Tax morale and peer effects

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Abstract

Previous literature has focused on individual and institutional factors influencing tax morale. This study examines whether tax morale is also affected by peer group effects. Using Latinobarometro data from 2015 and 2023 for 17 Latin American countries, we found that social comparison and individual and institutional variables significantly explain tax morale in pooled and within-country regressions.

Keywords: tax morale, peer effects, Latinobarometro, taxation
JEL Classification Codes: H26; E62

1. Introduction

Macroeconomists agree that governments need tax revenue to finance public services but recognize that taxes can distort agent's behavior. For instance, income tax influences individuals' decisions between labor and leisure, known as income and substitution effects in microeconomics. Hence, governments face the challenge of tax disutility when collecting taxes. There are three approaches to improving tax collection: (i) increasing tax rates or creating new taxes, (ii) criminalizing tax evasion, and (iii) increasing tax morale.

Governments and academics have primarily focused on creating new taxes and criminalizing tax evasion, often overlooking the potential benefits of improving tax morale. Enhancing tax morale is more efficient than combatting evasion, as it requires less enforcement effort (OECD, 2019). Additionally, higher tax morale can reduce the shadow economy (Torgler & Schneider, 2009; Williams & Horodnic, 2017; Williams & Krasniqi, 2017), which is relatively large in Latin American countries, encompassing about half the labor force (International Labor Organization, 2021).

Tax morale is the intrinsic motivation to avoid tax fraud and evasion. Daude et al., (2013)

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show that (i) individual characteristics—such as age, religion, gender, employment status, and educational attainment—and (ii) institutional variables, including satisfaction with democracy, trust in government, and quality of public services explain tax morale in emerging economies. Similarly, the OECD (2019) includes these predictors along with sex, citizenship, and fiscal redistribution. McCulloch et al. (2021) categorize factors into five groups: (a) enforcement and penalties, (b) tax system knowledge and complexity, (c) social norms (including religiosity), (d) trust and fairness of the tax system, and (e) reciprocity in fiscal exchange or social contract. Other factors are enforcement, complexity, and trust; Bodea and LeBas (2016) showed that individuals with a positive view of the state's use of tax revenue have a higher tax morale. Additionally, Castañeda (2024) found that the perception of fairness in the tax system significantly affects people's views about tax compliance.

Luttmer and Singhal (2014) identify five non-mutually exclusive channels through which tax morale operates: (i) intrinsic motivation, which can be interpreted as the additional term of the utility function that comes from the fact of paying taxes; (ii) reciprocity, the additional utility that depends directly on the individual's views on the government and fairness of the tax system; (iii) peer effects and social influences, the additional utility that depends on the views or behaviors of others individuals; (ii) cultural factors, that may alter the willingness to pay taxes; and (v) information imperfections and deviations from utility maximization, such as misestimating the likelihood of getting caught evading taxes or loss aversion.

McCulloch et al. (2021) use religion as a proxy of social norms, but other values and informal social structures also govern people's behavior, such as "peer effects" or "social interaction effects". Bicchieri (2017) defines social norms as rules people choose to comply with if most people in their reference network follow them. This suggests that social comparison and peer influences can be crucial in shaping tax morale. Indeed, Bergman (2015) shows that law enforcement is insufficient to explain people's behavior toward paying taxes, as the exchange of information between peers allows individuals to understand the collective level of compliance, making them less likely to comply in the context of generalized non-compliance.

Many aspects of our lives are determined by the social norms we perceive within our comparison group. Several studies have documented the significant influence of peer effects on behaviors such as youth smoking (Nakajima, 2007), academic outcomes (Zimmerman, 2003) and even certain attitudes related to economic decision-making such as risk aversion (Ahern et al., 2014). Therefore, it seems quite reasonable to expect that perceptions of tax compliance may also be influenced by the behavior of others within the peer comparison group. Indeed, a natural field experiment Hallsworth et al. (2017) showed that informing about others' tax payment behaviors can accelerate tax collection as individuals adjust their behavior based on their beliefs about what others are doing. Similarly, Del Carpio (2013) showed that disclosing the real compliance rate positively relates to compliance. On the other hand, the field experiment conducted by Castro and Scartascini (2015) found no effect of messages that pretended to alter people's beliefs of other's compliance. Table 1 summarizes variables used in previous studies to explain tax morale.

