

When Fear Outweighs Knowledge: Tax Sanctions, Government Service, and Tax Compliance among Savings and Loan Cooperatives

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ABSTRACT

Purpose: This study examines whether taxpayer understanding, perceived tax sanctions, and government service influence the tax compliance of savings and loan cooperatives in Bojonegoro, Indonesia, and which of the three factors has the dominant influence under a self-assessment system.

Method: A cross-sectional survey was administered to managers of savings and loan cooperatives drawn by simple random sampling from 79 registered corporate taxpayers. Of 65 questionnaires distributed, 40 were usable, a response rate of 61.5 percent. After item cleaning, the instrument retained 32 of 37 items and all scales were reliable. The data were analyzed with multiple linear regression, F-and t-tests, and standardized coefficients.

Findings: The three variables influence compliance. Perceived tax sanctions and government service have significant effects, whereas taxpayer understanding does not. Perceived sanctions are the dominant factor, so the expectation that understanding dominates is not supported.

Implications: Tax offices should combine credible and consistent enforcement with wider supervisory and service contact for small taxpayers. Understanding appears to work together with the perception of sanctions, so education should be paired with visible enforcement and with better bookkeeping capacity in cooperatives.

Originality: The study offers rare evidence on cooperatives as taxpayers, compares the relative strength of understanding, sanctions, and service in one model, and documents in detail how item-level purification shaped the final measurement model.

Keywords: tax compliance, tax sanctions, taxpayer understanding, government service, savings and loan cooperatives.

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1. INTRODUCTION

Taxes are the principal instrument through which a government mobilizes resources from society. The revenue they generate fills the state budget and pays for routine spending and for development programs, while the design of the tax system also shapes economic behavior and the distribution of burdens. Because tax authorities in most jurisdictions depend heavily on what taxpayers report and pay on their own initiative, the question of why some taxpayers comply while others do not has remained central to public finance research (Alm, 2019; Slemrod, 2019). The question is especially pressing in countries where the tax base is broad, administrative capacity is stretched, and a large share of registered taxpayers never files a return.



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Indonesia moved decisively toward a system that relies on voluntary compliance when the tax reform of 1983, based on Law Number 6 of 1983 on General Provisions and Tax Procedures, replaced the official assessment system with a self-assessment system. Under an official assessment systems, the tax authority calculates the amount owed, the taxpayer is largely passive, and a tax liability arises only after the authority issues an assessment letter. Under a self-assessment system the taxpayer is authorized to calculate, pay, and report the tax owed, which requires an active taxpayer who understands the tax rules, while the tax authority mainly supervises. A self-assessment system, therefore, works only if taxpayers are informed enough to apply the rules, motivated enough to do so honestly, and confident that violations will be noticed and answered. For this reason, the Directorate General of Taxes is expected to carry out three functions in a balanced way, namely service to taxpayers, dissemination of tax information, and enforcement of the law.

The law does not define precisely who counts as a compliant taxpayer. In Indonesian administrative practice, compliance was operationalized through four criteria. A compliant taxpayer submits tax returns on time for all types of tax over the previous two years, has no tax arrears unless a formal permit to pay in installments or to defer payment has been granted, has not been convicted of a tax crime within the previous ten years, and, when financial statements are audited, obtains an unqualified opinion or a qualified opinion whose exceptions do not affect fiscal profit or loss. Of these criteria, the timely submission of the annual and periodic returns is the most visible indicator of compliance, because it is the first and most easily observed act through which a taxpayer accepts the duty to self-assess.

By that yardstick, compliance around the time of the study was low in the setting examined here. Table 1 summarizes the annual returns processed by the Bojonegoro Primary Tax Office. Only 11,760 annual returns were filed, against 64,686 returns that had not been submitted. Among corporate taxpayers, just 2,119 returns, roughly 8 percent of the registered population, were filed, and the remaining 92 percent of corporate returns were still outstanding. The pattern is similar for employee withholding returns, where only about 10 percent were filed, and for individual taxpayers, where roughly 27 percent were filed. Behind these figures lies a substantial group of registered corporate taxpayers that had not yet fulfilled its most basic reporting obligation.

Table 1. Compliance in Annual Tax Return Filing at the Bojonegoro Barat Primary Tax Office.

Type of return	Nil	Under-payment	Over-payment	Total filed	% filed	Not filed	% not filed
Individual	3,777	3,191	4	6,972	27%	18,510	73%
Corporate	1,072	1,043	4	2,119	8%	23,363	92%
Article 21 withholding	2,095	573	1	2,669	10%	22,813	90%
Total	6,944	4,807	9	11,760	15%	64,686	85%

Source: Bojonegoro Barat Primary Tax Office, PDI Section. Percentages were recalculated from the reported counts.

Cooperatives form a distinctive part of the corporate taxpayer population. A cooperative is an economic organization with a social character that is expected to operate on economic principles toward efficiency and effectiveness. Under Law Number 17 of 2000 on Income Tax, Article 2 paragraph 1 letter b, cooperatives are income tax subjects, and this rule took effect on 1 January 2001. Cooperatives are therefore bound by the same obligations of registration, bookkeeping, calculation, payment, and reporting that apply to other legal entities. Among the various types of cooperatives, savings and loan cooperatives are of particular interest because their activity, as defined in Government Regulation Number 9 of 1995, is to collect funds from and lend funds to members, prospective members, other cooperatives, and their members. Their income arises from interest and services, which makes them a substantive rather than a marginal tax base. Practitioner commentary at the time suggested that many cooperative managers did not fully understand that their organizations carried tax obligations at all, and tax office data showed that the bookkeeping of many taxpayers was still incorrect, which in turn distorted the amount of tax owed. According to the Bojonegoro Office of Cooperatives, Small and Medium Enterprises, 79 savings and loan cooperatives were registered as corporate taxpayers in Bojonegoro.

The research questions are as follows: (1) Do taxpayer understanding, perceived tax sanctions, and government service influence the compliance of savings and loan cooperatives in Bojonegoro? (2) Does taxpayer understanding have a dominant influence on compliance? The objectives are to test both questions empirically. The findings are relevant for the tax office, which can use them to prioritize its service and enforcement activities, for taxpayers, who can see why pressure from the tax authority

is part of the design of a self-assessment system, and for researchers who study compliance in small organizations.

The contribution of this study is threefold. First, it examines a taxpayer group that is rarely studied, namely savings and loan cooperatives, whose legal form combines a social mission with a taxable commercial activity. Second, it estimates the joint and separate roles of understanding, perceived sanctions, and government service in a single model, which allows the relative strength of the three explanations to be compared directly rather than inferred from separate studies. Third, it documents the full sequence of instrument validation, which is often omitted in applied tax research, and shows how item-level decisions shaped the final measurement model.

