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Article

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Cogent Economics & Finance

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Suggested Citation: Lorato, Tariku; Sendaba, Yonas; Tadesse, Tasew (2024) : Tax evasion attitude and taxpayers' perception of government legitimacy: evidence from Southern Ethiopia, Cogent Economics & Finance, ISSN 2332-2039, Taylor & Francis, Abingdon, Vol. 12, Iss. 1, pp. 1-16, <https://doi.org/10.1080/23322039.2024.2371944>

This Version is available at:

<https://hdl.handle.net/10419/321526>

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To cite this article: Tariku Lorato, Yonas Sendaba & Tasew Tadesse (2024) Tax evasion attitude and taxpayers' perception of government legitimacy: evidence from Southern Ethiopia, Cogent Economics & Finance, 12:1, 2371944, DOI: [10.1080/23322039.2024.2371944](https://doi.org/10.1080/23322039.2024.2371944)

To link to this article: <https://doi.org/10.1080/23322039.2024.2371944>



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Published online: 08 Jul 2024.



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Tax evasion attitude and taxpayers' perception of government legitimacy: evidence from Southern Ethiopia

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ABSTRACT

Tax evasion, a global concern, undermines government revenue, public services, and societal trust. It occurs when taxpayers deliberately avoid their tax obligations. This study primarily explores the link between government legitimacy and tax evasion decisions in Ethiopia. Aside from bridging the knowledge gap in tax evasion, the findings are instrumental for policymakers to develop more effective approaches to tax collection and promote a culture of voluntary tax compliance in Ethiopia. Using survey data from 768 respondents across five administrative zones in Southern Ethiopia. The research examines how taxpayers' perceptions of government legitimacy influence their attitudes toward tax evasion. Methodologically, the study employed one-way ANOVA and a logistic regression model to analyze the collected data. The findings reveal a significant negative association between government legitimacy and tax evasion. Taxpayers who view the government as legitimate are less likely to consider evasion. However, other factors also play a role. The study identifies age, perceived corruption, penalty severity, and tax system complexity as positively influencing tax evasion attitudes, while education level has a negative effect. Based on these findings, the study recommends strategies to improve government legitimacy and strengthen tax compliance. These include promoting accountable and transparent governance, enhancing public service delivery, simplifying the tax system, increasing penalties for evasion, and tackling corruption. By addressing these aspects, Ethiopia can foster trust in institutions and ultimately reduce tax evasion.

IMPACT STATEMENT

This study examines the link between government legitimacy and tax evasion decisions in Southern Ethiopia. Using survey data from 768 respondents across five administrative zones in Southern Ethiopia, the research examines how taxpayers' perceptions of government legitimacy influence their attitudes toward tax evasion. Methodologically, we employed one-way ANOVA and a logistic regression model to analyze the effect of government legitimacy on the tax evasion decisions of taxpayers. Our findings reveal a significant negative association between government legitimacy and tax evasion. Taxpayers who view the government as legitimate are less likely to consider evasion. Moreover, the study finds that the likelihood of tax evasion increases with age, perception of the presence of corruption, penalty severity, and tax system complexity, while education level is found to have a negative effect. This study not only improves our understanding of tax evasion in Ethiopia but also provides valuable insights for policymakers to design more effective tax collection strategies and promote a culture of honest taxpaying. It holds significance for two main reasons. First, it fills the knowledge gap. Tax evasion is a global problem, but understanding its causes can differ across and within countries. This study specifically explores the phenomenon in Southern Ethiopia, where the issue is not well documented. Accordingly, examining the link between government legitimacy and tax evasion contributes to a more comprehensive understanding of tax compliance behavior. Second, in terms of policy implications, this study goes beyond simply identifying the factors affecting tax evasion. It uses the findings to recommend workable strategies for Ethiopian policymakers. These recommendations target not just tax collection methods (simplifying the system, increasing penalties) but also the root causes of tax evasion (improving government transparency, tackling corruption). By addressing these areas, policymakers can create a system that fosters trust and encourages voluntary tax compliance, ultimately leading to increased government revenue in the region and improved public services.

ARTICLE HISTORY

Received 27 October 2023
Revised 6 June 2024
Accepted 20 June 2024

KEYWORDS

Tax evasion; government legitimacy. Southern Ethiopia; logit model

REVIEWING EDITOR

Dr Chris Jones, Aston University, Birmingham, United Kingdom of Great Britain and Northern Ireland

SUBJECTS

Economics; Political Economy; Economics and Development; Business, Management and Accounting

1. Introduction

The development of tax evasion is closely linked to the existence of taxation itself (Hessin et al., 1988). The issue of tax evasion is not specific to only a few countries but is a global phenomenon (Adebisi & Gbegi, 2013; Ghafoor & Hannan, 2014). Tax evasion has significant implications for government revenue, public services, income inequality, and societal trust. Nowadays, tax evasion creates efficient and full-capacity revenue collection challenges for tax revenue collection organs of the government (Rashid, 2020). This decreases the tax revenue collection of the government and restrains the provision of public services to society. High levels of tax evasion can lead to fiscal instability, as governments struggle to collect the necessary revenue to fund public expenditure.

It can also result in budget deficits, debt accumulation, and ultimately, the deterioration of public services and infrastructure, further eroding trust in the government (Bird et al., 2008). As tax evasion tends to be more prevalent among wealthier individuals and businesses, it undermines the redistributive function of the tax system, exacerbates social inequality, and fosters a sense of injustice among the public (Richardson, 2006).

