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## **EXAMINING FACTORS AFFECTING TAX AUDIT EFFECTIVENESS**

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### **ABSTRACT**

The purpose of this study was to examining factors affecting tax audit effectiveness in Gede'o Zone. Seven tax audit effectiveness determinants was examined audit communication, organizational independence, top management support, audit attributes, tax legislation system, tax audit quality and information system utilization. Explanatory research design was used to attain the study's goal, and both qualitative and quantitative research approaches were used. The study was use a survey of questionnaire analysis and interviews as source of data. Census method was used to take tax office employee of the study. Based census method 82 tax offices employees respondents were taken. Binary Logistic Regression technique was employed to analyse the responses. Data was analysed by using SPSS 20.0 version software and correlation and regression analysis was applied to achieve the study objectives. Both descriptive and inferential statistics were used to examine the acquired data. The study was frequency, percentage, mean, and standard deviation for descriptive statistics. As a result, organizational independence, top management support, and tax audit quality were statistically significant factors impacting on tax audit effectiveness. Audit communication, audit attributes, tax legislation system, and information system utilization, were elements that had a negative impact on tax audit effectiveness. Finally the study recommended, tax auditor independence of thought and appearance play a significant influence in tax audit effectiveness. And tax audit independence must be maintained in order for them to carry out their duties objectively and without intervention or pressure from outside sources. Senior management should also support tax auditors by assigning enough funding, fostering a positive working atmosphere, and adopting tax auditor suggestions.

**Keywords:** - Tax audit, effectiveness, Factors Affecting, Gede'o Zone, Ethiopia

### **1. INTRODUCTION**

Tax is a compulsory payment by people to the government, which is an important element in managing national income in both developed and developing countries. Taxation provides governments with funds needed for development, poverty alleviation, and public service delivery (Parameswaran, 2005). In the past decade, Ethiopia has made progress in increasing domestic tax revenue collection, with tax collection increasing from Birr 12.4 billion in 2005 to Birr 165.3 billion in 2015. A tax audit examines whether a taxpayer has correctly estimated and declared their tax liability, and whether they have complied with other tax laws. Effective tax auditing can have a

significant impact on tax administration and revenue collection, particularly with the help of information technology. Ineffective tax administration may promote unfair competition among taxpayers and be unable to address the problem of tax avoidance and evasion (Kibret, 2016). The Tax Audit Policy and Strategy in Ethiopia aims to support the delivery of the voluntary compliance concept through a risk-based audit program. Tax audit effectiveness has two types of effects: a direct effect on additional revenue collected, and an indirect deterrence effect on potential tax evaders. Strengthening the audit system in Ethiopia plays an important role in providing reliable data for effective economic management and administration. In summary, the background highlights the importance of taxation and tax audits for government revenue generation and economic management, as well as the challenges faced in ensuring effective tax auditing in the Ethiopian context.

Taxation is an important element in managing national income and funding government activities in both developed and developing countries. Ethiopia has made progress in increasing tax revenue collection over the past decade. Tax audits are crucial for ensuring taxpayer compliance and accurate tax collection. Effective tax auditing can significantly impact tax administration and revenue collection (Arens, Elder, & Beasley, 2012).

### **Statement of the Problem**

A tax audit is an activity to determine a taxpayer's correct tax liabilities and verify compliance with tax laws (Arens, Elder, & Beasley, 2012). Domestic resource mobilization through tax revenue is critically important, particularly in developing countries like Ethiopia. However, the domestic tax bases in most African countries are undermined by widespread tax avoidance and evasion. In Ethiopia, it is difficult to obtain reliable documentary evidence, and tax audit productivity is poor, with an ineffective tax audit planning in the previous 5 years in the SNNPR Gede'o Zone revenue office. The audit coverage from the yearly plan was low, ranging from 50.8% to 76.8%, indicating flaws in audit planning and the effectiveness of tax audits. There is a lack of empirical studies on examining factors affecting tax audit effectiveness in the Gede'o Zone, as most research has been focused on other regions like Amhara. Weaknesses in revenue administration and ineffective audit programs can lead to inadequate tax collections and an unjust tax system. Strengthening the audit system is important for providing reliable data for effective economic management in Ethiopia. In summary, the statement of the problem highlights the challenges of tax audit effectiveness in the Gede'o Zone, the lack of empirical research on the topic, and the importance of addressing these issues for improving domestic resource mobilization and economic management in Ethiopia.

