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Tax Audit Effectiveness and Tax Compliance in Ethiopia: The Case of Ministry of Revenues

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ABSTRACT

The objective of the study is to analyze the determinants of tax audit effectiveness and tax compliance in Ethiopia. Quantitative research approach with explanatory research design was used in this study. Consequently, quantitative data were collected. The sample size used in this study was 550 tax auditors, and 1,067 taxpayers. Convenience sampling technique was used to access the right subjects to for the study. In this study, Partial Least Square Structural Equational Modeling (PLS-SEM) is used for data analysis. The study result has indicated that institutional related factors, tax auditor related factors, and taxpayers' related factors have a direct effect on tax audit effectiveness. Additionally, institutional related factors, taxpayers' related factors, and tax audit effectiveness have a direct effect on tax compliance. Furthermore, institutional related factors, taxpayers' related factors, and tax auditor related factors also have an indirect effect on tax compliance in Ministry of Revenues, Ethiopia. Based on these findings, it is recommended that policymakers and Ministry of Revenues need to strengthen institutional frameworks and taxpayers' knowledge, improve the training and resources available to tax auditors to enhance tax audit effectiveness as well as tax compliance. That is to say, targeted taxpayer education and engagement initiatives could foster greater tax compliance. Hence, integrating these strategies can reinforce the link between effective tax audits and taxpayer compliance, ensuring a more robust tax administration system.

KEY WORDS

Institutional related factors, tax auditors related factors, taxpayers' related factors, tax audit effectiveness, tax compliance

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Introduction

Tax compliance problem is a main challenge of tax revenue office in Ethiopia. Currently, Ethiopia has a serious challenge in raising public income to the required level in order to improve the nation's development activities. Ethiopia has experienced budget deficit as compared to domestic revenue for a long period of time. To solve this problem, the government has introduced different tax types to improve the public revenue even though prior evidence has shown that the role of tax revenue has remained very low. Tax revenue collection performance in Ethiopia by 2020/21 fiscal year was 64.6% (United Nations Children's Fund (UNICEF, 2021). This implies that there are tax compliance problem. Based on the current literature about factors in influencing tax audit effectiveness, it can be observed that there are mixed results on variables which express determinants of tax audit effectiveness, and level of tax compliance.

The tax audit effectiveness has received limited attention, particularly in developing countries like Ethiopia, where tax revenue is critical for government service delivery (Lubua, 2014). Owing to this, the government often plays a significantly larger role in service provision than the private sector, given the private sector's constrained contribution. By addressing these gaps, the study aims to shed light on the factors influencing tax audit effectiveness, providing insights that could enhance the fiscal capacity of developing economies. Prior research on tax collection in developing countries has concluded that the effectiveness of revenue authority is still very low and that there is a high non-tax compliance practice (Lubua, 2014). One explanation of this is that tax audits are ineffective, as argued by many previous studies, that they fail to increase tax compliance (Zulkifl et al., 2014).

Prior research highlights the importance of examining the factors contributing to tax audit effectiveness; however, this study expands the scope by analyzing the determinants of both tax audit effectiveness and tax compliance concurrently. This approach not only aims to assess the current effectiveness level of tax audits but also to examine the critical factors that enhance audit effectiveness. Additionally, it examines the relationship between tax audit effectiveness and taxpayer compliance. The insights from this study will thus contribute to a more comprehensive understanding of the factors influencing tax audit effectiveness and tax compliance, supporting informed policy and strategic decision-making in tax systems. Thematically, this study is focused on tax audit effectiveness and tax compliance related issues in Ethiopia, particularly the taxpayer offices of Addis Ababa, Dire Dawa, Adama, Jimma, Bahir Dar, Kombolcha, and Hawassa. The time horizon used in this study is cross sectional study. This research includes institutional related factors, tax auditor related factors, taxpayers' related factors, tax audit effectiveness, and tax compliance. In addition, concurrent triangulation research design with mixed research approach is applied in this study.