Theoretically, according to Allingham and Sandmo's (1972) economic deterrence theory, tax evasion is a crime that could be committed by an individual when he/she considers its predicted benefits higher compared to the costs of being caught. This theory is supported by the findings of Becker (1968) who found an inverse association between weak tax law enforcement and tax evasion. The concept of a psychological tax contract theory developed by Frey and Feld (2007) to establish a fair and reciprocal obligation between the government and taxpayers states that tax as one party gives something, and the other takes something. Based on this theory, if taxpayers perceive the quality of state institutions to be low they may feel discouraged from fulfilling their tax obligations. This theory assumes that taxpayers are individuals who possess knowledge about the costs and benefits associated with tax evasion. The socioeconomic theory of tax evasion, introduced by Nurunnabi (2017) describes tax evasion based on institutional infrastructure. This theory emphasizes that factors, such as taxpayer behavior, the structure of the state, and the actions of tax authorities play roles in determining the extent of tax evasion.

Taxpayers' perception of the government as a legitimate authority in taxation, combined with fair tax practices and efficient government spending, helps reduce tax evasion and lowers the tendency for evasion, even when tax rates are increased (Islam et al., 2020; Washington & Nicolas, 2018; Yamen et al., 2018). Compliance is enhanced as there is an increase in both the trust and power of authorities (Kirchler et al., 2008). According to Lozza et al. (2013), political legitimacy and tax evasion attitudes were negative among left-leaning participants, but not significant among the right-leaning participants. When authorities are perceived to have legitimate power to detect and penalize evasion, voluntary compliance increases, and vice versa. Taxpayers who disapprove of government tax and spending policies evade more than comparable individuals who have a more positive outlook on the government (Washington & Nicolas, 2018). Taxpayers who perceive the government as legitimate and trustworthy are more likely to voluntarily comply with tax rules. The findings from prior research also show a positive effect of perceived legitimacy on the compliance intentions of taxpayers (Cullen et al., 2018; Reisig et al., 2014; Torgler & Schneider, 2009; Tyler, 2006; Yamen et al., 2018). This implies the importance of existing government legitimacy on the tax evasion attitude of taxpayers.

Existing empirical studies in Ethiopia have not explored the relationship between government legitimacy, power, and trust as perceived by taxpayers and their attitudes toward tax evasion. For instance, recent studies in Ethiopia by Kassa (2021), Yonas et al. (2021), Mesele et al. (2020), Abdu and Wondimu (2019), Abate and Melak (2019), Belete Belachew et al. (2018), and Mansor and Gurama (2016) have identified factors that impact attitudes towards tax evasion, such as tax rates, penalty rates, audit probabilities, tax system complexity, corruption, compliance costs, confidence, age, gender, education, and social norms. However, these studies do not consider taxpayers' views on government legitimacy and its influence on their attitudes toward tax evasion.

Recent studies from other countries also overlook the issue of government legitimacy in shaping the attitude of taxpayers towards evasion. For instance, Batrancea et al. (2022) focused on differences in tax evasion attitudes between students and entrepreneurs. They found out that students were more prone to tax evasion compared to entrepreneurs. Existing empirical studies in Ethiopia have not explored the

relationship between government legitimacy as perceived by taxpayers and their attitudes toward tax evasion. Using survey data from 18 major cities in Latin America, Castañeda (2023) finds that individuals who are highly sensitive to fairness are less likely to consider paying taxes as a civic duty and more likely to justify tax evasion. In general, there is a gap regarding how perceptions of the government by taxpayers influence tax evasion. These show that the role of government legitimacy in business tax evasion is not well documented in Ethiopia. Given such research gaps, it is essential to examine the specific factors that affect tax evasion attitudes, including government legitimacy, to inform the development of effective tax policies and enforcement measures. The primary objective of this study is to explore the possible connection between taxpayers' views on government legitimacy and their attitude toward tax evasion. To bridge the gap in evidence, we conducted surveys with taxpayers in Southern Ethiopia to gauge their perceptions of government and attitudes towards tax evasion and analyze the data to see if there are systematic correlations between these factors.

This study has a novel contribution to the Ethiopian context in the following aspects. First, existing research might have looked at tax evasion in Ethiopia, but it likely hasn't examined the specific role of government legitimacy in relation to taxpayer attitudes. Second, the study considers the novel combination of the perception of government legitimacy along with other key determinants to offer a fresh perspective on understanding tax evasion behavior in Ethiopia. It delves deeper than legitimacy alone.

To the knowledge of the researchers this study is the first empirical study in Ethiopia which provides valuable insights into the complex relationship between tax evasion attitudes and taxpayers' perception of government legitimacy. It is trying to highlight the importance of trust, fairness, and transparency in promoting tax compliance in Ethiopia. It also identifies key factors influencing tax evasion and offers policymakers and tax authorities perspective to design intervention mechanisms for improving tax compliance. These findings may provide evidence to understand the key explanations for tax evasion in Southern Ethiopia and inform the tax authority on which factors they will struggle to reduce their influence and help them to enhance the tax revenue potential of the region as well as the country.

In addition, the study emphasizes the importance of enhancing government legitimacy through transparent governance, effective public service delivery, simplifying the tax system, addressing corruption, and improving penalty rates to foster trust in government institutions and promote tax compliance. The findings of the study offer insight to tax authorities to examine the extent of trust they have built with taxpayers, which could enable the government to devise a policy framework to enhance the trust and power of tax authorities. Most importantly, it provides empirical evidence to the existing limited literature on the effect of government legitimacy on tax evasion attitudes and, the factors, influencing tax evasion decisions of taxpayers.

