ENTREPRENEURSHIP-SUPPORTING TAX MECHANISMS AND REGIONAL ECONOMIC DEVELOPMENT: EVIDENCE FROM UZBEKISTAN

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Dissertation topic: Improving tax mechanisms aimed at supporting entrepreneurship in ensuring the economic development of regions.

Abstract

Purpose: This study examines how tax mechanisms aimed at supporting entrepreneurship contribute to regional economic development in Uzbekistan, combining micro-level evidence on compliance behavior with macro-level evidence on national and regional accounts.

Design/methodology/approach: The study uses two complementary empirical components. First, a cross-sectional survey of 759 taxpayers and entrepreneurs (September–October 2023) is analyzed using descriptive statistics, correlation analysis, and multiple regression to test relationships between tax evasion and perceived tax fairness, tax morale, regulatory complexity, tax knowledge, and trust in tax authorities. Second, Stat.uz national accounts and regional accounts data (annual series through 2025) are cleaned to produce trend indicators and a region–year panel dataset for regression-ready analysis of regional gross regional product (GRP) dynamics.

Findings: Survey results indicate that tax morale and perceived tax fairness are associated with lower self-reported tax evasion, while perceived tax system complexity is associated with higher evasion. In the multivariate model, tax morale, tax fairness, and complexity remain statistically significant predictors, whereas tax knowledge and institutional trust do not show significant direct effects. Macro trends show evolving sectoral composition and changes in net taxes on products as a share of GDP; regional data reveal persistent interregional dispersion in GRP per capita and growth.

Research limitations/implications: The survey component is cross-sectional and relies on self-reported measures, limiting causal inference and raising the possibility of response bias. The regional macro analysis is constrained by data

availability on region-level tax burdens; future research could merge administrative tax records and firm-level outcomes.

Practical implications: The findings suggest that simplifying tax rules, strengthening procedural fairness, and investing in taxpayer engagement to raise tax morale are likely to support SME formalization. Complementary regional policies are needed to reduce disparities in economic performance.

Originality/value: The study contributes evidence from a post-transition economy by integrating behavioral determinants of compliance with national and regional accounts indicators to inform entrepreneurship-supporting tax reforms and regional development policy.

Keywords

Tax mechanisms; entrepreneurship; regional development; tax compliance; tax morale; Uzbekistan.

1. Introduction

Entrepreneurship is widely recognized as a central driver of economic growth, job creation, and regional development, particularly in emerging and transition economies. Small and medium-sized enterprises (SMEs) contribute to innovation, diversification, and local resilience, but their potential is shaped by the institutional and fiscal environment in which they operate.

In Uzbekistan, reforms over the past decade have aimed to stimulate private sector development, reduce administrative barriers, and modernize tax administration. Despite progress, informality remains sizable, limiting domestic revenue mobilization and weakening the social contract. Improving tax mechanisms that support entrepreneurship is therefore essential for sustainable regional development, especially where interregional disparities in output and income persist.

Tax mechanisms influence entrepreneurship through effective tax rates, compliance costs, and the predictability and perceived legitimacy of fiscal rules. While deterrence models emphasize audits and penalties, behavioral and institutional research highlights the importance of tax morale, perceived fairness, and trust in institutions. This paper integrates these perspectives and links micro-level compliance determinants to macro-level national and regional economic performance.

The study addresses three research questions: (1) Which tax-related factors most significantly influence entrepreneurial compliance and formalization in Uzbekistan? (2) How do entrepreneurship-supporting tax mechanisms relate to

regional economic development patterns? (3) What policy reforms can improve tax mechanisms to support entrepreneurship and regional growth?

The remainder of the paper is structured as follows. Section 2 reviews the literature and develops hypotheses. Section 3 presents the conceptual framework. Section 4 describes the methodology and data. Section 5 reports the empirical results. Section 6 discusses implications for policy and regional development. Section 7 concludes.

While the study integrates micro-level compliance determinants with macro-regional indicators, the primary empirical contribution lies in identifying behavioral and institutional mechanisms through which tax policy affects entrepreneurial formalization.