Literature Review and Hypothesis Development

Governments receive the money they need through taxes to invest in growth, alleviate poverty, and provide public services. It offers a remedy for aid dependency in developing nations and delivers the budgetary stability and sustainability required to foster progress. Many developing nations have achieved significant progress, but obstacles still exist due to inadequate capability, corruption, and the absence of a reciprocal relationship between taxes and public and social expenditures (World Bank, 2011).

Tax is a statutory charge, and individuals who are subject to it must pay the money regardless of whether the government directly compensates them with products or services in exchange. To fulfill the expectations of the people and function as a government, it needs financial resources (Bhatia, 1976; James, 2000). Therefore, the government must first take away from what it gives.

Enhancing tax compliance increases the amount of money available to fund public services without raising taxes on those who already pay them (Bird & Casanegra, 1992). The organized review of a company's important commercial processes, financial and non-financial records, physical stock and other assets, internally generated data, and that produced independently of the firm is known as tax audit, according to ERCA (2010).

A tax auditor looks at whether a taxpayer has accurately calculated and submitted their tax amount as well as the tax payer has met all other requirements. Compared to other sorts of examination, such as general desk checks, compliance visits or reviews, or document matching programs, tax auditing is frequently more thorough and in-depth.There are exceptions to the above rule in that from one country to the next, conditions and methods differ (OECD, 2006).

More often than not, an audit will focus on the topics thought to be most important for determining a taxpayer's tax liability accurately. These issues will typically include any signs of sizable unreported income (as might be suggested by a very low ratio of net to gross business income computed from a taxpayer's return) or potentially over-claimed deduction items that might be visible from a review of a taxpayer's tax return and other information. The taxpayer should have supporting papers in addition to income tax forms and other reporting. The national legislation frequently mandates a business abide by specific bookkeeping and accounting standards in the case of business audits. Physical inquiries, such as the inspection and examination of inventory items, facilities, etc., may also be part of the audit (OECD, 2006).

Another meaning of tax compliance is the act of filing tax forms, accurately disclosing all taxable income, and paying all due taxes on time without needing to await follow-up actions from the relevant authority (Chan et al, 2000). Whether done purposefully or not, failing to confirm with tax duties is referred to as tax noncompliance (Loo, 2006; Mohani, 2001; and Allingham and Sandmo, 1972).

Noncompliance was widely categorized by Soos (1991) and Krichler (2007) as the failure to file a tax return, underreporting of taxable income, overstating tax claims, such as deductions and exemptions, and failing to pay tax liabilities as per the tax law. As a result, for the purpose of this study, tax non-compliance is defined as the failure to follow tax laws, the failure to declare accurate income, the act of claiming inaccurate deductions and exemptions, and/or the act of paying erroneous taxes after the deadline.

There are a variety of variables that express distinct aspects of the effectiveness of tax audits as well as mixed findings. In order to better organize the components, they are categorized into three groups: Institutional factors, tax auditor related factors, and taxpayer related factors.

The first category of factors in this study related to organizational settings includes tax authorities themselves. The institutional factors which are linked to organizational theories are important to ensure that performance of the organization is improved. As per Hansen and Wernerfelt (1989), internal organizational characteristics have important roles in influencing an organization's performance. As per Hansen and Wernerfelt (1989), organizations must fit with the organizational variables to their environments in order to be successful. An effective organization is thought to have a good fit between its environment and its subsystems, according to the contingency theory (CT), which contends that there is no one right method to run organizations (Emmanuel et al., 1990; Galbraith, 1973; Lawrence and Lorsch, 1967).

As CT assumptions and Chalu and Mzee (2018) institutional factors are expected to make positive contributions towards tax audit effectiveness. Hence, based on the theoretical foundation and the empirical evidence, the following hypothesis is developed:

H1. Tax audit effectiveness is positively influenced by institutional related factors.

The tax-auditor-related factors will be grounded under agency theory, as recognized by Jackson and Milliron (1986) that tax payers are viewed as agents of the government, with the goal of maximizing revenue while minimizing effort. At the same time, taxpayers are considered to have the wish to minimize tax costs in terms of tax paid, the cost of time spent in record-keeping, the amount of preparation fees paid and the costs associated with tax audit.