This study therefore contributes to the broader discourse on tax compliance and revenue collection strategies in Ethiopia and beyond, making a significant contribution to understanding the nexus between government legitimacy and tax evasion decisions and offering practical insights for policymakers and practitioners aiming to enhance tax compliance and revenue collection efforts.

This study is intended to address the following research questions

- What are the factors that influence the evasion attitude of taxpayers?
- Does taxpayers' government legitimacy perception affect their tax evasion attitude?

The remainder of this paper is organized as follows. [Section 2](#) provides a literature review, [Section 3](#) presents the methodology of the study, and [Section 4](#) discusses the results and discussion. Finally, the last section presents the concluding remarks and policy implications of the study.

2. Literature review

This section provides a review of related empirical studies conducted on the tax evasion behavior of taxpayers and the perception of government legitimacy of taxpayers and their attitude towards evasions. Several empirical studies have investigated the factors that determine taxpayers' tax evasion behavior and also explored the relationship between tax evasion attitudes and taxpayers' perception of government legitimacy. The first theoretical model by Allingham and Sandmo (1972) argues that an individual's

evasion decision depends on cost benefit comparison, the model predicted that the probability of evasion increases with higher tax rates and lower detection probabilities. According to the psychological tax contract theory, when taxpayers perceive the quality of state institutions low, they may feel discouraged from fulfilling their tax obligations (Frey & Feld, 2007). The socioeconomic theory of tax evasion also highlights that various factors, including taxpayer behavior, state structure, and the actions of tax authorities, influence the level of tax evasion (Nurunnabi, 2017).

Empirical studies on the perception of government legitimacy and taxpayers' evasion attitude revealed that taxpayers who perceive their respective tax authorities as fair and trustworthy are more likely to comply with fiscal policies (Ballard-Rosa et al., 2017; Carrillo et al., 2021; Castañeda et al., 2020; Castro & Scartascini, 2015; Kuziemko et al., 2015; Ortega et al., 2016). Richardson (2006) also found a negative relationship between government legitimacy and effectiveness with tax evasion.

Gangl et al. (2015) explore the role of power and trust in tax authorities' interactions with taxpayers and their impact on compliance behavior and the findings of the study highlight the importance of building trust and legitimacy in government institutions to enhance tax compliance. This indicates that taxpayers perception of government legitimacy increase their tax morale and reduce their evasion attitude (Bodea & LeBas, 2016; Carrillo et al., 2021; Castañeda et al., 2020; Cullen et al., 2018; 2018; Doerrenberg & Peichl, 2018; Luttmer & Singhal, 2014). Therefore, citizens would be more willing to pay taxes if they are satisfied with public goods, trust their governments, and have no reliable private substitutes for public goods (Bodea & LeBas, 2016; Castañeda et al., 2020). However, the perception of corruption and lack of legitimacy of the tax system can lead to tax evasion (Torgler, 2003).

Trust in the legal system and a higher degree of confidence in the government significantly contribute to taxpayers' willingness to pay taxes, indicating that increasing government legitimacy is crucial to fostering tax compliance (Alm & Torgler, 2006; Bird et al., 2008; Torgler, 2003). The findings by Ali et al. (2014) indicated that people are more likely to pay taxes if they perceive local government institutions as legitimate and capable of enforcing and collecting taxes efficiently. Alm (2012) on their study found that individuals are more likely to engage in tax evasion if there is a general perception that others are also evading taxes, indicating the strong influence of social norms. Taxpayers also consider the likelihood of detection and severity of punishment when deciding whether to evade taxes (Alm et al., 2010; Frey & Torgler, 2007). Frey and Torgler (2007), in their study on how tax morale and willingness to pay taxes are influenced by perceived government legitimacy, government performance, and trust in politicians, found a strong positive relationship with citizens' tax morale. This suggests that, when people have high confidence in government institutions, they are more willing to pay taxes.

The slippery framework of Kirchler et al. (2008) postulated that the level of compliance is correlated with the authorities' power to enforce tax laws and trust in the authorities. A study by Kastlunger et al. (2013) found that trust is positively related to voluntary compliance which means the more legitimate the government is the lower the evasion tendency will be.

Most empirical studies have found a positive relationship between trust in the government and tax compliance (Frey & Feld, 2007; Kirchler et al., 2008). Ali et al. (2014) found that tax compliance attitude is positively correlated with the provision of public services. The study by Shimeles et al. (2017) revealed that appealing to tax morale promotes compliance, but is slightly less than the threat of an audit. Khelif and Amara (2019) investigated the effect of political connections on tax evasion practices at the country level and tested whether the level of corruption in a country moderates such an association. The study found a positive association between political connections and tax evasion, and this relationship is more prevalent in a highly corrupt environment. Other factors like government efficiency and corruption control (Nimer et al., 2022) and Audits and fines are influential in reducing tax evasion (Biondo et al., 2022).

The recent empirical studies conducted on the nexus between government legitimacy and tax evasion attitude indicate the negative effect of perceived legitimacy on taxpayers' evasion attitude. The study by Yamen et al. (2018) on the relationship between perceived legitimacy and compliance intentions found a positive association between perceived legitimacy and individuals' intentions to comply with rules and regulations. This suggests that when individuals perceive rules as legitimate, they are more likely to comply with them. Cullen et al. (2018) also investigated the impact of perceived legitimacy on compliance intentions and found that perceived legitimacy plays a crucial role in shaping individuals' intentions to comply with rules and regulations. The other studies by Reisig et al. (2014); Jackson

et al. (2012); Tyler (2010) and Torgler and Schneider (2009) also indicated that perceptions of legitimacy can have a significant impact on individuals' willingness to comply with rules and regulations.