Table 1. Summary of previous studies that explain tax morale

Variable	Author(s)	Effect on tax morale
Age	(Ali et al., 2013); (Daude et al., 2013)	(+)
Gender	(Marè et al., 2020); (Daude et al., 2013); (Torgler 2006); (OECD 2019)	(+) (-) For Women
Religiosity	(Marè et al., 2020); (Daude et al., 2013); (Torgler 2006);(OECD 2019)	(+)
Ethnicity	(McCulloch et al., 2021)	Significant differences between ethnic origins
Education	(Marè et al., 2020); (Daude et al., 2013); (OECD 2019)	(+)
Employment	(Marè et al., 2020); (Daude et al., 2013)	(-) For the self-employed and unemployed; (-) For part-timers and self-employed
Marital Status	(Marè et al., 2020); (Torgler 2006)	(+) For married people; (+) For married people and (-) For people living together
Perpection of corruption	(Marè et al., 2020); (Daude et al., 2013); (OECD 2019)	(-)
Satisfaction with democracy	(Daude et al., 2013)	(+)
Trust in public institutions	(Marè et al., 2020); (Daude et al., 2013); (OECD 2019)	(+)
Public services satisfaction	(Ali et al. 2013)	(+)
Above	(Acosta-González and Marcenaro-Gutiérrez, 2022); (Ferrer-i-Carbonell, 2005); (Oshio et al., 2011).	(Not studied for tax morale)
R	(Boyce et al., 2010)	(Not studied for tax morale)

Source: own elaboration

Our interest in using Latin America as the framework of our analysis relies on the fact that this region is characterized by relatively high reported levels of tax morale despite having high rates of tax evasion, particularly in corporate income tax and individual income tax (OECD,

2018, 2019). Moreover, the relatively low tax burden of the richest taxpayers in the region and the predominance of indirect taxation have limited the redistributive capacity of governments in the world's most unequal region of the world (Martínez-Vásquez & Vulocic, 2011). Besides, in Latin America, public goods are often considered inadequate, and people tend to substitute state-given goods and services for private ones, making them more likely to evade taxes (Castañeda, 2024). We expect that by exploring the relationship between tax morale and peer effects, we could shed some light on formulating new and more efficient tax-collecting policies in such a complicated context.

This paper examines whether tax morale in 17 Latin American countries is influenced by a constructed social reference group regarding attitudes toward taxation. We assume that individuals can identify their reference group and compare their attitudes towards taxation. To the best of our knowledge, this is the first study to explore peer effects on tax morale within the Latin American context. The closest studies to ours are those of Fortin et al. (2007), who found that perceived unfair taxation within a reference group can lead to higher tax evasion, while a fairer tax system enhances tax compliance and (Anderson, 2022), who analyzed the influence of peer effects and social influences on attitudes and responses to corruption in tax systems within the context of transition countries. Psychological factors linked with pro-social emotions, such as guilt and shame, and pro-social motivations, like altruism and fairness, influence taxpayers' compliance choices (Antoci et al., 2014). Despite the pecuniary cost of tax compliance, (Lubian & Zarri, 2011) found that tax morale positively affects individual happiness as the non-pecuniary benefits of compliance outweigh the costs.

2. Data and methods

We use data from the 2015 and 2023 Latinobarometro, an annual nationally representative opinion survey conducted across 17 Latin American countries[1]. The survey gathers opinions and attitudes on politics, economics, and social issues through face-to-face interviews. Figure 1 presents the data used in this paper: the average tax morale for each country in 2015 and 2023; on average, tax morale decreased in 14 out of 17 countries in 2023.