Based on the preceding arguments, it is concluded that tax auditors can improve tax audit effectiveness and, hence tax auditor-related factors would have a positive influence on tax audit effectiveness. Thus, the following hypothesis has been proposed:

H2. Tax audit effectiveness is positively influenced by tax auditor related factors.

Taxpayers are crucial for effectiveness of tax audit because they are supposed to conform to tax rules and regulations. Al Frijat (2014) argued that if taxpayers provide accurate and correct information, it will help build and restore bridges of trust between taxpayers and tax authorities. According to Al Frijat (2014) , the factors that identified to help taxpayers contribute positively towards improved effectiveness of the tax audit included expanding and increasing the support for group who are responsible for collecting information about taxpayers, and consolidating cooperation between tax authorities and other institutions.

The above review leads to hypothesis that if tax auditors are able to understand the taxpayers' perspective, as well as the nature of their business operations, including their accounting systems (Muhammad, 2013). Accordingly taxpayer-related factors will be very crucial for effectiveness tax audit and, hence, the following hypothesis was designed:

H3. Tax audit effectiveness is positively influenced by taxpayer related factors.

Some research asserted that audits reduce tax evasion (Jackson and Jaouen, 1989; Shanmugam, 2003; Dubin, 2004). These results imply that tax audits might be crucial in self-assessment systems and that their primary objective is to boost voluntary compliance. Frequency and thoroughness of audits may motivate taxpayers to complete their tax forms with greater caution, disclose all income, and claim the appropriate deductions to determine their tax burden. On the other hand, people who have never had their tax returns examined could feel pressured to understate their true income and make bogus deduction claims.

H4: Tax audit effectiveness has a significant effect on Tax compliance.

Besides, different empirical literature indicated that tax compliance also influenced indirectly by taxpayers' behavior, tax auditor professions and institutional framework through tax audit effectiveness (Christensen et al., 2020; Alm & Torgler, 2011). Thus, this research also focused on identifying specific mechanisms through which tax audit effectiveness interacts between institutional related factors, taxpayers related factors, tax auditor related factors, and tax compliance.

H5: Tax audit effectiveness has a significant mediating effect between institutional related factors, taxpayers related factors, tax auditor related factors, and tax compliance.

Research Methodology

Pragmatism research philosophy was used for this study. Pragmatics acknowledges that there are numerous perspectives on the world and on how to conduct research, that no one viewpoint can always provide the full picture and that there may be so many facts (Saunders et al., 2016). A quantitative research approach with explanatory research design was used in this study. Explanatory research design helps to analyze the cause of focal problems (Bryman, 2012). This study used tax auditors including team leaders, director, audit supervisor, and process owner, namely: Addis Ababa taxpayers Office, Dire Dawa office, Adama office, Jimma office, Bahir Dar office, Kombolcha office, and Hawassa office as target population. Hence, 550 tax auditors are the total target population and parts of this study. In addition, to measure the perception of taxpayer towards tax audit effectiveness and tax compliance taxpayers are considered as a target population. Therefore, the total numbers of taxpayers in the study area are 28,478 (Ministry of Revenues [MOR], 2023). Thus, the sample sizes of this study using Cochran (1977) are 1,067 taxpayers using convenience sampling techniques and all 550 tax auditors. A self-administrated questionnaire was used. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used for data analysis. PLS-SEM has become a common and second-generation method for estimating complex path models with latent variables and their relationships (Sarstedt et al., 2017).

The study conceptual framework and path model to indicate the determinants of tax audit effectiveness, tax compliance and their association is stated in figure 1.