2. Literature Review and Hypothesis Development

Tax policy shapes entrepreneurial decisions by affecting business costs, expected returns, and the incentives to operate formally. Evidence suggests that simplified regimes and predictable tax administration can stimulate SME entry and growth, while excessive burdens and complexity encourage informality (Schneider & Enste, 2000; Saad, 2014). In transition economies, the institutional function of tax mechanisms—signaling fairness and legitimacy—may be especially important (Torgler, 2007).

2.1 Tax Knowledge

Tax knowledge captures understanding of tax rules and procedures necessary for compliance and financial decision-making. Higher knowledge can reduce unintentional non-compliance and facilitate formalization, particularly where rules change frequently (Jackson & Milliron, 1986; Saad, 2014).

2.2 Tax Morale

Tax morale reflects intrinsic motivation to comply, shaped by social norms and civic responsibility. In transition contexts, morale can sustain compliance beyond formal enforcement (Torgler, 2002; Kirchler, 2007).

2.3 Tax Fairness

Perceived fairness—distributive and procedural—strengthens voluntary compliance and the legitimacy of formal entrepreneurship. Perceptions of inequity or discretionary enforcement can increase evasion and discourage formality (Chau & Leung, 2009).

2.4 Trust in Tax Authorities and Government

Trust operates as a psychological contract: taxpayers are more willing to comply when institutions are perceived as transparent and accountable (Feld & Frey, 2007; Ortega et al., 2012).

2.5 Complexity of Tax Regulations

Complexity increases compliance costs and uncertainty and can create opportunities for misreporting, weakening compliance and entrepreneurial incentives (Milliron, 1985; Peter, 2009).

Accordingly, the study tests the following hypotheses:

H1: Higher tax knowledge is associated with lower tax evasion and stronger entrepreneurial formalization.

H2: Higher tax morale is associated with lower tax evasion and stronger entrepreneurial formalization.

H3: Higher perceived tax fairness is associated with lower tax evasion and stronger entrepreneurial compliance.

H4: Higher trust in tax authorities and government institutions is associated with lower tax evasion and stronger entrepreneurial formalization.

H5: Higher perceived tax system complexity is associated with higher tax evasion and weaker entrepreneurial formalization.

3. Conceptual Framework

Figure 1 presents the conceptual framework. Tax knowledge, tax morale, tax fairness, and trust are expected to reduce tax evasion and support formalization, while perceived complexity is expected to increase evasion. Formalization and compliance are linked to regional development through higher recorded output, investment, and employment.

Figure 1. Conceptual framework of the study.

Conceptual framework
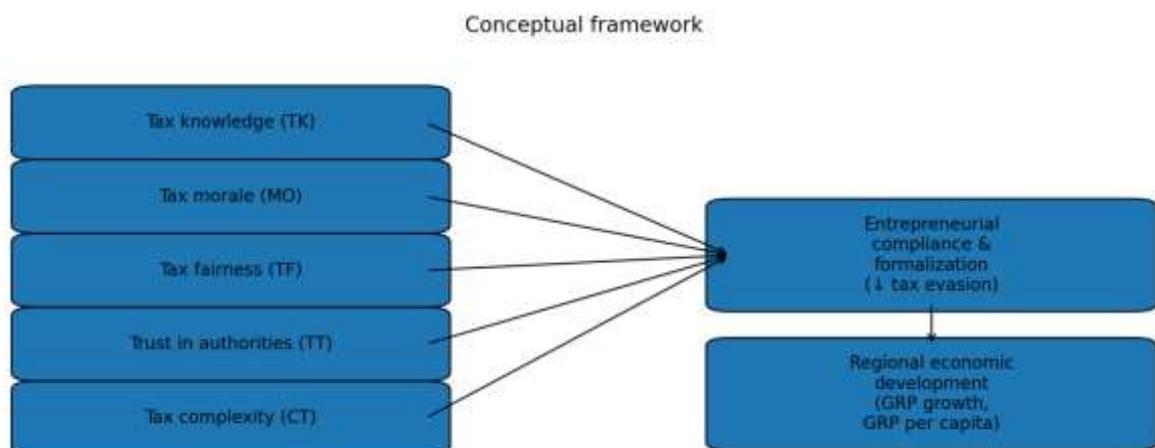
4. Methodology

4.1 Research Design

The study uses a quantitative approach with two empirical components. First, a micro-level survey-based model evaluates behavioral and institutional determinants of tax evasion among taxpayers and entrepreneurs. Second, macro-level national accounts and regional accounts data from Stat.uz are processed to

construct descriptive trends and a region–year panel dataset for regression-ready analysis of regional economic performance.