3. Methodology

3.1. Description of the study area

The Southern Nation Nationalities and Peoples Region (SNNPR) is one of the ten regional states accounting for more than 10% of the country's land area. According to a census conducted by the Central Statistical Agency of Ethiopia, the SNNPR has an estimated total population of 15,042,531 (Central Statistical Authority [CSA], 2007). We have considered SNNPR for our study since it is among the most well-established and politically significant regions in the country. The council of SNNPR claimed that 'This Region being organized by incorporating 56 Nations, Nationalities and Peoples and having established a constitutional system, nowadays, it is showing a remarkable progress in fulfilling the interests of the people in development, good governance and democratization process' (SNNPRS, 2014). To this end, such claims of good governance and democratization process need to be justified with empirical evidence in relevant aspects such as reduced evasion attitude.

3.2. Research design and approach

Research design involves the intersection of philosophy, inquiry strategies, and specific methods. Research designs can be classified into descriptive, explanatory, and exploratory (Babbie, 2007). As the researchers intended to formulate the relationship between government legitimacy and tax evasion, the study employed explanatory research design. The emphasis here is to identify the effects of taxpayers' perception of government legitimacy on their tax evasion attitude and also investigate other determinant factors that influence tax evasion decisions and portray the nature and direction of the relationships among the variables. The study employed a quantitative research approach to analyze and interpret the quantitative data collected from the respondents.

3.3. Target population and sampling strategy

According to the Regional Income Tax Proclamation 165/2017 Article 3, taxpayers are categorized into three as Category A; Category B, and Category C depending on their legal company status and annual turnover (Proclamation 165/2017). The targeted populations of the study were category 'A' and 'B' business income taxpayers in the study area. These categories are selected for their legal provision to submit books of accounts to file tax returns and their annual turnover is comparatively higher, which may trigger an evasion attitude as to the utility model of Allingham and Sandmo (1972). They are also taxpayers who are meant to have frequent contact with tax authorities as part of the legal framework of Southern, Ethiopia.

3.3.1. Sample size

To determine the sample size from each zone, the mathematical formula of Yamane (1967) was used by considering the total taxpayers, sampling error, and level of reliability. It was assumed that the sample would have 90% reliability and a sampling error of 10%. The sample size was determined separately for each category (Table 1). The number of Category A and Category B tax payers in the selected Zones (Table 1) was obtained from SNNPRS Regional Revenue Authority (2020).

Table 1. Sample size of taxpayers across selected administrative zones.

Selected zones	No. of category A taxpayers	Sample size	No. of category B taxpayers	Sample size	Total sample computed
Gedeo	1279	93	471	83	176
Gamo	1432	94	964	91	185
Hadiya	988	91	770	88	179
Gurage	1382	94	1095	92	186
Halaba	336	77	189	66	143
Total	5417	449	3489	420	869

The values indicated in bold are sample size determined from selected administrative Zones for Category-A and Category-B taxpayers.

$$n = \frac{N}{1 + (0.10)^2 * N}$$

Where N is the study population for category A and B taxpayers in each zone, n is the sample size, and e is the margin of error.

3.3.2. Sampling techniques and sampling procedure

Multistage area sampling with a stratified random sampling procedure was used to select the respondents. Among the zones in the SNNPR, five zones were selected considering the large number of registered category A and B taxpayers. Zonal capital and nearby Wereda/districts were also selected, considering the numbers of taxpayers and economic concentration in the towns. Then, taxpayers were randomly selected from each stratum for data collection.

3.4. Data type, source, and collection instruments

Both primary and secondary data sources were used in this study. Primary data was collected from selected taxpayers (respondents) by using structured questionnaires that were translated into the local language (Amharic). Then, the data was collected by trained enumerators under the supervision of the researchers. In addition, the secondary data was also collected from the reports, websites, and other sources.

3.5. Measuring the tax evasion attitude of taxpayers

Many measurements are used in the literature to measure tax evasion, including measures that capture the actual act of paying taxes that capture individuals' attitudes toward taxation, which relates to voluntary tax compliance (Frey & Feld, 2007). In this study, we used the attitude of taxpayers toward tax evasion to measure tax evasion (Yonas et al., 2021). This is because taxpayers do not reveal their level of evasion when asked direct questions that ask whether they are compliant or not. Responses to this type of question are likely to be biased in tax evasion surveys (Mascagni, 2017).

We used an indirect question to capture the respondent's attitude towards taxation while avoiding the direct implication of 'wrongdoing' by the respondent. Moreover, indirect survey questions reduce response biases (Kaufmann, 1997; Reinikka & Svensson, 2006). The answers to indirect questions reveal the respondents' actions and use their behavior or attitude as a reference point (McNeeley, 2012). Specifically, a survey question asked respondents indirectly about their attitude towards tax evasion using a five-point Likert scale (strongly agree, agree, neutral, strongly disagree, or disagree). Following Torgler and Schneider (2009), we drop 'neutral' from the analysis. We then categorized them into two categories. The respondents who respond 'agree' or 'strongly agree' are assumed to have a positive attitude towards tax evasion (non-compliant); while others are considered as having a negative attitude towards tax evasion (compliant attitude). To model the probability of respondents towards tax evasion, we assigned the value '1' for respondents who have a positive attitude towards tax evasion and '0' otherwise (Yonas et al., 2021).