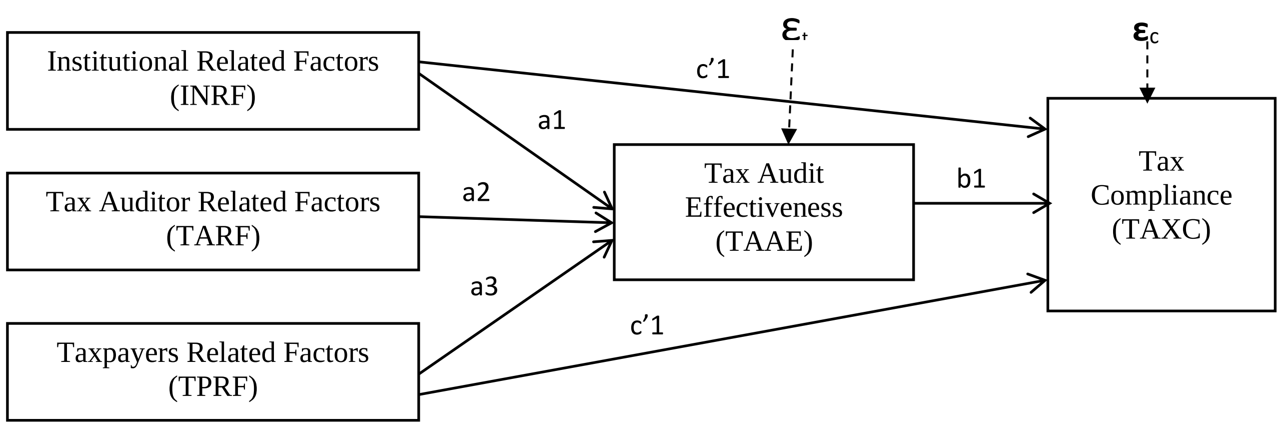

Figure 1: Conceptual framework and path model

Source: Compiled by Authors, 2023

Models Specification

$TAAE = \beta_t + a1INRF + a2TARF + a3TPRF + \varepsilon_t$ ………………………….……… Model 1

$TAXC = \beta_C + c'1INRF + c'2TPRF + b1TAAE + \varepsilon_C$…………………………..... Model 2

$C = C' + ab$ …………………………………………………………….…..….. Model 3

Where:

β_t and β_c = regression constant

a1, a2, a3, b1, c'1, c'2, = regression coefficients

ε_t and ε_c = errors in the estimation of TAAE and TAXC

C= Total effect (Direct effect + Indirect effect)

Result and Discussion

Analysis of Measurement Model

In structural equation modeling (SEM), assessing model fit is crucial to determine how well the proposed model corresponds to the observed data. Model fit indices help evaluate whether the model's estimates adequately reflect the underlying relationships among variables.

Table 1: Model fit

	Saturated model	Estimated model
SRMR	0.067	0.067
d_ULS	1.242	1.242
d_G	0.616	0.616
Chi-square	2981.546	2981.546
NFI	0.802	0.802

Source: Survey, 2023

The SRMR is a measure of the average discrepancy between the observed and predicted correlations. Values below 0.08 are generally considered acceptable, indicating a good fit (Hu & Bentler, 1999). As can be seen Table 1, both the saturated and estimated models have an SRMR of 0.067, which suggests that the model fits the data reasonably well. The NFI assesses the improvement in fit relative to a null model, where values range from 0 to 1, with higher values indicating better fit. Values above 0.90 are generally preferred (Bentler & Bonett, 1980). Both models show an NFI of 0.802, suggesting a relatively good fit.

As a summary, Table 1 shows that the value of goodness of model fit (SRMR results) is 0.067 which is less than 0.08; this indicated that this study model had a good fit. As a conclusion, the fit indices in Table 5 indicate that both the saturated and estimated models exhibit similar levels of fit.

Table 2: R-square

	R-square	R-square adjusted
Tax Audit Effectiveness	0.600	0.597
Tax Compliance Level	0.219	0.214

Source: Survey, 2023

According to Wooldridge (2016), the R-squared value in regression analysis represents the proportion of variance in the dependent variable explained by the independent variables, indicating the explanatory power of the model. As can be seen in Table 2, According to Wooldridge (2016), R-square explained that to what extent the independent variables explain the dependent variables in this study. Therefore, taxpayers related factors, institutional related factors, and auditors related factors explained the tax audit effectiveness level by 60%. Moreover, tax compliance explained directly by tax audit effectiveness, taxpayers' related factors, institutional related factors and indirectly by tax auditor related factors through tax audit effectiveness by 21.9%.