## **2. LITERATURE REVIEW**

### **Theoretical Literature Review**

#### **Meaning and concepts of tax**

Tax is a compulsory payment by people to the government for which there is no direct return. It refers as a compulsory monetary contribution imposed by the government on income, property, sales, and other forms of economic activity. The importance of taxation as a primary source of domestic revenue for the Ethiopian government to finance public expenditures and support economic development. The role of the Ethiopian Revenue and Customs Authority in administering the tax system and ensuring tax compliance (Parameswaran, 2005).

#### **Audit and Tax Audit**

Audit is the examination of books of accounts and physical inventory to ensure accurate financial reporting. Tax audit examines a taxpayer's correct tax liabilities and compliance with tax laws. Objectives of tax audits Tax audit is conducted to achieve the following objectives: -Ensure proper maintenance and correctness of books of accounts and certification of the same by a tax auditor. Reporting observations/discrepancies noted by tax auditor after a methodical examination of the books of account. To report prescribed information such as tax depreciation, compliance of various provisions of income tax law, etc. The audit function plays a crucial role in ensuring reliable data for economic management. Tax audit effectiveness can be measured through direct revenue impact and indirect deterrence effects. Proper audit planning is essential for the effectiveness of the tax audit process. Tax audits should be conducted in accordance with applicable auditing standards (Arens, Elder, & Beasley, 2012).

Defines audit as "a systematic and independent examination of data, statements, records, operations, and performances of an organization for a stated purpose." the importance of audits in verifying the accuracy and reliability of financial information, ensuring compliance with laws and regulations, and evaluating the effectiveness of internal controls.

Tax audits, which it defines as a process of examining a taxpayer's books, records, and other relevant information to verify the accuracy and completeness of the tax return filed. Tax audits are conducted by the tax authority to ensure that taxpayers are complying with tax laws and regulations. The primary objectives of tax audits include detecting tax evasion, ensuring accurate reporting of taxable income and deductions, and promoting voluntary tax compliance.

Tax Audit Effectiveness defines as the ability of tax audits to achieve their intended objectives. Effective tax audits are those that lead to the detection of tax evasion, accurate reporting of tax liabilities, and improved voluntary compliance by taxpayers (Whittington & Pany, 2016)..

## **Empirical Studies and Hypothesis Development**

### **Audit Communication:**

Effective communication between auditors and taxpayers can improve cooperation and information sharing, leading to more successful audits (Beyene, Deresse, & Mathewos, 2019). Clear and transparent communication helps build trust and facilitate the exchange of relevant information during the audit process (Whittington & Pany, 2016).

### **Audit Independence:**

The independence and objectivity of tax auditors is crucial for ensuring the credibility and effectiveness of the audit process. Auditor independence helps prevent conflicts of interest and ensures that audit decisions are not unduly influenced by external factors (Ayalewu, 2014).

### **Top Management Support:**

Strong leadership and commitment from senior tax administration officials can provide the necessary resources and organizational support for effective audits (Ayalewu, 2014). Top management support is important for prioritizing audit activities, allocating adequate funding, and fostering a culture of compliance within the tax authority (Beyene, Deresse, & Mathewos, 2019).

### **Auditee Attributes:**

Characteristics of the taxpayers being audited, such as their size, complexity, and compliance history, can impact audit outcomes. Larger and more complex taxpayers may require more resources and specialized expertise to audit effectively (Abebaw, 2020)

### Tax Legislation System:

The design and clarity of tax laws and regulations can influence the ability of auditors to effectively enforce compliance. Ambiguities or loopholes in the tax code can hinder the audit process and provide opportunities for taxpayers to engage in evasion (Beyene, Deresse, & Mathewos, 2019).