The model employed to analyze the data is an ordered probit model using tax morale as the dependent variable. Tax morale is measured through the question "On a scale of 1 to 10, where 10 means "not at all justifiable" and 1 means "totally justifiable", how justifiable do you believe it is to evade paying taxes?" The independent variables are categorized into two groups. The first group includes traditional individual variables used in tax morale literature, such as age, gender, religion, race, education, employment, marital status, and perceptions of corruption.[2] The second group comprises institutional variables: satisfaction with democracy,[3] trust in public institutions (TPI), and public services satisfaction (PSS), a measure of social contract. TPI and PSS were computed using principal component analysis[4]. The novelty of this paper

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[1] We omitted 2017, 2018, 2020 since Latinobarometro did not contain a tax morale question for these years.
[2] The variable corruption is a dummy that equals 1 if the respondent considers corruption to be the most important problem in the country, and 0 otherwise.
[3] Satisfaction with democracy is measured on a scale from 1 to, where 1 means "very satisfied" and 4 "not at all satisfied".
[4] TPI comprises information on the trust in public institutions: congress, police, judicial system, government, and

lies in the inclusion of two variables capturing peer or social interaction influences on tax morale. We construct a reference group for each individual in the sample and compare the tax morale distance between the individual and the reference group. For pooled country estimations, the reference group includes individuals of the same age bracket, gender, and country. In contrast, for within-country estimations, the reference group consists of individuals with similar age, gender, and region.

Figure 1. Tax morale (mean) in Latin American countries
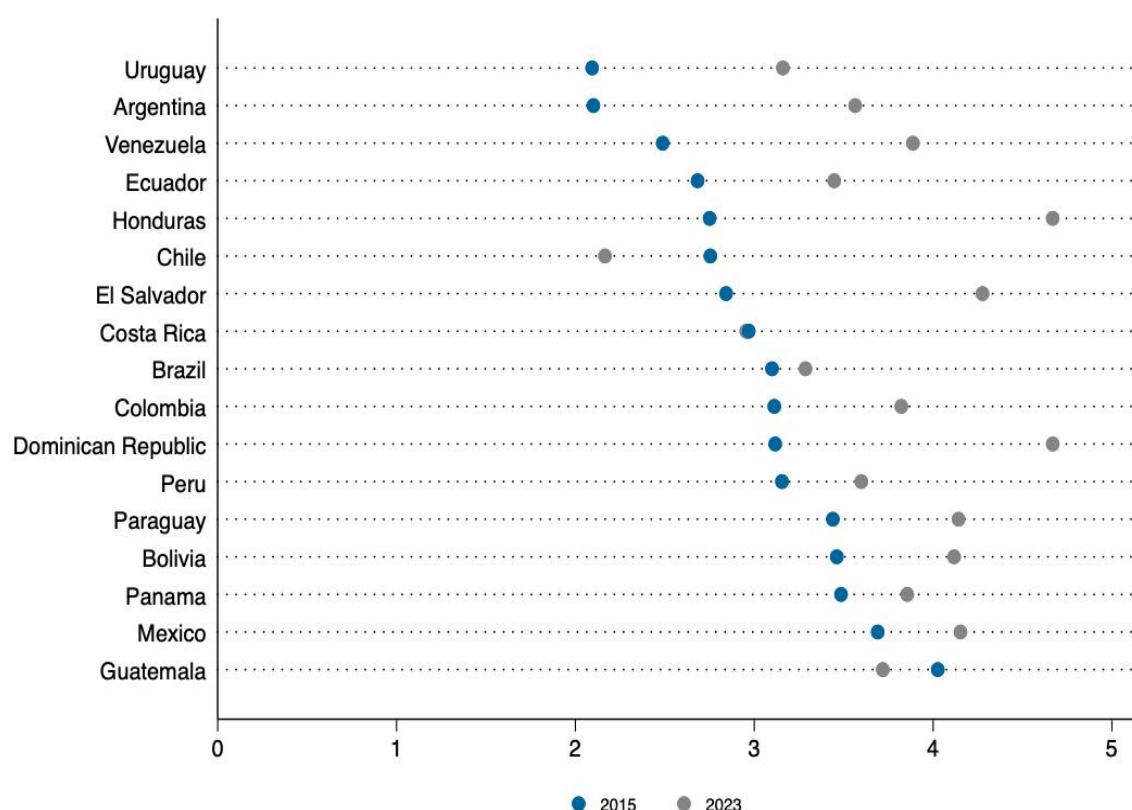
Source: own elaboration