4.2 Survey Data: Population, Sampling, and Measures

The survey component targets registered taxpayers and entrepreneurs in Uzbekistan. Using an online questionnaire administered in September–October 2023, 759 valid responses were collected. Respondents were predominantly male (76%), with the largest age group 25–34 (37%); 61% held a bachelor's degree and SMEs were strongly represented.

All constructs were measured using five-point Likert scales (1 = strongly disagree; 5 = strongly agree). The dependent variable captured self-reported tax evasion tendencies (e.g., underreporting income or overstating deductions). Independent variables measured tax knowledge, perceived tax fairness, tax morale, trust in tax authorities, and perceived complexity. Cronbach's alpha values exceeded 0.70 for all constructs.

4.3 Macro Data: National and Regional Accounts

Macro indicators were compiled from Stat.uz national accounts (production method) and regional accounts datasets. National series include GDP at current and constant prices, gross value added (GVA) by industry, and net taxes on products. Regional series include GRP volume, GRP growth rates, and GRP per capita. The datasets were cleaned, harmonized, and transformed into analysis-ready tables and charts.

4.4 Empirical Strategy

The survey model estimates the association between tax evasion and its determinants using multiple regression:

$$TE = \beta_0 + \beta_1\, MO + \beta_2\, TF + \beta_3\, TK + \beta_4\, TT + \beta_5\, CT + \varepsilon$$

To connect entrepreneurship-supporting tax mechanisms with regional development, a fixed-effects panel specification is estimated using regional GRP growth as the outcome:

$$GRP\_Growth(i,t) = \alpha + \beta_1\, \ln(GRP\_pc(i,t{-}1)) + \beta_2\, NetTaxesShare(t) + \beta_3\, ServicesShare(t) + \beta_4\, GRP\_Growth(i,t{-}1) + \mu_i + \tau_t + \varepsilon(i,t)$$

where μ_i are region fixed effects and τ_t are year fixed effects. Robust (HC3) standard errors are reported.

5. Results

5.1 National Trends

Table 1 summarizes national trends for GDP growth, net taxes on products as a share of GDP, and sectoral shares of gross value added (GVA) for 2018–2025 based on Stat.uz national accounts.

Table 1. Uzbekistan: Selected national accounts indicators (2018–2025)

year	GDP rowth (%)	Net xes (% of DP)	Services are (% of VA)	Industr share (% of VA)	Agricult e share (% GVA)	Construct n share (% of VA)
2018	5,7	9,2	42,0	25,2	25,3	7,5
2019	6,8	7,3	41,9	27,2	22,8	8,1
2020	1,6	6,3	41,3	27,1	23,0	8,6
2021	8,2	6,0	41,8	27,0	22,8	8,4
2022	6,1	5,7	44,6	25,6	21,6	8,2
2023	6,3	4,6	46,7	25,0	20,6	7,7
2024	6,7	3,9	48,2	26,0	18,5	7,3
2025	7,7	4,4	48,6	26,8	17,3	7,3

Note. GDP growth is annual real GDP growth (production method). Sectoral shares are shares in total GVA. Net taxes share is net taxes on products divided by GDP (current prices). Source: Stat.uz national accounts datasets.