2. LITERATURE REVIEW

Three broad explanations for compliance are relevant to such a population, and each corresponds to a component of the self-assessment logic described above. The first concerns understanding. A taxpayer who does not know what the tax is for, how the system works, or what the regulations require cannot self-assess correctly, even with good intentions. Social cognitive theory holds that people learn roles and rules through observation, interpretation, and evaluation of information in their social environment, and that understanding shapes the way behavior is regulated (Bandura, 2001). In the tax setting, this suggests that a taxpayer who understands the meaning and importance of tax, the tax system and its procedures, and the applicable regulations will be more inclined to comply. Recent studies from emerging economies treat tax knowledge as a key correlate of compliance, and some of them consider it together with trust in government and other conditions (Appiah et al., 2024; Nasution et al., 2020; Ratnawati et al., 2023). Studies of small and medium enterprises point in the same direction, since knowledge and penalties are commonly examined together as determinants of compliance among smaller businesses (Oladipupo & Obazee, 2016; Musimenta et al., 2017).

The second explanation concerns sanctions. The economic model of tax evasion treats compliance as a decision under uncertainty in which the taxpayer weighs the gain from underreporting against the probability of detection and the penalty that follows (Allingham & Sandmo, 1972). Although later research has shown that pure deterrence explains only part of observed behavior, and that norms, morale, and trust also matter (Alm, 2019; Kirchler et al., 2008), the perceived severity and certainty of sanctions remain a core lever of tax administration (Slemrod, 2019). Field experiments in several countries have used letters that communicate penalties, audit risk, or moral appeals to test how taxpayers respond (Dwenger et al., 2016; Bott et al., 2020; Gemmell & Ratto, 2018; Cranor et al., 2020; Sisay & Mayburov, 2026). Reviews and meta-analyses of tax experiments show that enforcement variables are among the most extensively studied factors (Mascagni, 2018; Alm & Malézieux, 2021). Attribution theory offers a complementary psychological reading. It proposes that people explain behavior by combining internal and external causes (Kelley, 1973). Applied to taxation, a taxpayer may comply because of an internal sense of duty or because an external threat of punishment compels compliance, and the perceived presence of sanctions strengthens the external explanation. The perception of sanctions is therefore the relevant variable, not merely their existence on paper, since a sanction that taxpayers do not know about or do not believe will be applied cannot shape their conduct.

The third explanation concerns the service that the government provides. In the tax setting, government service consists of the information, guidance, and supervision that the tax office offers, notably socialization activities and tax audits. Social influence theory holds that the presence and interaction of others shapes individual judgment and conduct, and that people adjust their behavior to social norms and to pressure from their environment (Cialdini & Goldstein, 2004). Contact between a tax office and taxpayers through socialization and audits is one of the main channels through which such influence operates. The slippery slope framework integrates this view by arguing that voluntary compliance grows with trust in the authorities and that enforced compliance grows with their perceived power, so that a tax administration is most effective when it combines both (Kirchler et al., 2008; Gangl et al., 2020). Evidence on tax administration in developing economies points to the growing importance of administrative capacity, including information technology, for the way taxpayers and officials interact (Okunogbe & Santoro, 2023; Okunogbe & Pouliquen, 2022). In Indonesia, research on the drivers of willingness to pay taxes in times of crisis emphasizes the role of the administration and of taxpayers' perceptions of it (Khozen & Setyowati, 2023). Related studies examine patriotism and public governance as supports for compliance, including among smaller enterprises, which resonates with the

idea of tax payment as a contribution to the defense and welfare of the nation (Gangl et al., 2016; Alshira'h et al., 2020).

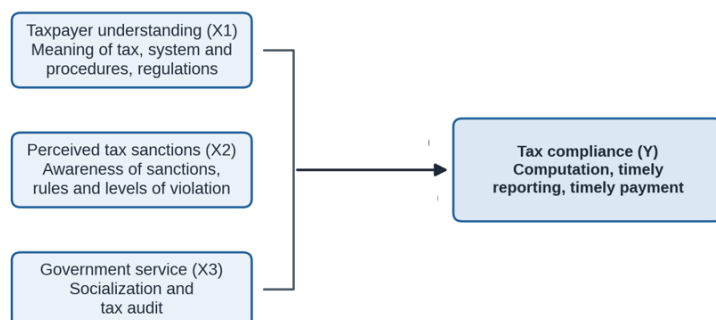


Figure 1. Conceptual Framework

Source: Authors' conceptualization.

Taken together, these strands suggest that understanding, perceived sanctions, and government service are jointly related to compliance, and that they may differ in strength. This study proposes two hypotheses. The first hypothesis (H1) states that taxpayer understanding, perceived tax sanctions, and government service jointly influence taxpayer compliance. The second hypothesis (H2) states that taxpayer understanding has the dominant influence on taxpayer compliance. The second hypothesis reflects an expectation, drawn from earlier Indonesian research on restaurant taxpayers in Surabaya and from the logic of self-assessment, that a taxpayer who understands the rules is the central actor of the system. Figure 1 presents the conceptual framework.

3. METHOD

3.1. Research Design

This study uses a quantitative explanatory design based on a cross-sectional survey. It tests hypotheses about the effect of three independent variables, namely taxpayer understanding (X1), perceived tax sanctions (X2), and government service (X3), on one dependent variable, namely taxpayer compliance (Y). The design is appropriate because the research questions concern the direction, strength, and relative size of relationships among measured perceptions, and because the data come from managers of cooperatives who were asked to report on their own organizations at a single point in time. The fieldwork was carried out in Bojonegoro, and the empirical results should be read in the institutional context of the specific period, which the limitations section discusses. The unit of analysis is the savings and loan cooperative, and the respondent is the person who manages it.

3.2. Population and Sample

The population consists of the managers of savings and loan cooperatives spread across the districts of Bojonegoro and registered with the Bojonegoro Office of Cooperatives, Small and Medium Enterprises. The population comprised 79 cooperatives. A population is a group of subjects or objects with shared characteristics that differ from those of other groups and to which the results of a study will be generalized. A sample is a part of that population. The sample was drawn with probability sampling, specifically simple random sampling. Each cooperative received a number and the sample was drawn by lottery, so that every member of the population had the same chance of selection. The required sample size was determined with the Slovin formula:

$$n = N / (1 + N e^2) = 79 / (1 + 79 \times 0.05^2) \approx 65 \dots \dots \dots (1)$$

where n is the sample size, N is the population size, and e is the tolerable margin of sampling error, set at 5 percent. The calculation gives 65.9, which was rounded down to 65 cooperatives. The distribution of questionnaires and the responses actually obtained are reported in the results section, because the usable number of responses turned out to be smaller than the calculated sample.

3.3. Operational Definitions and Measurement

An operational definition gives a variable meaning by specifying the activities or operations needed to measure it. Table 2 lists the four variables, their definitions, their indicators, and the number of questionnaire items used for each indicator. In total, the instrument contained 37 items, distributed as 14 items for compliance, 11 for understanding, 6 for perceived sanctions, and 6 for government service.

