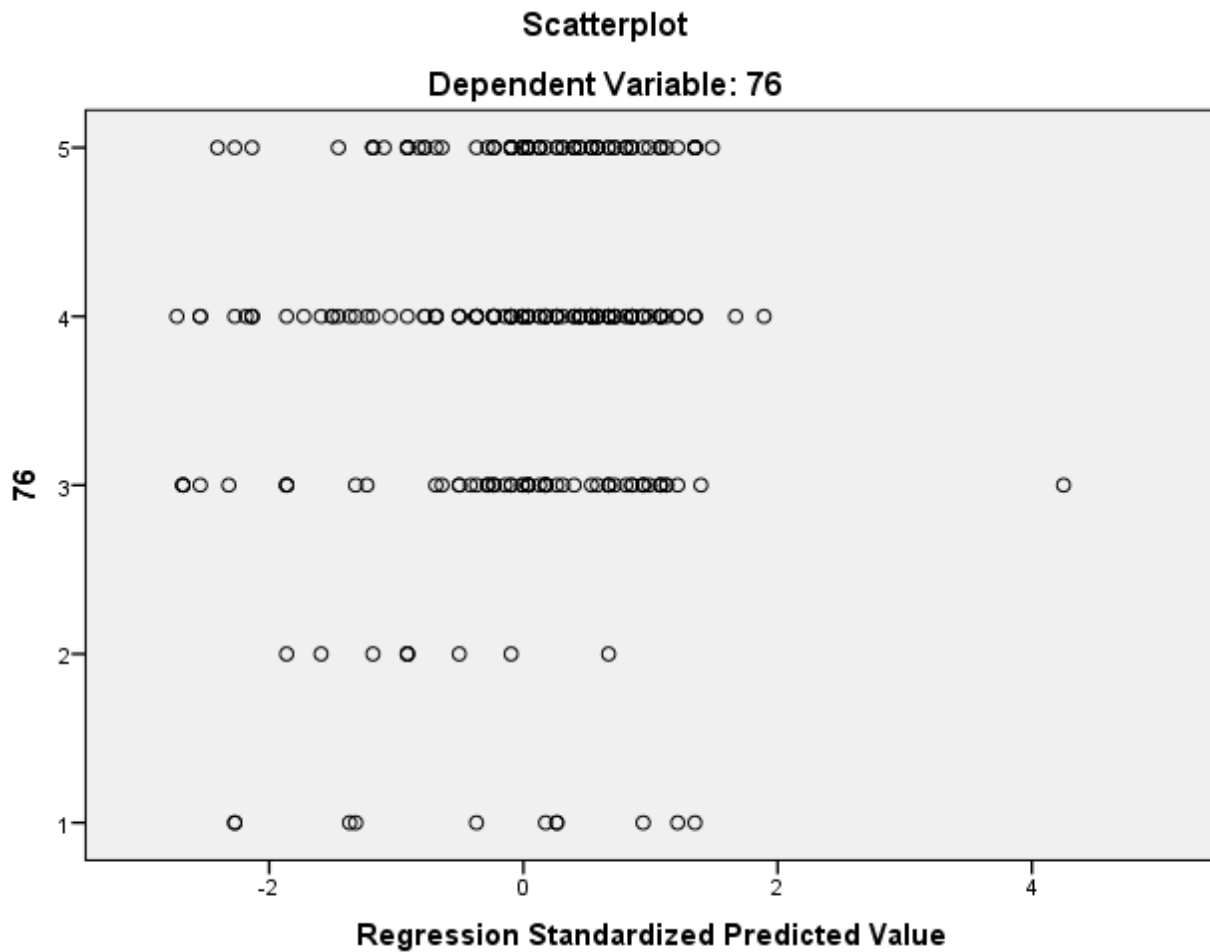Figure 3.10 Scatterplot on the extent of teachers' use of OERs

Figure 3.12 Scatterplot on the extent of teachers' use of OERs

3.5 Discussion

The results of the current study showed that OERs were underused to support English teaching and learning in secondary schools in Tanzania. According to the results, only 9% of respondents used the resources despite inadequate teaching and learning resources. However, awareness of OERs was also low, with only 35% of respondents appearing to have this awareness. Likewise, the level of access to the resources (23%) was lower than the level of awareness, meaning that some respondents were aware but did not have access to the resources to use. The overall picture behind these differences in the level of awareness, access and use of OERs suggests that inadequate information about the availability and importance of using OERs in supporting teaching and learning is the greatest barrier for post-secondary English teacher's schools in the study area.

In view of these findings, targeted measures need to be taken to ensure that teachers in Tanzania are made aware of the available OERs and are well informed about their accessibility and use to support their teaching and learning processes in the classroom. The ability to disseminate appropriate information is believed to play an important role in enabling teachers to decide which resources to use with justification. This can be a motivating factor to increase awareness, access and use of OERs to support English language teaching and learning in secondary school classrooms. The observations from the current study are consistent with the Diffusion of Innovation Theory (DIT), in which Rogers (2003) describes the innovation decision process as an information search and information processing activity in which an individual is motivated to overcome uncertainty about the advantages and disadvantages of an innovation reduce innovation. The observed slowness and lack of responsiveness in the use of digital technology to support English language teaching and learning in the classroom is largely the result of an information gap that should be addressed immediately and appropriately to improve the situation. The research shows that there is a general awareness of OERs among secondary school English teachers in Tanzania. However, access to and use of OERs in English teaching in secondary schools is still low due to limited access to technology and lack of digital skills. The results also suggest that professional experience, educational level, age and gender have a significant influence on the extent of OER use by teachers. These results suggest that teachers with higher levels of education and more professional experience are more

likely to use OER in their teaching. In addition, younger teachers use OER more often than their older and male colleagues. The results of this study have important implications for the use of OERs in secondary schools. The results suggest that the government and other stakeholders should invest in improving access to technology and improving teachers' digital skills to promote the use of OERs in English teaching. It is also important to train teachers on how to effectively use OERs in their classrooms. Finally, it is important to support teachers to ensure they have the necessary resources and tools to use OER in their classroom.

4. CONCLUSION

The current study comes to the relatively low and ineffective conclusion that teachers' awareness is at this level. Given the abundance of information available on social media, it would be very nice to test the popularity of similar respondents there. Through the dissemination of pertinent information, targeted actions must be taken to increase awareness among English teachers. The English department, education stakeholders, and the school leadership team can coordinate this. Since awareness affects both access to and use of OERs, it is essential to understand OERs.

It is evident from observations about how much access and use English teachers have of OERs when teaching the language that Tanzanian English teachers, especially those in Mvomero, do not utilize all of the resources at their disposal. In light of complaints regarding the deficiency of teaching and learning resources in the subject area, this affects student performance. Similarly, by improving their capacity to locate, recognize, and effectively use the resources at hand, educators can help allay concerns about utilizing open educational resources. The challenge facing educational stakeholders is that fewer teachers are using open educational resources (OERs) than there were a few years ago. As a result, educators need to consider creative ways to address this issue.

As students learn through insufficient activities, challenges, exposure, and practice, their proficiency and performance in the language are impacted by the low level of awareness, access, and use of OERs in English language instruction. Naturally, in Tanzanian secondary schools, English is one of the most difficult subjects, so this is a realistic observation. Seldom can one find English in the streets and homes where the students reside. Teachers are therefore unable to meet every student's need in the classroom if they do not assign tasks for independent learning. OERs are typically made to support the teaching and learning process under supervision and facilitate the successful and easy work of teachers by taking communicative needs and language skills needs into consideration.

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