3.6. Measuring the perception of government legitimacy

Robbins and Kiser (2018) defined legitimacy as the obligation among political members to defer to and obey the dictates of political authority and laws. According to Levi et al. (2009), government legitimacy is the belief that citizens hold about the appropriateness of the government structure, officers, and process. Moreover, it denotes the popular acceptance of government officials' rights to government. By establishing legitimacy, states can expect to enhance their tax compliance without spending more resources on coercion. In our study, we considered the absence or presence of government legitimacy, as implied by the evasion tendency of the taxpayer. We have tried to measure the evasion inclination of a taxpayer to determine whether he/she tries to justify his/her evasion attitude by rationalizing government maladministration or process defects and political incompetence using indirect survey questions.

Similar to our approach in measuring tax evasion attitude, we employed the same methods to assess taxpayers' perception of government legitimacy. Respondents were categorized into two groups based on their responses, with those indicating 'agree' or 'strongly agree' being classified as perceived legitimate government, while the remaining respondents were considered to have a negative perception towards existing governance. We assigned a value of '1' to respondents with a positive perception of government legitimacy and '0' otherwise. to those with a negative perception for analysis purposes.

3.7. Other control variables

In addition to government legitimacy, we include other independent variables that may affect the evasion decisions of taxpayers, such as taxpayers' perception of corruption (perception of corrupted tax authority/officials), age, education, taxpayer category, penalty, and complexity of the existing tax system (Abate & Melak, 2019; Belete Belachew et al., 2018; Abdu & Wondimu, 2019; Bott et al., 2020; Kassa, 2021; Mansor & Gurama, 2016; Mesele et al., 2020; Nimer et al., 2022; Yonas et al., 2021).

3.8. Methods of data analysis

Both descriptive and inferential statistics were used to analyze the collected data. Descriptive statistics such as percentages, frequencies, means, standard deviations, chi-square, one sample *t*-test, and ANOVA were used to analyze the data, extract the basic characteristics of the respondents, and identify and compare whether there is a significant difference in the evasion attitude of taxpayers based on their basic attributes. The inferential statistics (logistic regression model) was used to identify key determinant factors that influence evasion decisions of taxpayers including taxpayers' perception of government legitimacy and their attitude towards evasion in the study area. We used the statistical software packages for social science (SPSS 20) and STATA version 14 for data analysis.

3.9. Empirical approach

The dependent variable of this study is a binary type coded as 1 and 0. Different models were used when the dependent variable was a binary/dummy. Binary models, such as logit and probit models, are commonly used when the dependent variable is binary or a dummy. The main difference between these models is that the logistic function has slightly flatter tails than the normal and probit curves (Gujarati, 2004). However, this minor difference did not significantly affect the estimation of probabilities. According to Hosmer and Lemeshow (2000), a logistic regression model is advantageous over other models in the analysis of dichotomous outcome variables. It is flexible, easy to use mathematically, and provides meaningful interpretation of the results. Consequently, we used a binary logistic regression model to assess the effects of taxpayers' perception of government legitimacy on taxpayers' evasion attitudes and other factors that determine taxpayers' evasion attitudes.

Based on Gujarati (2004), and Hosmer and Lemeshow (2000), Yonas et al. (2021), and Lorato et al. (2023), the functional form of the logistic regression model is as follows:

$$P_i = E(Y = 1/X_i) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_i)}} \quad (1)$$

For ease of exposition, we write (1) as

$$P_i = \frac{1}{1 + e^{-Z_i}} \quad (2)$$

The probability that a given taxpayer has a positive attitude towards tax evasion is expressed by (2), while the probability of a negative evasion attitude is

$$1 - P_i = \frac{1}{1 + e^{-Z_i}} \quad (3)$$

Therefore, we can write the ratio of the probability that a taxpayer will evade tax to the probability that it will not evade tax:

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{Z_i}}{1 + e^{-Z_i}} \quad (4)$$

Now, $(P_i/1-P_i)$ is simply the odds ratio in favor of a positive tax evasion attitude. Finally, taking the natural log of Equation (4) we obtain,

$$Z_i = \ln \left[\frac{P_i}{1 - P_i} \right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + U_i \quad (5)$$

Z_i is a function of the explanatory variables(X), which is expressed as

$$Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + U_i \quad (6)$$

$$TE_i = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Edu} + \beta_3 \text{Category} + \beta_4 \text{Legitimacy} + \beta_5 \text{Audit} + \beta_6 \text{Corruption} + \beta_7 \text{Penalty} + \beta_8 \text{T.system} + U_i \quad (7)$$

Where Z_i is the log of the odds ratio, which is linear in the independent variables, X_i is a vector of relevant taxpayer characteristics, and U_i is the disturbance term. TE_i is the tax-evasion attitude of taxpayers. We used the maximum likelihood estimation method to estimate the parameters of the logit model. However, the parameter estimates of the logit model only provide the direction of the effect of the explanatory variables on the dependent variable. This indicates that the logit model used in this study estimates the direction of the effect of explanatory variables on the dependent variable but not the actual size of the change or the probabilities (Gujarati, 2004). To interpret the results, this study relies on the marginal effect, which measures the expected change in the probability of tax evasion attitude when there is a unit change in the explanatory variable (Greene, 2008) (Table 2).

3.10. Reliability and validity tests

Reliability is a measurement tool that can be used to test the stability, consistency, or dependability of questionnaire items. Cronbach's alpha was used to test the reliability of the items included in the questionnaire. An acceptable level of reliability ranges 0.6–0.7, however, values higher than 0.95 are not necessarily good, since they might be an indication of redundancy (Hulin et al., 2001).