Table 2. Variables, Operational Definitions, and Indicators

Variable	Operational definition	Indicators (number of items)
Taxpayer understanding (X1)	A process, act, or way through which the taxpayer knows, understands, and comprehends tax information, including the meaning of tax, its importance, and the applicable tax system.	Meaning and importance of tax (4); tax system and procedures (4); understanding of tax regulations (3). Total 11 items.
Perceived tax sanctions (X2)	The taxpayer's response to, or direct reception of, the consequences (measures, penalties, and so on) that follow a violation of tax norms.	Awareness of sanctions (3); regulations and level of violation (3). Total 6 items.
Government service (X3)	The effort of the government, the Bojonegoro Barat Primary Tax Office, to create comfort and ease for taxpayers in fulfilling tax obligations through socialization and audits, so that taxpayers are satisfied.	Provision of socialization (3); tax audit (3). Total 6 items.
Taxpayer compliance (Y)	The obedience of the taxpayer in carrying out the applicable tax provisions.	Calculation of tax (4); timely reporting of tax owed (5); timely payment of tax owed (5). Total 14 items.

Source: Authors' research instrument.

All items were measured on a five-point interval type scale in a semantic differential format, in which respondents choose a position between a negative and a positive pole according to their perception. Scores of 1 and 2 indicate a low level of the attribute, a score of 3 indicates a moderate level, and scores of 4 and 5 indicate a high level. The instrument was developed by adapting and modifying items from earlier Indonesian studies of restaurant taxpayers and of individual taxpayers. For understanding, the items cover the meaning and importance of tax, the tax system and procedures, and the regulations. For perceived sanctions, they cover awareness of sanctions, and the rules and levels of violation. For government service, they cover the provision of socialization and the conduct of tax audits. For compliance, they cover the calculation of tax, the timely reporting of tax owed, and the timely payment of tax owed.

3.4. Data Collection

Two kinds of data were used. Primary data came from the answers of respondents, collected through a questionnaire distributed directly to the managers of the sampled cooperatives and supplemented by interviews. Secondary data came from the Bojonegoro Office of Cooperatives, Small and Medium Enterprises, from the Bojonegoro Barat Primary Tax Office, and from the official website of the Directorate General of Taxes. The fieldwork combined a literature study, which reviewed scientific materials related to taxation, with three field techniques. The first was observation, that is, direct observation of the taxpayers and of the cooperatives in Bojonegoro. The second was interviewing, that is, direct question and answer sessions with parties connected to the object of research. The third was the questionnaire, which gave respondents a list of statements to be scored. The questionnaires were the source of all quantitative results reported below.

3.5. Data Quality Tests

Three tests were applied to the data before hypothesis testing. Validity testing establishes how far the instrument measures what it is intended to measure. Each item was correlated with the total score of its scale, and the corrected item total correlation was compared with a critical value of 0.30, a widely used convention for satisfactory item quality. An item with a correlation above 0.30 was retained, and an item at or below 0.30 was removed. When an item was removed, the analysis was repeated on the remaining items, so that validity was assessed in successive rounds until every retained item passed. In each round only the weakest failing item was removed, because dropping several items at once could hide the fact that some of them would pass once the weakest one was gone.

Reliability testing assesses whether respondents answer consistently. Internal consistency was measured with Cronbach's alpha, and a scale was considered reliable when alpha exceeded 0.60. This threshold is lenient compared with the value of 0.70 often required, and the methodological literature cautions that no single alpha value has universal meaning and that alpha should be interpreted with the

number of items and the purpose of the instrument in mind (Taber, 2018). Normality of each variable was examined with the Kolmogorov-Smirnov test. The null hypothesis is that the data follow a normal distribution, so a significance level above 5 percent indicates that normality is not rejected.

3.6. Analysis Technique and Hypothesis Testing

The classical assumptions of regression were checked before the model was interpreted. Regression analysis requires that the residuals are not autocorrelated, that the predictors are not excessively collinear, and that the residual variance is constant. Autocorrelation refers to correlation between disturbances across time periods. Because the data are cross-sectional rather than a time series, an autocorrelation test was not relevant and was not performed. Multicollinearity was assessed with the tolerance and the variance inflation factor (VIF), with the customary cut off of a tolerance of 0.10, equivalent to a VIF of 10. This cut-off is a rule of thumb and the literature notes that the consequences of a given VIF depend on the sample and the purpose of the model (Kim, 2019). Heteroskedasticity was assessed with the Spearman rank correlation between the absolute value of the residuals and each predictor. A significance value above 0.05 indicates that heteroskedasticity is absent. Spearman coefficients were interpreted with attention to both their sign and their size, and not only their significance (Schober et al., 2018).

The hypotheses were tested with multiple linear regression, which describes the dependence of one variable on several independent variables, estimates the size and direction of each effect, and measures the closeness of the relationship. The general form of the model is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \dots\dots\dots (2)$$

where Y is taxpayer compliance, X1 is taxpayer understanding, X2 is perceived tax sanctions, X3 is government service, α is the constant, β_1 to β_3 are the regression coefficients, and ε is the disturbance term that represents other factors affecting Y that are not included in the model. Hypothesis H1 was tested with the F-test, which assesses the model fit. The null hypothesis is that all slope coefficients equal zero, and it is rejected when the significance value is below 0.05. The partial effect of each predictor was tested with the t-test at the same level of significance. Hypothesis H2 was tested by comparing the standardized regression coefficients, also called beta coefficients, which express the relative importance of each predictor on a common scale. The predictor with the largest standardized coefficient is considered dominant. The coefficient of determination (R^2) was used to express the share of the variation in compliance of the three predictors in the model. All tests used a significance level of 5 percent.

4. RESULTS AND DISCUSSION

4.1. Research Setting

The study was carried out in Bojonegoro, the capital of Bali Province. Bojonegoro developed rapidly as an administrative, trade, education, and small industry center, and it also serves as the main tourism gateway of the central part of Indonesia. The city was upgraded from an administrative city to a municipality with its own regional government through Law Number 1 of 1992, which was inaugurated by the Minister of Home Affairs on 27 February 1992. Since then, the municipal government has treated public service as a main task. The municipality established an electronic data processing office and an integrated service unit in 2002, declared 2006 the year of public service, and expanded the integrated service unit to cover 24 types of licenses handled together with several offices and agencies. It also built a spatial planning database and an official website through which development information is distributed and citizen feedback is collected. These efforts are relevant because government service is one of the three explanatory variables of this study, and they show that the local government of the research site was investing in the visible quality of service.