### Tax Audit Quality:

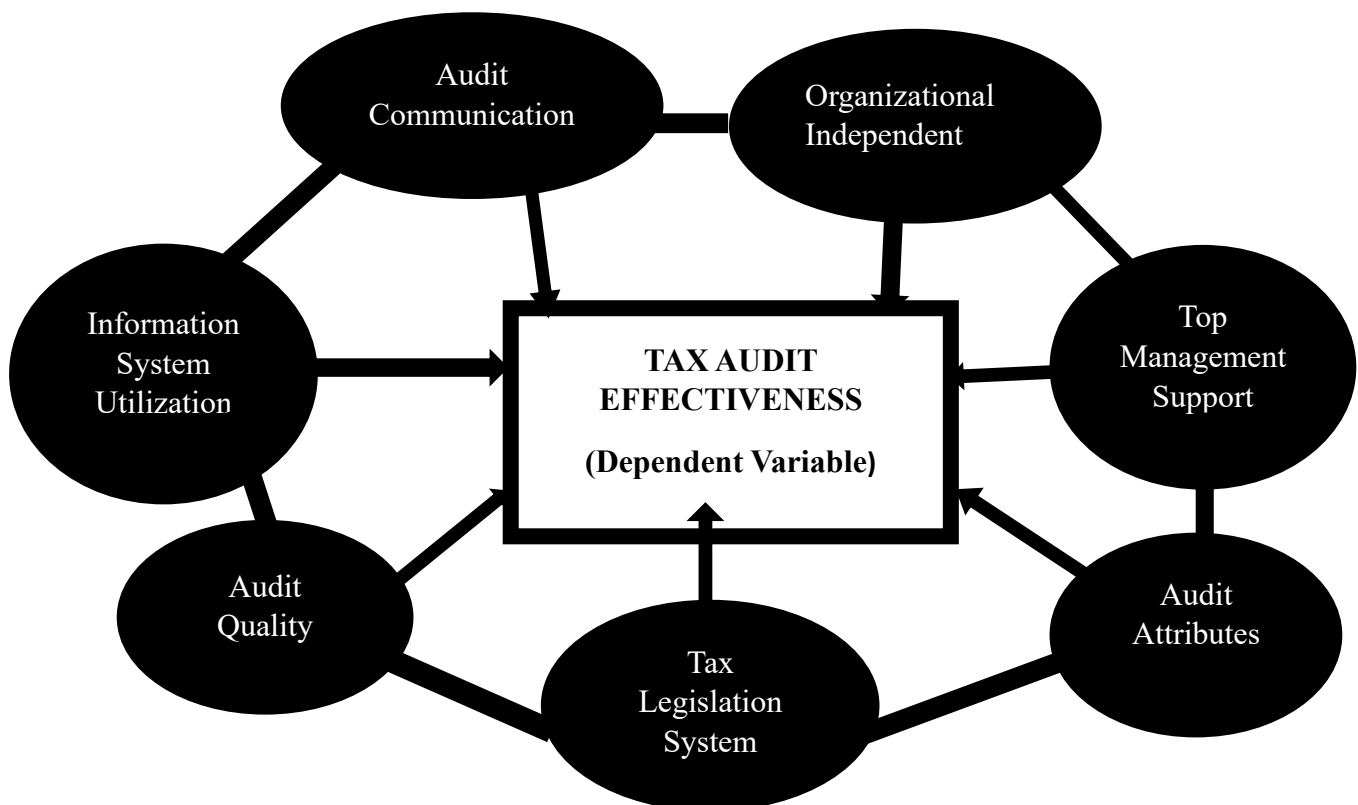
The technical competence, training, and experience of tax auditors are important determinants of audit effectiveness. Well-trained and experienced auditors are better equipped to detect noncompliance and gather the necessary evidence to support audit findings (Ayalew, 2014).