Figure 2 illustrates the time trend for GDP growth and the net taxes share of GDP.
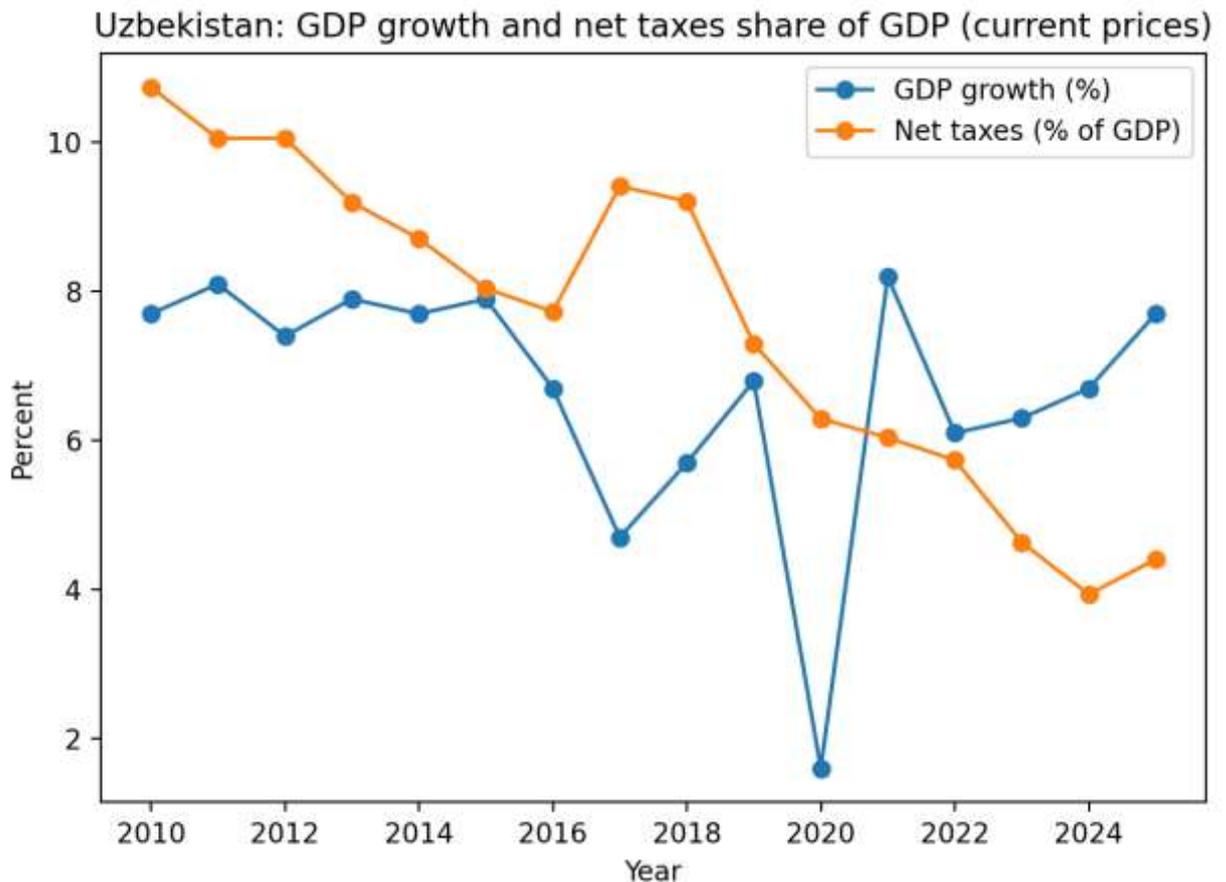