The cooperative sector and small and medium enterprises are a component of the local economy that the municipality has promoted actively since the monetary crisis, under the idea of a people's economy. The Office of Cooperatives, Small and Medium Enterprises was formed under Regional Regulation Number 13 of 2001 together with sixteen other offices. Local programs included a capital injection of 1.5 billion rupiah into the village credit institutions in 2006, mentoring for enterprises receiving revolving funds, training of cooperative human resources, and the preparation of a regional credit guarantee institution planned to operate in 2007. The city counted 582 small and medium

enterprises and 6,218 micro enterprises, and the health of cooperatives was assessed annually at the member meeting. Despite this support, cooperatives continued to face constraints of capital and of managerial capacity, which is the background against which their tax knowledge and tax behavior should be understood.

4.2. Response Rate and Data Preparation

Sixty-five questionnaires were distributed directly to the managers of savings and loan cooperatives in the districts of Bojonegoro. Table 3 shows the outcome. Forty-four questionnaires were returned and 21 were not. Of the returned questionnaires, four were not completed and were excluded, which left 40 usable questionnaires. The usable response rate was therefore 40 divided by 65, or 61.5 percent.

Table 3. Distribution and Return of Questionnaires

Description	Number	Share of distributed (%)
Questionnaires distributed	65	100.0
Questionnaires returned	44	67.7
Questionnaires not returned	21	32.3
Returned questionnaires that were incomplete	4	6.2
Usable questionnaires (usable response rate)	40	61.5

Source: Primary data, processed.

The number of usable responses is smaller than the sample of 65 obtained with the Slovin formula. The analysis was nevertheless continued because a minimum of about 30 observations is commonly recommended for correlational and regression analysis, and the sample of 40 exceeds this minimum. The smaller sample has two consequences for interpretation. It reduces statistical power, which makes it harder to detect modest effects, and it makes the estimates less stable. These points are taken up in the discussion of the understanding variable and in the limitations.

4.3. Descriptive Results

The distribution of answers is described variable by variable. Only the items that survived the validity tests, which are discussed in section 3.4, are shown. The average percentage in the last row of each table is the mean of the item percentages for each score, and the modal score indicates the typical position of the respondents.

Taxpayer understanding (X1)

Table 4 shows the distribution for the ten valid understanding items. The largest average share of answers, 47.8 percent, falls on the highest score of 5, followed by 34.5 percent on a score of 4. Taken together, 82.3 percent of answers fall in the high range, and only about 7 percent are in the low range of 1 and 2. Respondents were most confident about the basic meaning of tax, where 90 percent chose a score of 4 or 5, and about the role of the tax office in giving information about tax, where 87.5 percent did so. Understanding was weakest for the item on the self assessment system itself, where only 57.5 percent gave a high score and 15 percent gave a low score. This is a notable finding, because the self assessment system is the foundation of the Indonesian tax procedure. Managers know what tax is and appear informed about the tax office, but a sizable minority is less sure about the principle that makes them responsible for calculating and reporting their own tax.

Perceived tax sanctions (X2)

Table 5 presents the distribution of the six items on perceived sanctions. The average share on the highest score is 45.0 percent and the average share on a score of 4 is 33.3 percent, so that 78.3 percent of answers are high. Respondents most strongly agreed that sanctions are applied to promote discipline, with 82.5 percent giving a high score, and that the tax office does impose sanctions, also 82.5 percent. The weakest item concerned whether sanctions are in fact applied to taxpayers, where 62.5 percent gave a high score and 17.5 percent a low score. This gap is informative. Respondents hold the belief that sanctions exist and that they are meant to instill discipline, but a fraction of them doubt that sanctions are applied consistently in practice.

Table 4. Frequency Distribution of Taxpayer Understanding (X1)

No	Item	Score 1 n (%)	Score 2 n (%)	Score 3 n (%)	Score 4 n (%)	Score 5 n (%)
1	Understanding the meaning of tax (X1.1)	0 (0.0%)	0 (0.0%)	4 (10.0%)	13 (32.5%)	23 (57.5%)
2	Tax counselling activities by the tax office (X1.3)	1 (2.5%)	2 (5.0%)	1 (2.5%)	14 (35.0%)	22 (55.0%)
3	Public participation in paying tax (X1.4)	0 (0.0%)	2 (5.0%)	3 (7.5%)	14 (35.0%)	21 (52.5%)
4	The applicable tax system is the self-assessment system (X1.5)	2 (5.0%)	4 (10.0%)	11 (27.5%)	12 (30.0%)	11 (27.5%)
5	The tax office provides information about tax (X1.6)	0 (0.0%)	3 (7.5%)	2 (5.0%)	16 (40.0%)	19 (47.5%)
6	Information on filling in periodic and annual returns (X1.7)	0 (0.0%)	3 (7.5%)	4 (10.0%)	20 (50.0%)	13 (32.5%)
7	Bookkeeping to calculate and report tax (X1.8)	1 (2.5%)	1 (2.5%)	5 (12.5%)	16 (40.0%)	17 (42.5%)
8	Understanding of tax laws (X1.9)	1 (2.5%)	4 (10.0%)	2 (5.0%)	11 (27.5%)	22 (55.0%)
9	Understanding of the applicable regulations (X1.10)	0 (0.0%)	2 (5.0%)	6 (15.0%)	11 (27.5%)	21 (52.5%)
10	The tax office provides an understanding of tax laws (X1.11)	0 (0.0%)	1 (2.5%)	6 (15.0%)	11 (27.5%)	22 (55.0%)
Average share of answers		1.2%	5.5%	11.0%	34.5%	47.8%

Source: Primary data, processed. Item X1.2 was removed in the validity test.

Table 5. Frequency Distribution of Perceived Tax Sanctions (X2)

No	Item	Score 1 n (%)	Score 2 n (%)	Score 3 n (%)	Score 4 n (%)	Score 5 n (%)
1	Taxpayers fulfil their tax obligations (X2.1)	0 (0.0%)	3 (7.5%)	3 (7.5%)	15 (37.5%)	19 (47.5%)
2	Application of sanctions to taxpayers (X2.2)	2 (5.0%)	5 (12.5%)	8 (20.0%)	11 (27.5%)	14 (35.0%)
3	Sanctions are applied to promote discipline (X2.3)	1 (2.5%)	0 (0.0%)	6 (15.0%)	11 (27.5%)	22 (55.0%)
4	The tax office imposes sanctions (X2.4)	1 (2.5%)	3 (7.5%)	3 (7.5%)	15 (37.5%)	18 (45.0%)
5	Administrative sanctions are imposed on taxpayers (X2.5)	2 (5.0%)	3 (7.5%)	4 (10.0%)	15 (37.5%)	16 (40.0%)
6	Sanctions are proportionate to the violation (X2.6)	0 (0.0%)	2 (5.0%)	6 (15.0%)	13 (32.5%)	19 (47.5%)
Average share of answers		2.5%	6.7%	12.5%	33.3%	45.0%

Source: Primary data, processed.