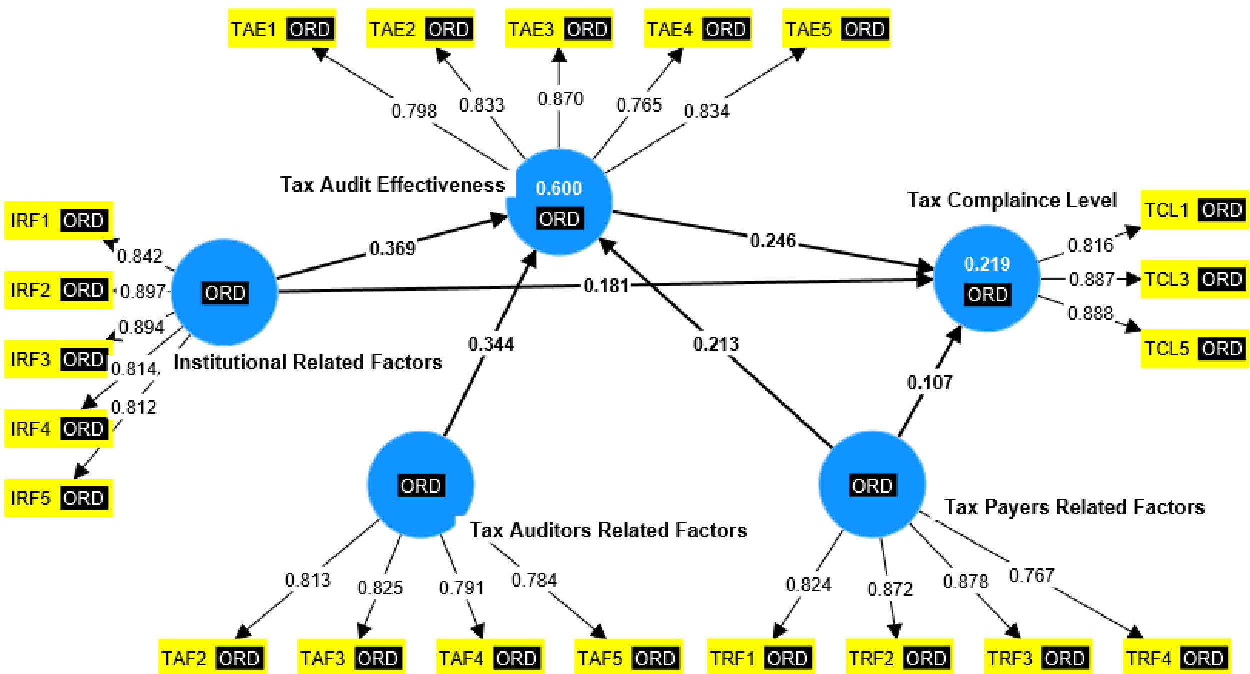

Figure 2: Model Path

As can be seen in Figure 2, the loadings for each items of research variables value are high and above the commonly accepted threshold of 0.7 (Hair et al., 2019). This indicates that the indicators of each construct are reliable.

Table 3: Construct reliability and validity

Research Variables	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Institutional Related Factors	0.906	0.908	0.930	0.727
Tax Audit Effectiveness	0.878	0.883	0.912	0.674
Tax Auditors Related Factors	0.817	0.817	0.879	0.646
Tax Compliance Level	0.830	0.835	0.899	0.747
Tax Payers Related Factors	0.856	0.859	0.903	0.699

Source: Survey, 2023

Analysis of Structural model

As can be seen in table 3, the composite reliability results of the research variables are above 0.7. Therefore, the contribution of each independent factor to the total variance is an indication of the degree of validity of the instrument in the acceptable level. Thus, the Cronbach's Alpha and Composite Reliability values are high, indicating strong internal consistency and reliability of the indicators for this construct. In addition, the AVE value is above the 0.5 threshold, indicating good convergent validity.