### Information System Utilization:

The use of advanced information systems and data analytics can enhance the efficiency and accuracy of tax audits. Effective utilization of information systems allows auditors to quickly access relevant data and identify high-risk taxpayers for targeted audits (Whittington & Pany, 2016).

The empirical literature review provides a comprehensive overview of the key factors that have been found to influence tax audit effectiveness in various contexts. This helps inform the conceptual framework and hypothesis development for the current study.

**Figure 2.1 Conceptual frameworks of tax audit effectiveness and its independent variable**



Source: Researchers own design, 2022

### 3. MATERIALS AND METHODS

The study was conducted in the Gede'o Zone, one of the zones in the Southern Nations, Nationalities, and Peoples' Region (SNNPR) of Ethiopia. The study used an explanatory research

design to examine the factors affecting tax audit effectiveness. Both qualitative and quantitative research approaches were used in the study. The target population for the study was the tax office employees in the Gede'o Zone. The study used a census method to include all 82 tax office employees in the Gede'o Zone. Both primary and secondary data were used in the study. Primary data was collected through a survey questionnaire and interviews. Secondary data was obtained from relevant documents and reports. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used. Inferential statistics, including correlation and regression analysis, were applied. Binary Logistic Regression technique was employed to analyse the responses. SPSS 20.0 software was used for the data analysis. The dependent variable (tax audit effectiveness) and independent variables were measured using a five-point Likert scale questionnaire. In summary, the methodology section outlines the research design, data collection, and analysis techniques used to achieve the study's objectives.

### **Method of Data Analysis**

The study employed both descriptive and inferential statistics to analyse the data: Descriptive statistics: -frequency, percentage, mean and standard deviation. These descriptive statistics were used to summarize and describe the characteristics of the respondents and the variables. Inferential statistics: - correlation analysis, regression analysis. The study used binary Logistic Regression technique to analyse the responses and SPSS 20.0 software for the data analysis

The rationale for using these analytical methods is: - Descriptive statistics provide an overview of the respondent characteristics and variable distributions. Correlation analysis examines the relationships between the independent and dependent variables. Binary Logistic Regression is appropriate for the study's objective of examining the factors affecting a binary dependent variable (tax audit effectiveness). SPSS software is a widely used statistical tool that allows for efficient data analysis and interpretation.

In summary, the study utilized a combination of descriptive and inferential statistics, including correlation, regression, and SPSS software, to analyse the data and achieve the research objectives.

### **Data Adequacy Test**

#### **Normality Test**

The study performed a normality test using the Skewness statistic to check if the data follows a normal distribution. The results showed that the Skewness values for the variables were within the acceptable range of -1 to +1, indicating the data was normally distributed.

#### **Reliability and Validity Statistics**

The study assessed the reliability of the data using the Cronbach's Alpha coefficient. The calculated Cronbach's Alpha values for the variables ranged from 0.716 to 0.912, indicating good internal consistency and reliability of the data. This suggests the data collection instruments used in the study were reliable and consistent in measuring the intended constructs.

#### **Multicollinearity test**

The study conducted a multicollinearity test using the Variance Inflation Factor (VIF) and Tolerance values. The VIF values were all less than 10, and the Tolerance values were greater than 0.1, indicating no serious multicollinearity issues among the independent variables. This implies the independent variables were not highly correlated with each other, which is a necessary assumption for the regression analysis.

### Equation model

Ordinal logistic regression is a statistical analysis method that can be used to model the relationship between an ordinal response variable and one or more explanatory variables.