Table 3 shows that the overall Cronbach's Alpha of the variables in the model equals 0.636 for the entire questionnaire which indicates very good reliability. Therefore, the results obtained reveal that the measurement model used in this study has good reliability.

4. Result and discussion

4.1. Response rate

We distributed 869 questionnaires to the respondents; however, only 768 questionnaires were completed and returned, resulting in a response rate of 88%. According to Fincham (2008), a response rate

Table 2. Definitions of variables and measurement variables and measurement.

No	Definition of variables	Measurement
1	Dependent variable: TEI- Taxpayers tax evasion attitude	'1' for positive attitude towards tax evasion, '0' otherwise(negative attitude towards tax evasion)
	Independent Variables	
2	Age –age of taxpayers	continuous variable measured by years
3	Edu- Taxpayer level of Education level	Continuous variable measured by years of schooling of taxpayers.
4	Taxpayer Category of Taxation	'1' for category B; '0' for A
5	Legitimacy-government legitimacy	'1' for perceived good governance, '0' otherwise
6	Audit: status of audit by the revenue authority	'1' for being audited ; '0' otherwise
7	Corruption: Tax officers corrupt behavior	'1' for the perception of corrupted officials, '0' otherwise
8	Penalty: Tax payers perception about the rate of penalty & its enforcement	'1' for high rate of penalty, '0' otherwise
9	Tax system: taxpayers' perception about existing tax system(complexity & tax law loopholes)	'1' for the complex tax system, '0' otherwise

Table 3. Reliability statistics.

Cronbach's alpha	Cronbach's alpha based on standardized items	N of items
0.607	0.636	9

Source. SPSS version 20 outcome.

Table 4. Mean scores of taxpayers' perception of government legitimacy and their evasion attitude across selected administrative zones.

Mean score of taxpayer evasion attitude						Mean score of taxpayers' perception government legitimacy			
Zone	N	Mean	Std. Dev	Max	Min	Mean	Std. Dev	Min	Max
Gedeo	146	2.948	0.7914	4.75	1.00	3.346	0.7106	1.00	4.60
Gamo	166	2.508	0.6782	5.00	1.00	3.634	0.7351	1.00	4.60
Hadiya	171	2.838	0.7504	4.63	1.50	3.375	0.4984	2.20	4.50
Halaba	121	2.512	0.7576	5.00	1.00	3.511	0.6413	2.00	5.00
Gurage	164	2.997	0.8201	5.00	1.13	3.014	0.7400	1.40	5.00
Total	768	2.757	0.7871	5.00	1.00	3.363	0.7000	1.00	4.60

Source. SPSS version 20 outcome.

Table 5. One-sample test.

Test value = 3						
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence interval	
					Lower	Upper
Tax payers' evasion attitude	-9.089	768	0.000	-0.24256	-0.2949	-0.1902
Taxpayers' perception of government legitimacy	15.929	768	0.000	0.37050	0.3248	0.4162

Source. SPSS version 20 outcome.

Table 6. Robustness tests of equality of means for government legitimacy.

	Statistic ^a	df1	df2	Sig
Welch	16.116	4	366.972	0.000
Brown-Forsythe	18.098	4	706.778	0.000

Source. SPSS version 20 outcome; ^aAsymptotical F distribution.

of 80% or higher is considered good and expected for survey research. Therefore, our study's response rate meets this requirement, and we used data from 768 respondents for the analysis of the study.

4.2. Results of descriptive statistics (Table 4)

Before proceeding to the detailed analysis of the nexus between tax evasion attitude and government legitimacy perceptions, it was necessary to compute the one-sample *t*-test result to measure whether the mean value of the scale variable is significantly different from the neutral value. Because we cannot conduct any further test if the mean value is significantly different from the neutral value.

Tables 5 demonstrate that the *p*-value for the test is below 0.05 which indicates that the mean value is significantly different from the neutral value. This implies that respondents are not neutral in their responses and expressed their level of agreement or disagreement on the issues raised. This has enabled us to proceed to our further analysis.

4.3. Government legitimacy and tax evasions perception of taxpayers

In our study, we considered the absence or presence of government legitimacy, as implied by the evasion tendency of the taxpayer. We have tried to measure the evasion inclination of a taxpayer to determine whether he/she tries to justify his/her evasion attitude by rationalizing government maladministration or process defects and political incompetence.

We used a one-way ANOVA to test the prevalence of significant differences in the government legitimacy scores among the studied administrative zones. Before we check for ANOVA, we test and confirm that the difference is statistically significant and free from type-one error via robust tests of equality of means, as indicated in Table 6.

Table 7. ANOVA result on the taxpayers' perception of government legitimacy and their tax evasion attitude.

	Sum of squares	Df	Mean square	F	Sig
Between Groups	32.628	4	8.157	18.132	0.000
Within Groups	343.245	764	0.450		
Total	375.873	768			

Source. SPSS version 20 outcome.

Table 8. Correlation matrix result: multicollinearity test.

e(V)	Age	Edu	Category	legitimacy	Audit	corruption	Penalty	Tax system
Age	1.0000							
Edu	−0.2157	1.000						
Category	−0.0358	−0.1129	1.0000					
Legitimacy	−0.0460	−0.0140	−0.0594	1.0000				
Audit	0.0007	−0.0100	−0.0465	−0.0514	1.0000			
Corruption	0.0180	−0.0338	−0.0451	0.0902	0.0392	1.0000		
Penalty	−0.0032	0.0441	−0.0509	0.1070	−0.0339	0.0826	1.0000	
Tax system	0.0946	−0.0576	−0.0098	−0.2052	0.0276	0.0673	−0.3691	1.0000

Source. STATA version 14 output.