Government service (X3)

The picture for government service, shown in [Table 6](#), is very different. The answers are spread almost evenly across the lower three scores, with average shares of 25.0, 24.4, and 26.9 percent for scores 1, 2, and 3, and only 4.4 percent for the highest score. The modal score is 3, which suggests that the government was seen as reasonably but not fully successful in serving taxpayers through socialization and audits. The distribution differs across the items. The item on sealing of business premises received a score of 1 from 62.5 percent of respondents. It means most cooperatives had no experience of this severe measure, and only 10 percent gave a score of 4 or 5. Objections to differences in calculation between the taxpayer and the tax office were also rarely experienced. In contrast, the item on the conduct of a tax audit by the tax office had the highest share of moderate and high scores, at 42.5 percent for a score of 4 or 5, and 37.5 percent for a score of 3. Service contact was therefore concentrated in audits, while other forms of contact were less common.

Table 6. Frequency Distribution of Government Service (X3)

No	Item	Score 1 n (%)	Score 2 n (%)	Score 3 n (%)	Score 4 n (%)	Score 5 n (%)
1	Objection to differences in tax calculation (X3.3)	8 (20.0%)	14 (35.0%)	10 (25.0%)	5 (12.5%)	3 (7.5%)
2	The tax office conducts audits (X3.4)	3 (7.5%)	5 (12.5%)	15 (37.5%)	15 (37.5%)	2 (5.0%)
3	Tax audit at the taxpayer's premises (X3.5)	4 (10.0%)	13 (32.5%)	14 (35.0%)	9 (22.5%)	0 (0.0%)
4	The tax office seals business premises (X3.6)	25 (62.5%)	7 (17.5%)	4 (10.0%)	2 (5.0%)	2 (5.0%)
Average share of answers		25.0%	24.4%	26.9%	19.4%	4.4%

Source: Primary data, processed. Items X3.1 and X3.2 were removed in the validity test.

Taxpayer compliance (Y)

Table 7 reports the distribution for the twelve valid compliance items. The modal score is 4, with an average share of 29.2 percent, followed by 22.3 percent on a score of 5 and 23.1 percent on a score of 3. Altogether 51.5 percent of the answers are in the high range and 25.4 percent are in the low range. The items on timely behavior show the strongest results. Regular payment before the due date was rated 4 or 5 by 82.5 percent of respondents, payment before the 30 day mark by 67.5 percent, and the timely submission of assessment letters by 62.5 percent. Items that describe the receipt of assessment letters, such as underpayment assessments, additional underpayment assessments, and reminder letters, were concentrated in the low scores, which suggests that most cooperatives had rarely been the object of such corrective actions. Overall, the descriptive profile shows a compliance level that is fairly high, though not uniformly so.

Table 7. Frequency Distribution of Taxpayer Compliance (Y)

No	Item	Score 1 n (%)	Score 2 n (%)	Score 3 n (%)	Score 4 n (%)	Score 5 n (%)
1	Receiving an underpayment assessment letter (Y1)	9 (22.5%)	7 (17.5%)	17 (42.5%)	5 (12.5%)	2 (5.0%)
2	Receiving an additional underpayment assessment letter (Y3)	12 (30.0%)	10 (25.0%)	10 (25.0%)	7 (17.5%)	1 (2.5%)
3	Timely submission of the assessment letter (Y5)	0 (0.0%)	4 (10.0%)	11 (27.5%)	18 (45.0%)	7 (17.5%)
4	Submission of the assessment letter (Y6)	4 (10.0%)	5 (12.5%)	7 (17.5%)	14 (35.0%)	10 (25.0%)
5	The tax office issues the assessment letter (Y7)	2 (5.0%)	5 (12.5%)	6 (15.0%)	16 (40.0%)	11 (27.5%)
6	Tax officials issue a new assessment letter (Y8)	3 (7.5%)	2 (5.0%)	11 (27.5%)	13 (32.5%)	11 (27.5%)
7	Settlement of the assessment letter (Y9)	1 (2.5%)	3 (7.5%)	11 (27.5%)	8 (20.0%)	17 (42.5%)
8	Receiving an overpayment assessment letter (Y10)	10 (25.0%)	4 (10.0%)	12 (30.0%)	12 (30.0%)	2 (5.0%)
9	Payment before the 30 day mark (Y11)	3 (7.5%)	2 (5.0%)	8 (20.0%)	15 (37.5%)	12 (30.0%)
10	Payment of the periodic tax (Y12)	1 (2.5%)	2 (5.0%)	11 (27.5%)	9 (22.5%)	17 (42.5%)
11	Receiving a reminder letter (Y13)	9 (22.5%)	19 (47.5%)	5 (12.5%)	6 (15.0%)	1 (2.5%)
12	Routine payment before the due date (Y14)	1 (2.5%)	4 (10.0%)	2 (5.0%)	17 (42.5%)	16 (40.0%)
Average share of answers		11.5%	14.0%	23.1%	29.2%	22.3%

Source: Primary data, processed. Items Y2 and Y4 were removed in the validity test.

Figure 2 summarizes the four distributions on a common scale. It shows that understanding and perceived sanctions are concentrated at the high end, that government service is concentrated at the low end, and that compliance lies in between and is centered on the upper middle scores. This contrast between very high perceived sanctions and understanding on the one hand, and low perceived service on the other, is a useful reference for the regression results that follow.



Figure 2. Average Distribution of Answers by Variable

Source: Primary data, processed. Bars show the average share of answers for each score.

4.4. Validity, Reliability, and Normality

The validity tests were performed in rounds, as described in the method section. Table 8 summarizes the outcome for each variable. For understanding, one round was needed after the first test showed that item X1.2 had a corrected item total correlation of 0.2345, below the critical value, and it was removed. For perceived sanctions, all six items were valid in the first round, with correlations from 0.5231 to 0.7787. For government service, three rounds were required. In the first round, the items X3.1, X3.2, and X3.6 failed, and X3.2, with the lowest correlation of 0.1432, was removed. In the second round, X3.1 (0.1189) and X3.6 (0.2905) failed, and X3.1 was removed. In the third round, all remaining items passed, including X3.6, whose correlation rose to 0.3764. For compliance, three rounds were also required. Item Y4 (0.1381) was removed first, and Y2 (0.2731 in the second round, after being marginally valid at 0.3031 in the first) second. The final instrument thus contains 32 of the original 37 items.

Table 8. Summary of the Item Validity Test

Variable	Items tested	Items removed (r at removal)	Items retained	Range of final r
Taxpayer understanding (X1)	11	X1.2 (0.2345)	10	0.3501 to 0.8068
Perceived tax sanctions (X2)	6	None	6	0.5231 to 0.7787
Government service (X3)	6	X3.2 (0.1432); X3.1 (0.1189)	4	0.3719 to 0.4945
Taxpayer compliance (Y)	14	Y4 (0.1381); Y2 (0.2731)	12	0.3892 to 0.7868
Total	37	5 items	32	

Source: Primary data, processed. Critical value of the corrected item total correlation: 0.30.