An ordinal logistic regression model will be utilized to discover determinants of tax audit effectiveness in Gede'o Zone, based on the ordered ranking of information relevant to the dependent variable (tax audit effectiveness). Therefore, the formula for the ordinal logistic regression model is: -

$$\ln((P_i(\text{event}))/ (1-P_i(\text{event}))) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + u_i \quad (\text{Gujarati, 2009})$$

Where,  $P_i$  is probability of outcomes,

$\ln$ : log

Finally, taking the natural log of equation (8) we obtain: -

$$Li = \ln [P_i / (1 - P_i)] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + U_i \dots \dots \dots (5)$$

Based this: -

$$TAE = Li = \ln [P_i / (1 - P_i)] = \beta_0 + \beta_1 (AC) + \beta_2 (AI) + \beta_3 (TMS) + \beta_4 (AA) + \beta_5 (TLS) + \beta_6 (TAQ) + \beta_7 (ISU) + U_i \dots \dots (5)$$

Where: -

TAE = Tax Audit Effectiveness

AC= Audit Communication

OI= Audit independence

MS =Top Management Support

AA = Auditee Attributes

TL= Tax Legislation system

AQ= Audit Quality

ISU= Information System utilization

$\beta_0$ :- is an intercept

$\beta_1, \beta_2, \dots, \beta_n$  are slopes of the equation in the model

$Li$  = is log of the odds ratio, which is linear in  $X_i$

$X_i$  = is parameter

$U_i$  = is the disturbance term of the logit model

The study employed Binary Logistic Regression as the main analytical technique to examine the factors affecting tax audit effectiveness.

The logistic regression technique was chosen because the dependent variable (tax audit effectiveness) is binary, taking the values of 0 (not effective) and 1 (effective).

### Correlations analysis

Correlations									
	TAE	AC	AI	TMS	AA	TLS	TAQ	ISU	
Spearman's rho	TAE	Correlation	1.000						

		Coefficient								
		Sig. (2-tailed)	.							
		N	79							
	AC	Correlation Coefficient	.527*	1.000						
		Sig. (2-tailed)	.000	.						
		N	79	79						
	AI	Correlation Coefficient	.624*	.811*	1.000					
		Sig. (2-tailed)	.000	.000	.					
		N	79	79	79					
	TMS	Correlation Coefficient	.583*	.667*	.666*	1.000				
		Sig. (2-tailed)	.000	.000	.000	.				
		N	79	79	79	79				
	AA	Correlation Coefficient	.583*	.896*	.853*	.692*	1.000			
		Sig. (2-tailed)	.000	.000	.000	.000	.			
		N	79	79	79	79	79			
	TLS	Correlation Coefficient	.518*	.647*	.673*	.610*	.664*	1.000		
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.		
		N	79	79	79	79	79			
	TAQ	Correlation Coefficient	.301*	.707*	.701*	.517*	.677*	.544*	1.000	
		Sig. (2-tailed)	.007	.000	.000	.000	.000	.000	.	
		N	79	79	79	79	79	79	79	
	ISU	Correlation Coefficient	.339*	.735*	.644*	.534*	.693*	.571*	.681*	1.000



		Sig. (2-tailed)	.002	.000	.000	.000	.000	.000	.000	.
		N	79	79	79	79	79	79	79	79

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Source: -SPSS output for correlation analysis

Spearman's rank correlation coefficient is a nonparametric (distribution-free) rank statistic proposed by Charles Spearman as a measure of the strength of an association between two variables. Where: -TAE: -Tax Audit Effectiveness, AC: - Audit Communication, AI: - Audit independence, TMS: - Top Management Support, AA: -Audit Attributes, TLS: - Tax Legislation System, TAQ: - Tax Audit Quality, ISU: - Information System Utilization.

The result shows that there exists a positive correlation between the tax audit effectiveness and audit communication, with a correlation coefficient of 0.527. The correlation coefficient between tax audit effectiveness and audit independence is 0.624. However, correlation research revealed a perfect positive association between top management support and tax audit effectiveness, with a coefficient of 0.583. The correlation coefficient of 0.583 between audit attributes and tax audit effectiveness. The results of the correlation analysis, on the other hand, revealed a complete positive association between tax audit effectiveness and the tax legislation system, with a coefficient of 0.518. The coefficient of correlation between the tax audits effectiveness and the tax audits quality is 0.301. The correlation relationship between tax audit effectiveness and information system utilization is 0.339.