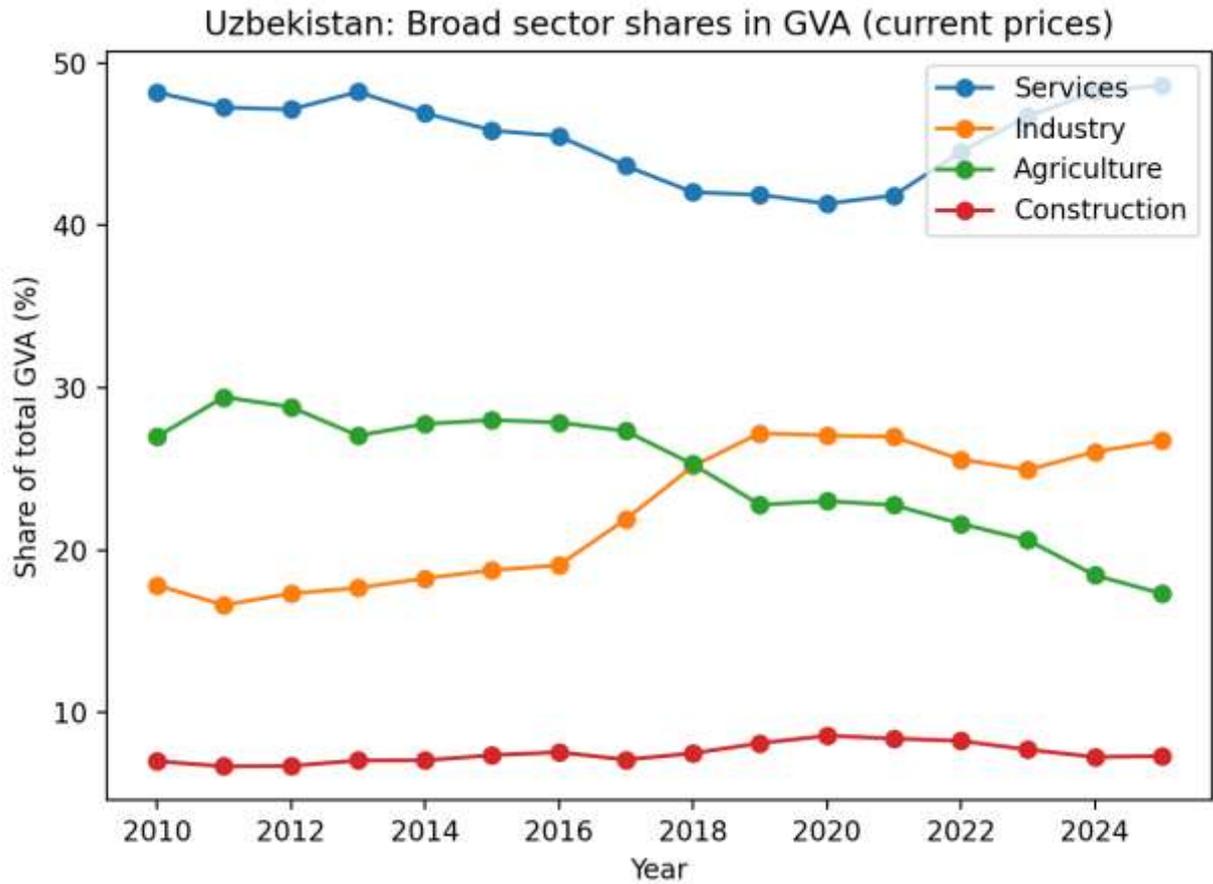
Figure 2. GDP growth and net taxes share of GDP.