The reduction of the government service scale to four items deserves comment. Because the retained items describe audits, objections to calculations, and sealing, the final measure of government service reflects mainly the supervisory and enforcement side of service, and it probably captures the socialization side less fully. This shapes the interpretation of the service effect, as discussed below.

Table 9 shows the results of the reliability and normality tests. All four scales exceed the alpha threshold of 0.60. Understanding (0.8991), perceived sanctions (0.8451), and compliance (0.8916) show high internal consistency by conventional standards, while government service (0.6427) passes the threshold only narrowly, which is not surprising for a scale of four items after successive item removal (Taber, 2018). The Kolmogorov-Smirnov tests give significance values between 0.107 and 0.611, all above 0.05, so that the hypothesis of a normal distribution is not rejected for any variable.

Table 9. Results of the Reliability and Normality Tests

Variable	Cronbach's alpha	Critical value	Decision	Kolmogorov Smirnov Z	Sig.	Decision
Taxpayer understanding (X1)	0.8991	0.60	Reliable	1.189	0.118	Normal
Perceived tax sanctions (X2)	0.8451	0.60	Reliable	1.209	0.107	Normal
Government service (X3)	0.6427	0.60	Reliable	0.760	0.611	Normal
Taxpayer compliance (Y)	0.8916	0.60	Reliable	0.972	0.302	Normal

Source: Primary data, processed.

4.5. Classical Assumption Tests

Table 10 reports the tests for multicollinearity and heteroskedasticity. The variance inflation factors are 3.629 for understanding, 3.484 for perceived sanctions, and 1.210 for government service. All are well below the cut-off of 10, and the model therefore does not suffer from serious multicollinearity by the conventional criterion (Kim, 2019). The VIF values nevertheless carry substantive information. A VIF of 3.629 implies that about 72 percent of the variance of understanding is shared with the other two predictors, and a VIF of 3.484 implies that about 71 percent of the variance of perceived sanctions is shared with the other predictors, whereas the corresponding share for government service is only about 17 percent. Understanding and perceived sanctions are thus strongly related to each other, which is plausible because both reflect how well a taxpayer knows the rules and their consequences. This overlap matters for the interpretation of their separate coefficients.

The Spearman rank correlations between the absolute residuals and the predictors are negative and small to moderate, at 0.087 in absolute value for understanding, 0.165 for perceived sanctions, and 0.239 for government service, and none of them is significant (p values of 0.595, 0.310, and 0.137). The variance of the residuals is therefore not systematically related to any predictor, and heteroskedasticity is not detected (Schober et al., 2018). The tests of normality and of the classical assumptions support the use of ordinary least squares regression on these data.

Table 10. Results of the Multicollinearity and Heteroskedasticity Tests

Variable	VIF	Shared variance with other predictors	Spearman rank correlation	Sig.	Decision
Taxpayer understanding (X1)	3.629	72.4%	-0.087	0.595	No violation
Perceived tax sanctions (X2)	3.484	71.3%	-0.165	0.310	No violation
Government service (X3)	1.210	17.4%	-0.239	0.137	No violation

Source: Primary data, processed. Shared variance is calculated as 1 minus 1/VIF.

4.6. Multiple Linear Regression Results

Table 11 presents the estimated regression model. The estimated equation is:

$$Y = -0.861 + 0.157 X1 + 0.557 X2 + 0.502 X3 \dots \dots \dots (3)$$

All three coefficients are positive, which is the expected direction. If perceived sanctions rise by one unit while the other predictors are held constant, compliance rises by 0.557 units. A one unit increase in government service is associated with a rise of 0.502 in compliance, and a one unit increase in understanding is associated with a rise of only 0.157. The negative constant of 0.861 has no substantive meaning on its own, because it is the fitted value when all predictors equal zero, a value that lies outside the range of the five point scale on which the variables were measured. It should be read as the intercept that positions the regression plane and not as a prediction that compliance would be negative in the absence of understanding, sanctions, and service.

Table 11. Results of the Multiple Linear Regression

Variable	B	Standardized Beta	t	Sig.	Decision
Constant	-0.861	n/a	n/a	n/a	n/a
Taxpayer understanding (X1)	0.157	0.137	0.578	0.567	Not significant
Perceived tax sanctions (X2)	0.557	0.559	2.403	0.022	Significant
Government service (X3)	0.502	0.489	3.569	0.001	Significant

Source: Primary data, processed. Dependent variable: taxpayer compliance (Y). n = 40. R² = 0.441; F = 9.477; Sig. = 0.000.

4.7. Hypothesis Testing

Goodness of Model Fit

The F-test evaluates whether the regression model as a whole is useful. The calculated F value is 9.477 with a significance value of 0.000, which is below 0.05. The null hypothesis that all slopes are zero is rejected, and the alternative is accepted, so H1 is supported. The model is a good fit in the sense of the test. As a plausibility check, an R^2 of 0.441 with three predictors and 40 observations implies an F value of about 9.47 with 3 and 36 degrees of freedom, which matches the reported statistic. The coefficient of determination of 0.441 shows that understanding, perceived sanctions, and government service together explain 44.1 percent of the variation in compliance. The remaining 55.9 percent is explained by factors outside the model. One candidate is the quality of internal control in the cooperative, comprising the control environment, the accounting system, and control procedures, since sound internal control produces reliable bookkeeping, which is a precondition for calculating taxable income correctly and for filing a complete and timely return. Other candidates include tax rates, perceived fairness, trust in the tax office, and the moral attitude of the management, which the literature treats as major drivers of compliance (Alm, 2019; Kirchler et al., 2008).

Dominance of understanding

The partial effects are examined with the t-tests in Table 11. Understanding has a t value of 0.578 and a significance value of 0.567, which is above 0.05, so the null hypothesis is retained and understanding has no statistically significant partial effect on compliance when the other two variables are controlled. Perceived sanctions have a t value of 2.403 and a significance value of 0.022, and government service has a t value of 3.569 and a significance value of 0.001. Both are below 0.05, so each has a significant partial effect. The standardized coefficients, shown in Figure 3, are 0.137 for understanding, 0.559 for perceived sanctions, and 0.489 for government service. Perceived sanctions have the largest standardized coefficient and are therefore the dominant variable. Hypothesis 2, which expected understanding to be dominant, is not supported. Table 12 collects the decisions on the two hypotheses.