The main findings from the correlation analysis are: - Organizational independence, top management support, and tax audit quality had the strongest positive correlations with tax audit effectiveness. Auditee attributes, tax legislation system, and information system utilization had negative correlations with tax audit effectiveness. The correlation analysis provided preliminary insights into the relationships between the variables before conducting the regression analysis.

Overall, the correlation analysis helped identify the direction and strength of the associations between the independent variables and the dependent variable of tax audit effectiveness.

### Ordinal Logistic Regression

As a predictive analysis, ordinal regression describes data and explains the relationship between one dependent variable and two or more independent variables.

#### Interpretations of Ordinal logistic regression

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	402.406			
Final	339.478	62.927	8	.000

Link function: Logit.

#### Interpretation of Model fitting information

Ho; Model is not fit

H1; Model is fit

In the above given table we get the sig .000 which is less than 0.05, As p-value is less than the standard value (0.05), reject Ho and it is concluded that model is valid.

Goodness-of-Fit			
	Chi-Square	Df	Sig.
Pearson	2176.035	1064	.000
Deviance	336.706	1064	1.000
Link function: Logit.			

### Interpretation of Goodness of fit

In both the cases P-values are less than standard value (0.05), reject  $H_0$  and it is concluded that fit is not good. In both the cases P-values are greater than standard value (0.05). It concludes the model data was fit. Based on this model was fitted to data.

Pseudo R-Square	
Cox and Snell	.558
Nagelkerke	.561
McFadden	.155
Link function: Logit.	

The Pseudo R-Square provides pseudo-R<sup>2</sup> (Cox and Snell and Nagelkerke) values. The R<sup>2</sup> values tell us approximately how much variation in the outcome is explained by the model (like in linear regression analysis). Or the co-efficient of determination (R<sup>2</sup>) value gives an indication of how much variation in Y is explained by the model.

From the table above we can conclude that between 55.8 % (Cox & Snell) and 56.1 % (Nagelkerke) of the variation in survival can be explained by the model.

Parameter Estimates								
		Estimate	Std. Error	Wald	Df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	[TAE = 1.86]	3.981	2.023	3.871	1	.049	.015	7.947
	[TAE = 2.14]	5.916	1.860	10.120	1	.001	2.271	9.560
	[TAE = 2.29]	6.758	1.854	13.293	1	.000	3.125	10.392
	[TAE = 2.43]	7.305	1.858	15.454	1	.000	3.663	10.948
	[TAE = 2.57]	8.175	1.877	18.972	1	.000	4.497	11.854
	[TAE = 2.71]	8.885	1.902	21.826	1	.000	5.157	12.612
	[TAE = 2.86]	9.370	1.924	23.720	1	.000	5.599	13.141
	[TAE = 3.14]	9.711	1.942	25.012	1	.000	5.905	13.516
	[TAE = 3.29]	10.197	1.970	26.802	1	.000	6.337	14.058
	[TAE = 3.43]	11.563	2.057	31.600	1	.000	7.531	15.594

	[TAE = 3.57]	12.094	2.087	33.576	1	.000	8.003	16.184
	[TAE = 3.71]	12.548	2.113	35.260	1	.000	8.406	16.689
	[TAE = 3.86]	13.512	2.175	38.595	1	.000	9.249	17.775
	[TAE = 4.00]	14.416	2.243	41.306	1	.000	10.020	18.813
	[TAE = 4.14]	15.122	2.302	43.158	1	.000	10.611	19.634
	[TAE = 4.29]	16.489	2.461	44.904	1	.000	11.666	21.312
Location	AC	.593	.773	.588	1	.443	-.923	2.109
	AI	2.129	.741	8.257	1	.004	.677	3.581
	TMS	1.436	.569	6.381	1	.012	.322	2.550
	AA	.591	1.005	.345	1	.557	-1.379	2.560
	TLS	.774	.523	2.193	1	.139	-.250	1.799
	TAQ	-1.712	.661	6.711	1	.010	-3.007	-.417
	ISU	-.636	.671	.898	1	.343	-1.952	.680
	[sex=1]	-.273	.450	.370	1	.543	-1.154	.608
	[sex=2]	0 <sup>a</sup>	.	.	0	.	.	.
Link function: Logit.								
a. This parameter is set to zero because it is redundant.								