The p -values in the ANOVA table (Table 6) and the Welch test (Table 7) were less than 0.005. This indicates a significant difference among taxpayers in their government legitimacy scores. Such variation among zones indicates a difference in government legitimacy among taxpayers in these administrative zones. These findings evidenced that a positive perception towards the government minimizes the evasion tendency of taxpayers (Cullen et al., 2018; Reisig et al., 2014; Yamen et al., 2018).

4.4. Results of inferential statistics

We employed a logistic regression model to identify the factors that determine the attitude of taxpayers toward evading tax. Before employing the model, we checked the diagnostic test for adequacy of the model and appropriateness of the data.

4.4.1. Diagnostic tests

4.4.1.1. Multi-collinearity test. The term multi-collinearity indicates the existence of an association between two or more explanatory variables. When multi-collinearity is present, it becomes challenging to determine the individual effects of each variable on the dependent variable in a regression analysis. It is important to identify and address collinearity before conducting a regression model to ensure reliable and meaningful results. Hence, before running the logistic regression model, explanatory variables were checked for the existence of the multi-collinearity problem. To check for multi-collinearity problems, Field (2009) and Hair et al. (2014) provide two approaches: the correlation matrix and VIF. In this study, we employed a correlation matrix approach to examine the multi-collinearity problem. Collinearity ranges from 1, where there is a complete relationship within the independent variables, to 0, where there is no relationship at all (Paul, 2012). A serious problem for multi-collinearity occurs if the correlation is approximately 0.8 or larger (Gujarati, 2004). The results of our study, from the correlation matrix in Table 8, indicate the highest correlation coefficient of 0.3691, indicating the absence of a multi-collinearity problem.

4.4.2. Goodness of fit of the model: the Hosmer-Lemeshow tests

The Hosmer-Lemeshow test is a goodness-of-fit test for binary, multinomial, and ordinal logistic regression models. Essentially, they compare the observed with the expected frequencies of the outcome and compute a test statistic that is distributed according to the chi-squared distribution (Hosmer & Lemeshow, 2000). A non-significant p -value of the GOF test indicated evidence of a good fit of the model. If the p -value is higher than 0.05, we accept a good fitness of the model (Paul, 2012). Therefore, the $\text{Prob} > \chi^2 = 0.3536$ value, which is insignificant, shows evidence of a good fit of the model in our study (see Table 9).

The results of the logistic regression model in Table 9 show that, keeping other factors constant, as the age of taxpayers' increases, they are more likely to have a positive attitude towards tax evasion. This

Table 9. The results of The Logit Regression model.

TEi	Coefficient	Std. Err	Z	P > z	MFx (dy/dx)
Age	0.287	0.1256	2.29	0.022**	0.064
Edu	−0.23	0.0780	−2.97	0.003***	−0.05
Category	−0.28	0.1663	−1.69	0.090	−0.06
Legitimacy	−0.23	0.1360	−1.71	0.007***	−0.05
Audit	−0.0027	0.0328	−0.08	0.934	−0.000
Corruption	0.20	0.0936	2.22	0.026**	0.04
Penalty	0.50	0.1452	3.44	0.001***	0.11
Tax system	0.69	0.1657	4.20	0.000***	0.15
_Constant	−3.76	0.8249	−4.56	0.000	

Number of obs. = 768 Contingency Coefficient = Max 0.3549
 LR $\chi^2(8) = 78.91$ Hosmer-Lemeshew goodness of fit test $\chi^2(1) [740.75][0.3536]$
 Prob > $\chi^2 = 0.0000$ LR $\chi^2(8) = 78.91$
 Log likelihood = −434.8 Pseudo $R^2 = 0.0832$

Note.

***And.

**Indicate significance at the 1% and 5% levels, respectively.

Source. STATA version 14 output.

indicates that older individuals may be more inclined to engage in tax evasion compared to younger taxpayers. This inclination could be influenced by their past experiences with tax authorities and the enforcement measures they have encountered, which may shape their attitudes towards tax evasion. The finding is consistent with the finding of Wahl et al. (2010), who suggested that older individuals may have accumulated negative experiences with tax authorities over time which leads to lower levels of trust and compliance; Similarly, Alm et al. (1992) found that older individuals were less likely to view tax evasion as morally wrong compared to younger individuals. However, the result contradicts with the studies by McGee and Tyler (2006) and McGee and Bose (2008), which highlighted older individuals are more opposed to tax evasion than younger individuals. Additionally, Khalil (2022) and Alm et al., (2020) suggested that older age groups tend to have higher respect for the law compared to younger generations, with younger individuals exhibiting lower compliance levels.

The taxpayers level of education is significantly and negatively associated with their attitude towards tax evasion. This suggests that individuals with higher levels of education tend to have a negative attitude towards tax evasion compared to those with lower levels of education. This finding aligns with previous studies conducted by Richardson (2006) and Castañeda (2023), which have also shown a negative correlation between higher levels of education and acceptance of tax evasion. However, it contradicts the findings of McGee and Tyler (2006), who suggested that less educated individuals are more opposed to tax evasion. These results imply the importance of education in shaping taxpayers' attitudes towards evasion.