The first measure, *above,* equals 1 if the individual's tax morale is above the average tax morale of their reference group, and 0 otherwise. This approach is similar to those used in the happiness literature to account for the effect of relative income on happiness (Acosta-González & Marcenaro-Gutiérrez, 2022; Ferrer-i-Carbonell, 2005; Oshio et al., 2011). A positive

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political parties. While PSS includes information on public services: public areas, roads and paving, public transport, garbage collection, and sewerage.

coefficient for *above* indicates that the reference group positively influences individual tax morale.

The second measure, *R*, is an index between 0 and 1 that captures an individual's relative position within their reference group. Based on Boyce et al. (2010), we propose the following metric for *R:*

$$R_i = \frac{i-1}{n-1} \tag{1}$$

where $(i-1)$ is the number of individuals with worse tax morale than the individual, and $n-1$ is the total number of people within the individual's reference group. This index allows us to assess how an individual's tax morale compares to others in their reference group. This index enables us to measure the effect of the relative tax morale level within the reference group on individual tax morale. In other words, a certain position on tax morale ranking within the comparison group affects individuals' perception of tax evasion.

3. Results

In Table 2, we present the pooled country estimations. Individual variables such as age, race, and education reveal coefficients with the expected sign and are statistically significant. Among the institutional variables, satisfaction with democracy and perceptions of corruption are statistically significant. While satisfaction with public services and trust in public institutions align with previous literature in terms of their expected direction, they were not statistically significant.

This paper advances beyond previous literature by incorporating social interaction effects to explain tax morale. The above measure shows a positive coefficient, indicating that comparison to the reference group positively influences an individual's tax morale. The second measure, *R*, also has a positive coefficient, suggesting that a better relative position with the reference group enhances individual tax morale. Both metrics of social comparison are statistically significant. Table 3 presents the within-country estimations, *above* and *R* are statistically significant across 17 Latin American countries. As a robustness check, Table 4 incorporates the dummy variable *income,* which equals 1 if the respondent considers his family income to be enough to cover his needs satisfactorily and 0 otherwise, to construct the reference group along with age bracket, gender, and country. This provides strong evidence that tax morale is associated with social interaction effects in pooled country analyses and within each country. However, given the cross-sectional nature of the data, the results should not be interpreted as causal effects.

We believe that this result could shed some light on our current understanding of tax morale, mainly how individuals form their attitudes based on the behavior of those around them. The decision to avoid paying taxes, like with many other life decisions, appears to be associated with not only individual and institutional factors but also the behavior and beliefs of peers.

Table 2. Ordered probit (pooled country estimations)