According to the table above show that, Audit independence, top management support, and tax audit quality are independent variables with significant regression coefficients, while audit communication, audit attributes, tax legislation system, and information system utilization have insignificant regression coefficients.

Based on above result of table audit communication (AC), the result of ordinal logistic regression shows positive and statistically insignificant relationship with tax audit effectiveness with a p-value of .443. Thus, hypothesis one is rejected other variable remain constant.

Based on above result of table audit independence (AI), the result of ordinal logistic regression shows positive and statistical significant relationship with tax audit effectiveness with a p-value of .004. Thus, hypothesis one is accepted other variable remain constant.

The result of the ordinal logistic regression shows that there is a positive and statistically significant relationship between top management support and tax audit effectiveness with a p-value of .012. Therefore the hypothesis, there is significant relationship between top management support and tax audit effectiveness is accepted while other variable remain constant.

Based on above result of table audit attributes (AA), the result of ordinal logistic regression shows positive and statistical insignificant relationship with tax audit effectiveness with a p-value of .557. Thus, hypothesis one is rejected other variable remain constant.

The result of the ordinal logistic regression shows that there is a positive and statistical insignificant relationship between tax legislation system and tax audit effectiveness while other variable remain constant with a p-value of .139. Therefore the hypothesis is rejected.

The result of the ordinal logistic regression shows that there is a negative and statistically significant relationship between tax audit quality and tax audit effectiveness, while other variable

remain constant with p-value .010. Therefore the hypothesis, there is significant relationship between tax audit quality and tax audit effectiveness is accepted.

The result of the ordinal logistic regression shows that there is a positive and statistical insignificant relationship between information system utilization and tax audit effectiveness with a p-value of .343. Therefore the hypothesis is rejected while other variable remain constant.

As a result, the following is the model for predicting perceived tax audit effectiveness: -

$$TAE = -.273 + 2.129(AI) + 1.436(TMS) + -1.712(TAQ) + U_i$$

#### 4. CONCLUSION AND RECOMMENDATIONS

The study found the following regarding the factors affecting tax audit effectiveness in the Gede'o Zone: - Organizational independence, top management support, and tax audit quality had a positive and statistically significant effect on tax audit effectiveness. Audit communication, auditee attributes, tax legislation system, and information system utilization had a negative impact on tax audit effectiveness.

The main conclusions are:-

- Auditor independence is crucial for the integrity and credibility of the tax audit process.
- Top management support and commitment to tax audits is essential for enhancing their effectiveness.
- Improving the quality of tax audits, in terms of achieving the fundamental audit objectives, is important. Factors like weak audit communication, uncooperative auditee attributes, complex tax laws, and underutilization of information systems can hinder tax audit effectiveness.

Based on the findings, the study makes the following key recommendations: -

- Maintain tax auditor independence to allow them to carry out their duties objectively. Ensure top management provides strong support to tax auditors through adequate funding, fostering a positive work environment, and implementing audit recommendations.
- Improve the quality of tax audits by enhancing auditor expertise, audit planning, and adherence to professional standards. Address issues related to audit communication, auditee cooperation, tax legislation complexity, and effective utilization of information systems.

The recommendations aim to help the Gede'o Zone Revenue Office and the Ethiopian Revenue and Customs Authority enhance the effectiveness of their tax audit functions and improve domestic revenue mobilization.

In summary, the conclusion highlights the key factors affecting tax audit effectiveness, while the recommendations provide actionable steps to address the identified challenges.

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