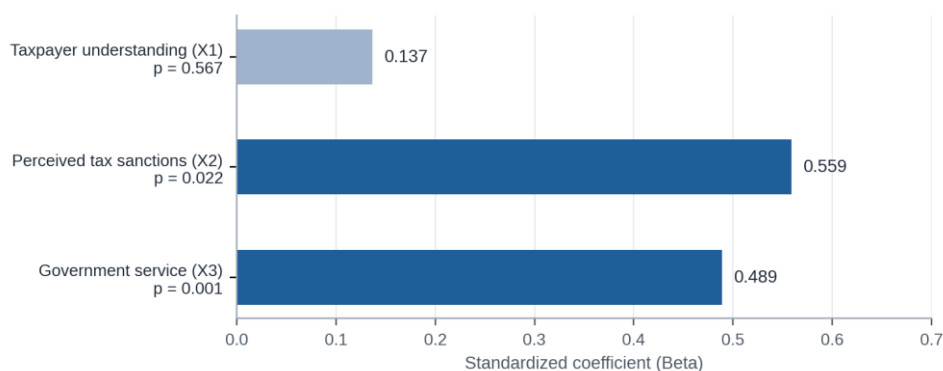


Figure 3. Standardized Regression Coefficients

Source: Primary data, processed.

Table 12. Summary of Hypothesis Testing

Hypothesis	Test	Result	Decision
H1: X1, X2, and X3 jointly influence Y	F test	F = 9.477; Sig. = 0.000; R^2 = 0.441	Supported
H2: X1 has the dominant influence on Y	Standardized Beta	Beta of X1 = 0.137, lower than X2 (0.559) and X3 (0.489)	Not supported
Partial effect of X1 on Y	t test	t = 0.578; Sig. = 0.567	Not significant
Partial effect of X2 on Y	t test	t = 2.403; Sig. = 0.022	Significant
Partial effect of X3 on Y	t test	t = 3.569; Sig. = 0.001	Significant

Source: Primary data, processed. Significance level 5 percent.

4.8. Discussion

The joint effect and what it means

The support for H1 shows that the three elements of the self-assessment system considered here, namely what taxpayers understand, what they expect if they violate the rules, and what the government does to serve and supervise them, are jointly related to compliance among savings and loan cooperatives. The result fits the broader view that compliance has several sources that operate together and that no single factor is sufficient (Alm, 2019; Slemrod, 2019). It also fits the view of the slippery slope framework that a tax administration achieves compliance through a combination of power, which is the capacity to detect and punish, and trust, which is the belief that the authority is fair and helpful (Kirchler et al., 2008; Gangl et al., 2020). The explained variance of 44.1 percent is respectable for a behavioral model estimated on perceptions, but it also shows that more than half of the variation is left to other factors, which reinforces the recommendation to broaden the model in future research.

Why perceived sanctions dominate

The dominance of perceived sanctions is the clearest result of the study. Consistent with attribution theory, a manager whose organization has an accurate picture of the penalties for late filing, underpayment, and misreporting has an external reason to comply, and this external reason is salient when the internal reasons are weak or uncertain (Kelley, 1973). The finding is also in line with the deterrence tradition, in which the perceived likelihood and severity of punishment are central determinants of the compliance decision (Allingham & Sandmo, 1972). Experimental evidence underlines the practical relevance of this channel, because communication about penalties and audit risk is a widely tested policy lever in real administrative settings (Dwenger et al., 2016; Bott et al., 2020; Gemmell & Ratto, 2018; Cranor et al., 2020). Meta analytic work on tax evasion experiments likewise identifies enforcement parameters as central to behavior (Alm & Malézieux, 2021). Studies of smaller enterprises in developing economies examine penalties as a key determinant next to knowledge, which is consistent with the pattern observed here (Oladipupo & Obazee, 2016; Swistak, 2016).

Two points qualify this reading. First, the descriptive results indicate that the perception of sanctions was already very high, with 78.3 percent of answers in the high range, while the belief that sanctions are actually applied was the weakest item. This suggests that the marginal value of the credibility of enforcement is larger than the value of further announcing that sanctions exist. When enforcement is seen to apply to everyone, including taxpayers who work in government, the deterrent message is strengthened, and when it is seen to be selective, the message weakens. Second, recent work warns that deterrence does not act alone. Research on tax morale and trust in Ethiopia argues that the compliance dynamics reach beyond deterrence, and evidence from an emerging economy examines tax knowledge together with trust in government as correlates of voluntary compliance (Adem & Jerene, 2026; Appiah et al., 2024). A policy that relies on sanctions alone can produce compliance out of fear, which is fragile if trust is low. The finding that government service is also significant and almost as strong as sanctions is consistent with this balanced reading.

The role of government service

Government service has a significant and substantial partial effect, with a coefficient of 0.502 and a standardized coefficient of 0.489. Following social influence theory, the interaction between the government and taxpayers, through socialization, supervision, and audits, creates an environment in which taxpayers monitor their own behavior against the expectations communicated by the authority (Cialdini & Goldstein, 2004). The result is also consistent with field evidence that the way a tax administration contacts taxpayers can change their behavior, for example through messages that draw on social norms (Hallsworth et al., 2017) and through the consequences of audits for later compliance (Kasper & Alm, 2022). In the developing country, studies of tax administration emphasize that the quality and technology of service delivery change the relationship between taxpayers and officials (Okunogbe & Santoro, 2023; Okunogbe & Pouliquen, 2022). For Indonesia, evidence on willingness to pay taxes in times of crisis highlights the role of the administration and of the way taxpayers view it (Khozen & Setyowati, 2023).

The interpretation of this result must take into account how service was measured. After item purification, the government service scale reflects mainly audits, objections to calculations, and sealing. Its strong association with compliance, therefore probably reflects the effect of supervision and of the presence of the tax office in the life of the taxpayer more than the effect of information campaigns. Descriptively, government service was the lowest rated variable, with 49.4 percent of answers in the low range. This combination of a low average and a strong slope suggests that there is considerable room for improvement. Where the tax office is present through audits and service, compliance is higher,

and where contact is thin, compliance is lower, so an expansion of well designed contact should yield gains. The direction of causality cannot be established from a cross sectional design. It is plausible that a tax office directs more audits and contact to organizations that are already known to be less compliant, which would bias the observed relationship toward the negative, or, conversely, that compliant cooperatives seek more service. Only longitudinal or experimental designs can separate these possibilities.

Why taxpayer understanding did not have a significant effect

The nonsignificant partial effect of understanding contradicts the expectation stated in H2 and departs from the emphasis that recent studies place on tax knowledge (Appiah et al., 2024; Nasution et al., 2020; Ratnawati et al., 2023). The result also does not follow the logic of social learning, in which understanding is expected to guide behavior (Bandura, 2001). Several considerations help to interpret it, and none of them is conclusive. The first is a ceiling effect. The distribution of understanding is heavily concentrated in the top two scores, with 82.3 percent of answers in that range, so there is little variation across cooperatives with which to explain differences in compliance. A variable with low variance has little capacity to predict another variable, even if it is substantively important.