Our major variable, government legitimacy, had a negative and significant effect on taxpayers' evasion attitudes. The results demonstrate that when taxpayers perceive that the government is legitimate, the likelihood of a taxpayer's tax evasion decreases by 5.2%. The results imply that the perceived legitimacy of the tax authority has a significant influence on the intention to comply. This shows that when people perceive that the government is acting in their best interests and that its procedures are fair, it will enhance their trust in the government and lead to their willingness to comply. This finding is consistent with those of previous studies (Ali et al., 2014; Bird et al., 2008; Bodea & LeBas, 2016; Carrillo et al., 2021; Castañeda et al., 2020; Cullen et al., 2018; Doerrenberg & Peichl, 2018; Jackson et al., 2012; Luttmer & Singhal, 2014; Reisig et al., 2014; Torgler & Schneider, 2009; Tyler, 2010; Yamen et al., 2018) which found a positive relationship between perceived legitimacy and compliance intentions. The findings of the study also evidenced that a positive perception of the government legitimacy minimizes the evasion tendency of taxpayers (Castañeda, 2023; Cullen et al., 2018).

The results of control variables reveal that corruption, rate of penalty, and complexity of the tax system—positively and significantly influence the evasion attitude of taxpayers. This result suggests that keeping other factors constant, the perception of tax officers being corrupted, the rate of penalty, and the complexity of the existing tax system increases the likelihood of tax evasion attitude by 4.6, 1.1%, and 1.5%, respectively. This result is consistent with the findings of Nimer et al. (2022) and Kassa (2021), who found corruption in tax administration, penalty rates, and tax system complexity can positively

influence tax evasion attitude. The findings on the penalty rate further indicate that when the rate of penalties is low, the taxpayer compares its economic incentive and engages in tax evasion. Therefore, increasing the rate of penalties effectively increases tax compliance (Bott et al., 2020).

5. Conclusions and policy implications

Tax evasion is a global issue that has a significant implication for government revenue, public services, income inequality, and societal trust. This occurs when people or organizations deliberately fail to abide by their tax responsibilities. Several factors can influence an individual's attitude toward tax evasion. These factors can vary depending on context and individual characteristics. In particular, taxpayers' perceptions of tax evasion are highly connected to the existing legitimacy of government. Consequently, understanding the specific determinants of tax evasion attitudes, including government legitimacy, is crucial for designing effective tax policies and enforcement strategies. Hence, this study examines whether there is a potential nexus between the perception of government legitimacy and tax evasion decisions in Ethiopia using evidence from five administrative zones of Southern Ethiopia. The study used cross-sectional survey data collected from 768 respondents for the analysis. The study employed one-way ANOVA and a logit regression model to analyze the collected data. The results of the study indicate that taxpayers do not view government legitimacy neutrally, and there is a significant difference in their decisions to evade taxes depending on their perception of government legitimacy. This indicates that the perception of government legitimacy plays a crucial role in shaping taxpayers' attitudes towards evasion. In essence, taxpayers' views on the legitimacy of the government significantly influence their propensity to engage in tax evasion.

The results of the logistic regression model revealed a significant negative connection between taxpayers' perception of government legitimacy and their attitudes toward tax evasion. This indicates that taxpayers who view the government as legitimate are less likely to engage in tax evasion, while those with lower perceptions of government legitimacy are more inclined to evade taxes. The study results further indicate that the control variables such as age, corruption, penalty, and complexity of the tax system had positively and significantly influence the evasion attitudes of taxpayers; however, the education level of taxpayers negatively influence their tax evasion attitudes.

Therefore, based on the findings of the study, the study suggests that the government should be legitimate to foster compliance, trust, fairness, and social norms that discourage taxpayers' evasion attitudes. In addition, improving government legitimacy through transparent and accountable governance, effective public service delivery, and addressing corruption to enhance perceived fairness, trust in government institutions, and satisfaction with public services decreases taxpayers' evasion attitudes. Moreover, simplifying tax systems by reducing complex tax laws and procedures would allow taxpayers to easily understand and comply with their obligations, thereby reducing their perception of high penalties and increasing compliance. Governments should also implement measures to tackle corruption within government institutions, as it negatively impacts government legitimacy, contributes to tax evasion, and implements strong enforcement measures and penalties to combat tax evasion. Finally, raising awareness about the negative consequences of tax evasion, the benefits of paying taxes, and promoting a culture of tax compliance can help deter individuals from engaging in such behavior. Therefore, the economic policy implications of the study underscore the importance of improving government legitimacy, simplifying the tax system, increasing penalty rates, addressing corruption (implementing anti-corruption measures), and promoting education and awareness programs to reduce tax evasion and enhance tax compliance in Ethiopia and beyond. Moreover, strengthening government legitimacy can lead to higher voluntary tax compliance, increased tax revenues, and a more stable and predictable tax system, ultimately foster trust in institutions and promote economic growth in Ethiopia.

6. Limitation of the study and areas for future research

This study is geographically limited to a single region (SNNPR) with selected zones in Ethiopia; it will be better to widen the scope of the study. In Ethiopia scholarly government legitimacy studies are uncommon; therefore, the variable needs to be investigated further. In our study, we try to measure

government legitimacy from a governance perspective only; therefore, it is better to include political and executive legitimacy dimensions to obtain a complete view of the issues.

Authors' contributions

The first author conceptualizes, organizing data, analysis, interpretation, and writing of the original draft. The second and third authors reviewed it critically and revised parts of the manuscript throughout the drafting process. Then, we read and approved the final manuscript and agreed on the published version of the manuscript.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

We would like to thank Dilla University for the funding of this research with grant number DU/CoBE/001/2020.

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Data availability statement

The datasets used in this study are available on request from the corresponding author on reasonable request.

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