Table 4: Path coefficients

Causal and effect relationship of variables	Path coefficients
Institutional Related Factors -> Tax Audit Effectiveness	0.369
Institutional Related Factors -> Tax Compliance Level	0.181
Tax Audit Effectiveness -> Tax Compliance Level	0.246
Tax Auditors Related Factors -> Tax Audit Effectiveness	0.344
Tax Payers Related Factors -> Tax Audit Effectiveness	0.213
Tax Payers Related Factors -> Tax Compliance Level	0.107

Source: Survey, 2023

As noted by Kline (2015), path coefficients in structural equation modeling represent the direct relationships between variables, where positive coefficients indicate a direct and positive association between the independent and dependent variables. Table 4 indicated that all the path coefficients values are positive which shows that there is a direct relationship between the independent variables and the dependent variable. Though, the path coefficient value of the institutional related factors directly to the tax audit effectiveness is more than other independent constructs, i.e., 36.9 %. Moreover, tax audit effectiveness has the most determinant factors of tax compliance level in this study. This means institutional related factors -> tax audit effectiveness has a coefficient of 0.369. This coefficient suggests a moderate positive effect of institutional related factors on tax audit effectiveness. A higher value in institutional related factors is associated with a higher effectiveness of tax audits. This indicates that institutional elements (such as policies, regulations, or organizational practices) play a significant role in enhancing the effectiveness of tax audits. Institutional related factors -> tax compliance level has coefficient of 0.181. This positive coefficient indicates a weaker effect of institutional related factors on tax compliance level. While there is an effect, it is relatively modest. Institutional factors influence tax compliance, but their effect is not as pronounced as their effect on tax audit effectiveness. Tax audit effectiveness -> tax compliance level has a coefficient of 0.246. This coefficient represents a moderate positive effect of tax audit effectiveness on tax compliance level. It suggests that more effective tax audits lead to higher levels of tax compliance. Effective audits are associated with improved compliance, though the effect is not extremely strong. Tax auditors related factors -> tax audit effectiveness has a coefficient of 0.344. This coefficient indicates a moderate positive effect of tax auditors related factors on tax audit effectiveness. Factors related to tax auditors, such as their skills, resources, and practices, significantly influence the effectiveness of tax audits. This shows that the attributes and conditions affecting tax auditors are important for effective auditing. Tax payers related factors -> tax audit effectiveness has a coefficient of 0.213. This positive coefficient suggests a relatively weaker effect of tax payers related factors on tax audit effectiveness. Although factors related to taxpayers have some influence on the effectiveness of audits, their effect is less significant compared to other factors such as institutional related factors and tax auditors related factors. Tax payers related factors -> tax compliance level has a coefficient of 0.107. This coefficient represents a very weak positive effect of taxpayers' related factors on tax compliance level. The influence of taxpayer-related factors on compliance is minimal, indicating that while these factors do play a role, their effect is relatively less significant compared to other determinants of tax compliance.

In general, institutional related factors have a moderate impact on tax audit effectiveness and a weaker effect on tax compliance level. Tax audit effectiveness has a moderate positive effect on tax compliance level. Tax auditors related factors significantly impact tax audit effectiveness, showing the importance of auditor-related factors in effective auditing. Taxpayers related factors have a weaker effect on both tax audit effectiveness and tax compliance level. These path coefficients highlight the relative strengths of different relationships in our model, providing insight into which factors most significantly affect tax audit effectiveness and tax compliance.

Table 5: Total effects

	Tax Audit Effectiveness	Tax Compliance Level
Institutional Related Factors	0.369	0.271
Tax Audit Effectiveness		0.246
Tax Auditors Related Factors	0.344	0.085
Tax Payers Related Factors	0.213	0.160

Table 5 shows the total effects of various factors on tax audit effectiveness and tax compliance levels. The data indicates that institutional-related factors exhibit the strongest total effect on both tax audit effectiveness (0.369) and tax compliance level (0.271). This suggests that institutional elements such as policies, resources, and organizational structures play a significant role in enhancing both audit effectiveness and compliance outcomes. Alm and Torgler (2011) point out that strong institutional frameworks increase transparency and accountability, which can significantly enhance tax compliance. Similarly, Fjeldstad and Semboja (2001), and Chalu and Mzee (2018) suggest that robust institutional structures foster a more transparent audit process, enabling greater compliance by reducing tax evasion opportunities.