Figure 3 shows changes in the sectoral structure of GVA.
Figure 3. Sectoral shares of gross value added.

Uzbekistan: Broad sector shares in GVA (current prices)

5.2 Regional Patterns

Regional accounts data reveal substantial dispersion in GRP per capita and growth rates across regions. Figure 4 provides a heatmap of regional GRP growth for 2018–2025, highlighting heterogeneity and cyclical fluctuations.

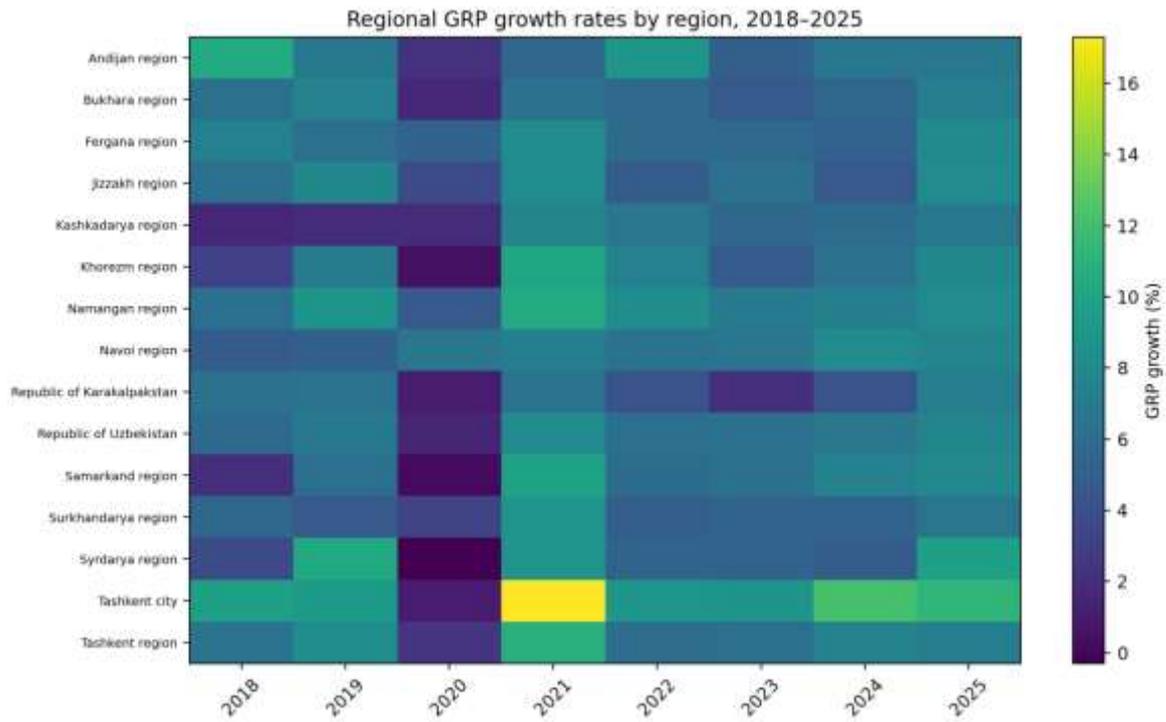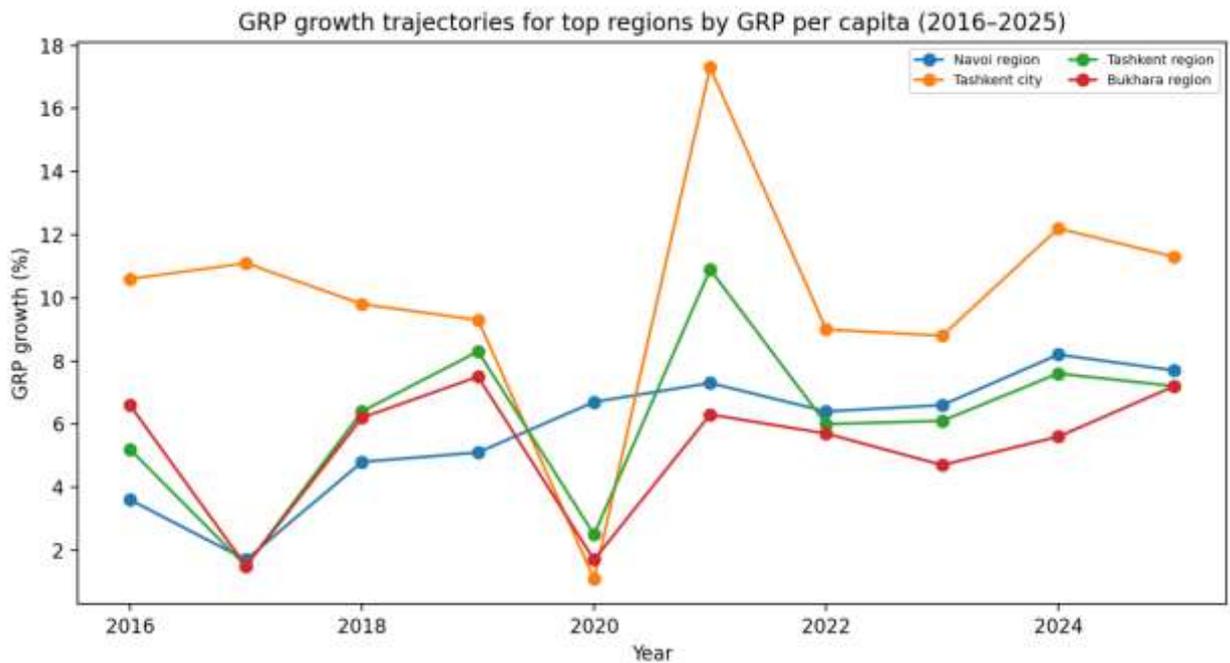Figure 4. Regional GRP growth rates by region, 2018–2025.