The second consideration is the overlap between understanding and perceived sanctions. The VIF values imply that about 72 percent of the variance of understanding is shared with the other predictors, mostly with perceived sanctions. When the two are entered together, the coefficient of understanding measures only the part of understanding that is not shared with the perception of sanctions, and this remainder appears to have no independent association with compliance. This does not mean that understanding is unimportant. It is more likely that understanding operates through the perception of sanctions and through other mediating attitudes, so that its effect is absorbed by these variables. This reading is in line with studies that model knowledge alongside trust and attitudes (Appiah et al., 2024; Manrejo & Yulaeli, 2022) and with the theory of planned behavior, in which knowledge shapes attitudes and perceived control that then guide intentions and behavior (Ajzen, 1991). It suggests that a mediation model would be a useful extension.

The third consideration is sample size. With 40 observations and three correlated predictors, the test has limited power to detect a modest independent effect. The standardized coefficient of 0.137 is small, but the confidence interval around it is likely to be wide, and a larger sample might reveal a small positive effect. The fourth consideration is measurement. The understanding scale measures perceived understanding as reported by managers, which can overstate actual technical knowledge. Managers may answer that they understand tax because they are aware of its general purpose, while the practical ability to compute taxable income and to keep proper books is weaker. The evidence of a lower score on the self-assessment item and the observation of tax officials that bookkeeping remained incorrect at many taxpayers both point in this direction. A test of actual tax knowledge would provide a better measure than a self-reported perception.

Implications for the tax office, cooperatives, and policy

For the tax office, the results imply that enforcement credibility and service contact should be developed together. The dominant role of perceived sanctions supports consistent and visible enforcement of the law against violators, including those who work in government, because exemplary enforcement raises the perception that sanctions apply to everyone. The significant role of government service supports the extension of audits and supervision to small and less visible taxpayers, such as savings and loan cooperatives, and the strengthening of socialization that was weakly captured in this study. The low ratings for service, combined with its strong slope, indicate that the returns to improved service are likely to be high. In the wider literature, this combination corresponds to a tax administration that is both powerful and trusted (Kirchler et al., 2008; Gangl et al., 2020).

For cooperatives, the results indicate that tax compliance is not only an external demand. Because the qualitative evidence and the tax office data both point to weaknesses in bookkeeping, a cooperative that invests in an adequate accounting system and in training for its managers strengthens its capacity to comply, and it will also be less exposed to the penalties that respondents view as credible. For the wider national context, it is appropriate to view tax compliance as a form of contribution to the state and the community, which is consistent with the emphasis on civic duty and patriotism that recent studies identify as supportive of compliance among small enterprises (Gangl et al., 2016; Alshira'h et al., 2020). For research, the findings show that studies of tax compliance in small organizations should combine several determinants in one model, test mediation among them, and measure knowledge with objective tasks.

Limitations

Several limitations should be acknowledged. First, the data were collected in one city and from one type of taxpayer. Since then, Indonesian tax administration has changed substantially, including through the Harmonization of Tax Regulations Law of 2021 and the introduction of the Coretax administration system, and the results cannot be transferred directly to the present administrative environment. The value of the study lies in its evidence on the relative roles of understanding, sanctions, and service in a self-assessment setting and in the demonstration of the analytical sequence, and not in current parameter estimates. Second, the usable sample of 40 is smaller than the calculated sample of 65 and the response rate is 61.5 percent, so nonresponse may bias the results if the cooperatives that did not respond differ systematically from those that did. Third, all variables were measured by self-report from the same respondent, which raises the possibility of common method bias and of socially desirable answers on a topic as sensitive as compliance. Fourth, some compliance items describe the receipt of assessment or reminder letters, and the scoring direction of such items should be documented explicitly in future instruments, because a higher score may not always indicate higher compliance. Fifth, the government service scale was reduced to four items after purification, which narrows its content. Sixth, the cross-sectional design does not allow causal claims. Finally, autocorrelation was not tested, since the data are not a time series, and the analysis used ordinary least squares without testing alternative specifications such as mediation or robust estimation.

5. CONCLUSION

This study examined how taxpayer understanding, perceived tax sanctions, and government service influence the tax compliance of savings and loan cooperatives in Bojonegoro, and which of them dominates. A survey of cooperative managers produced 40 usable questionnaires from 65 distributed, a usable response rate of 61.5 percent. Successive validity tests reduced the instrument from 37 to 32 items, all four scales proved reliable, the data were normally distributed, and the regression model showed neither serious multicollinearity nor heteroskedasticity.

The regression results support the first hypothesis. Taxpayer understanding, perceived tax sanctions, and government service jointly influence compliance, with an F value of 9.477, a significance value of 0.000, and a coefficient of determination of 0.441, so that the model explains 44.1 percent of the variation in compliance. In the partial tests, perceived tax sanctions and government service have significant positive effects, while taxpayer understanding does not. Perceived tax sanctions have the largest standardized coefficient at 0.559, ahead of government service at 0.489 and understanding at 0.137. The second hypothesis, which expected understanding to be the dominant factor, is therefore not supported. Perceived sanctions are the dominant factor.

Three conclusions follow. First, compliance in a self-assessment system depends on the credibility of enforcement more than on the taxpayer's stated understanding of the rules. Second, the presence of the government through audits and supervision is strongly associated with compliance, even though it was rated low by respondents, which indicates a sizable potential for improvement. Third, understanding is not unimportant, but its influence in this sample is largely absorbed by the perception of sanctions, with which it shares about 72 percent of its variance, and its effect may be indirect. These conclusions apply to the cooperatives and to the period studied, and they should be tested again in the present administrative environment and with larger samples.

Recommendations

For the tax office, the findings recommend that enforcement be applied consistently and visibly, including to taxpayers who work in government, because the belief that sanctions are actually applied was the weakest element of the perceived sanctions scale, while perceived sanctions as a whole were the strongest correlate of compliance in this study. The tax office is also advised to extend audits, supervision, and service contact to small and less visible taxpayers, such as savings and loan cooperatives, and to strengthen socialization activities, which were only weakly captured by the final measure of service.

For cooperatives and their managers, the findings recommend investing in bookkeeping capacity and in practical training on calculating, paying, and reporting tax under the self-assessment system, because a correct understanding of the rules matters most when it is converted into sound records and timely filing. Cooperative associations and the local office of cooperatives could support this through joint training and templates.

For local and central policy makers, the findings suggest combining deterrence with service, in line with the view that compliance is highest when authorities are both powerful and trusted. Communication that presents tax payment as a contribution to the state and the community can support this approach. For future researchers, it is recommended to enlarge the sample and to include several districts or cities, to add variables such as internal control quality, perceived fairness, and trust in the tax office, to measure understanding with objective tests, to test mediation between understanding and perceived sanctions, and to use longitudinal or experimental designs that can identify causal effects.

Abbreviations

VIF: Variance Inflation Factor

R²: Coefficient of Determination

Beta: Standardized Regression Coefficient

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Availability of Data and Materials

The survey data were collected from managers of savings and loan cooperatives in Bojonegoro. Aggregated results are reported in the tables of this article, and item-level data are available from the corresponding author upon reasonable request. All sources are listed in the references.

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