Tax auditors-related factors also display a notable effect on tax audit effectiveness (0.344) but show a lower influence on tax compliance level (0.085). This pattern implies that while factors related to tax auditors—such as their training, expertise, and conduct—are instrumental in effective audits, they have a comparatively minimal direct effect on compliance among taxpayers. Conversely, tax payers-related factors have an effect on tax audit effectiveness (0.213) and tax compliance level (0.160), though to a lesser extent than institutional factors. These findings may reflect that taxpayer characteristics, attitudes, and behaviors contribute moderately to both audit and compliance outcomes. DeBacker et al. (2015) demonstrate that the mere presence of trained auditors does not necessarily lead to higher compliance unless backed by institutional support and regulatory frameworks. This nuance underscores that while skilled auditors enhance the audit process, institutional support is required to convert these improvements into taxpayer compliance.

Finally, tax audit effectiveness itself shows a direct effect on tax compliance level (0.246), highlighting its essential role in fostering compliance. This underscores the reciprocal relationship whereby enhanced audit effectiveness can directly improve compliance levels among taxpayers. Slemrod et al. (2001) find that improved audit effectiveness positively impacts compliance levels, as taxpayers are more likely to comply if they perceive a credible audit threat.

The total effect analysis reveals that institutional factors are paramount in influencing both audit effectiveness and compliance, followed by the characteristics of auditors and taxpayers. The direct link between audit effectiveness and compliance further reinforces the importance of robust audit practices in achieving higher compliance rates.

Conclusion and Recommendations

To test all variables identified, the study has used Smart PLS software to analyze the data using structural equation modeling. As per the study result, the adjusted r-square result for Tax Audit Effectiveness is around 60% which states that all independent variables that affect audit effectiveness covers 60% and this shows that still there are variables which affect tax audit effectiveness. Similarly the variables identified as independent variables for tax compliance is also addressed 22% and still there are variables which have contributions to affect tax compliance level of taxpayers. The path coefficients for the list of the variables are indicated as follows. institutional related factors to tax audit effectiveness 0.369, institutional related factors to tax compliance level 0.181, tax audit effectiveness to tax compliance level 0.246, tax auditors related factors to tax audit effectiveness 0.344, tax payers related factors to tax audit effectiveness 0.213, tax payers related factors to tax compliance level 0.107. The path coefficients result for all variables shows above 0.1 and are found that these variables have a certain impact on the dependent variables. From these findings, institutional related factors, taxpayers related factors, and tax auditor related factors have direct effect on tax audit effectiveness. Furthermore, institutional related factors, taxpayers' related factors, and tax audit effectiveness have direct effect on tax compliance. However, institutional related factors, taxpayers related factors, and tax auditor related factors have indirect effect through tax audit effectiveness on tax compliance.

Based on the analysis made, the following recommendations are provided to optimize tax audit effectiveness and improve tax compliance levels. Implement policies that boost income levels and economic stability, such as economic stimulus packages, job creation programs, and financial assistance. Improved economic conditions can increase individuals' and businesses' ability to comply with tax regulations by making tax payments more manageable. Develop programs to improve financial literacy among taxpayers. Educating taxpayers about managing their finances and understanding tax obligations can help improve compliance. Provide incentives for compliant behavior, such as tax credits or deductions for individuals and businesses that demonstrate financial responsibility and adherence to tax laws. Develop and implement policies and regulations that support and streamline tax audit processes. Ensure that institutional frameworks facilitate effective auditing by providing clear guidelines, sufficient resources, and robust support systems. Foster collaboration between institutional bodies and tax authorities to ensure that audit practices are aligned with institutional standards. Invest in training programs for both institutional staff and auditors to enhance their capabilities and effectiveness.

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