Figure 5 plots GRP growth trajectories for high-income regions (by GRP per capita).

Figure 5. GRP growth trajectories for selected high-income regions.

5.3 Regression-Ready Panel Estimates

Table 2 reports fixed-effects panel estimates linking regional GRP growth to lagged GRP per capita, national net taxes share of GDP, national services share of GVA, and lagged growth (robust standard errors). The results should be interpreted as associations rather than causal effects.

Table 2. Panel regression (region and year fixed effects): Dependent variable = GRP growth (%)

Predictor	B	SE (robust)	p-value
Lag ln(GRP per capita)	0.651	1.281	0.611
Net taxes (% of GDP)	0.842	0.667	0.207
Services share of GVA	-0.086	0.314	0.783
Lag GRP growth (%)	0.201	0.093	0.030

Note. N = 225 region-year observations (2011–2025), 15 regions. Robust HC3 standard errors. Year and region fixed effects included but not reported.

The lack of statistical significance for national tax structure variables suggests that regional growth dynamics are primarily shaped by region-specific structural characteristics rather than uniform national tax shares.

6. Discussion and Policy Implications

The combined evidence suggests that entrepreneurship-supporting tax mechanisms operate through both behavioral channels (tax morale and fairness) and administrative channels (complexity). Survey-based results indicate that intrinsic motivation and perceived procedural justice are closely linked to lower self-reported evasion, whereas complexity is linked to higher evasion. Macro data show that shifts in the structure of production and changes in net taxes on products coincide with periods of volatility, while regional accounts reveal persistent disparities in income and growth trajectories.

From a regional development perspective, the panel estimates show persistence in regional growth (the lagged GRP growth coefficient is positive and statistically significant), while the associations of lagged GRP per capita and national tax structure variables are not statistically significant in the parsimonious specification. This suggests that region-specific factors (captured by fixed effects) and national shocks (captured by year effects) may be more important in explaining regional growth differences than common national tax-share indicators alone. Incorporating region-level fiscal variables (e.g., tax revenues by region, SME tax regime uptake, or audit intensity) and firm-level outcomes would likely strengthen identification.

Policy implications follow directly from the dissertation topic. First, simplifying tax administration for SMEs—through stable rules, digital filing, pre-filled returns, and risk-based audits—can reduce compliance costs and support formalization. Second, strengthening procedural fairness (predictable enforcement, transparent guidance, and effective dispute resolution) can improve voluntary compliance and investment incentives. Third, behavioral policies to increase tax

morale—public communication linking taxes to services, taxpayer education, and service-oriented tax administration—can complement enforcement. Finally, regional policy packages should combine tax mechanisms with targeted SME support and investment climate improvements to reduce interregional disparities.

7. Conclusion

This study examined how tax mechanisms aimed at supporting entrepreneurship relate to compliance behavior and regional economic development in Uzbekistan. Using a survey of 759 taxpayers and entrepreneurs and cleaned Stat.uz national and regional accounts datasets through 2025, the analysis highlights the importance of perceived fairness, tax morale, and regulatory complexity for compliance and formalization. Macro and regional patterns indicate persistent dispersion in regional income and growth and suggest that richer fiscal microdata are needed to estimate region-specific effects of tax mechanisms on development outcomes.

Limitations include the cross-sectional and self-reported nature of the survey and the absence of region-level tax burden indicators in the macro datasets used here. Future work should integrate administrative tax records, region-level revenue and expenditure data, and firm-level performance indicators to evaluate how specific tax instruments (tax holidays, reduced rates, presumptive regimes, and digitalization) affect entrepreneurship and regional growth.

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