	2015		2023	
	Above	*R*	Above	*R*
Age	-0.0219***	-0.0480***	0.005***	0.018***
	(0.0020)	(0.0023)	(0.001)	(0.001)
Female	-0.0713	-0.0255	0.012	-0.005
	(0.0597)	(0.0669)	(0.022)	(0.023)
Religiosity	0.1078*	0.1957***	-0.062***	-0.164***
	(0.0572)	(0.0639)	(0.021)	(0.022)
Race (ref: white)				
Mestizo	0.0304	0.4378***	-0.092***	-0.352***
	(0.0686)	(0.0765)	(0.027)	(0.028)
Black	0.8351***	0.6672***	-0.205***	-0.393***
	(0.1410)	(0.1534)	(0.045)	(0.047)
Indigenous	0.4040***	1.1212***	-0.145***	-0.483***
	(0.1115)	(0.1308)	(0.037)	(0.039)
Mulato	0.3502***	0.5121***	-0.089*	-0.329***
	(0.1214)	(0.1364)	(0.051)	(0.053)
other	0.1994	0.5598**	-0.178**	-0.295***
	(0.2073)	(0.2204)	(0.071)	(0.075)
Education (ref: Tertiary)				
less than primary	0.4932***	0.6372***	-0.275***	-0.484***
	(0.1130)	(0.1270)	(0.040)	(0.042)
primary	0.1148	-0.0139	-0.114***	-0.215***
	(0.1062)	(0.1186)	(0.035)	(0.036)
secondary	-0.1518	0.0943	0.022	-0.015
	(0.1020)	(0.1140)	(0.033)	(0.034)
Employed	0.0511	0.0523	0.085***	0.079***
	(0.0610)	(0.0686)	(0.022)	(0.023)
Married	0.0344	-0.0331		
	(0.0583)	(0.0649)		
Satisfaction with democracy	0.0326	0.0852***	-0.004	-0.039***
	(0.0275)	(0.0310)	(0.013)	(0.014)
Corruption	0.1224	0.2064*	0.068*	-0.037
	(0.1089)	(0.1208)	(0.040)	(0.042)
TPI	-0.1247	-0.0052	0.086*	-0.010
	(0.1287)	(0.1429)	(0.051)	(0.053)
PSS	0.3344**	0.4125**		
	(0.1496)	(0.1671)		
Above	7.5809***		3.692***	
	(0.1835)		(0.040)	
R		19.9435***		11.154***
		(0.3866)		(0.103)
Observations	12,888	12,888	12,267	12,267
Pseudo R^2	0.337	0.344	0.315	0.410

Source: Own elaboration
Note: Standard errors in parentheses, * p<0.05, ** p<0.01, *** p<0.001.
Satisfaction with public services, marital status, were not available in Latinobarometro 2023

Table 3. Peer effects on tax morale (within-country estimations)

Country	Above		*R*	
	2015	2023	2015	2023
Argentina	2.585***	2.616***	4.970***	4.614***
	(0.289)	(0.2353)	(0.1530)	(0.1976)
Bolivia	2.541***	3.011***	5.348***	6.623***
	(0.2297)	(0.2544)	(0.2887)	(0.3146)
Brazil	2.024***	4.071***	2.758***	8.803***
	(0.1924)	(0.3699)	(0.1224)	(0.3144)
Chile	2.369***	2.168***	2.710***	4.200***
	(0.2481)	(0.2334)	(0.1199)	(0.1652)
Colombia	3.472***	3.809***	7.622***	7.584***
	(0.3144)	(0.3128)	(0.3376)	(0.3341)
Costa Rica	3.198***	7.462	6.377***	13.361***
	(0.3304)	(0.3960)	(0.2465)	(0.3818)
Dominican Republic	1.752***	3.918***	2.744***	11.900***
	(0.1487)	(0.3190)	(0.1031)	(0.4923)
Ecuador	2.235***	2.521***	3.011***	3.562***
	(0.2146)	(0.2493)	(0.1310)	(0.1657)
El Salvador	2.262***	4.323***	3.492***	8.042***
	(0.2160)	(0.3551)	(0.1396)	(0.3303)
Guatemala	2.075***	3.741***	2.804***	13.682***
	(0.1844)	(0.3104)	(0.1493)	(0.5140)
Honduras	1.963***	3.339***	3.741***	7.939***
	(0.1995)	(0.2934)	(0.1522)	(0.3682)
Mexico	1.756***	3.067***	2.412***	7.803***
	(0.1438)	(0.2624)	(0.1170)	(0.3559)
Panama	2.742***	8.711	4.879***	15.259***
	(0.2673)	(0.3673)	(0.2048)	(0.5153)
Paraguay	2.553***	2.433***	4.660***	4.050***
	(0.2445)	(0.2200)	(0.2074)	(0.1988)
Peru	2.414***	2.529***	3.966***	4.377***
	(0.2184)	(0.2220)	(0.2197)	(0.1990)
Uruguay	2.062***	2.051***	2.829***	3.069***
	(0.2076)	(0.1999)	(0.0922)	(0.1378)
Venezuela	3.096***	3.174***	7.781***	7.176***
	(0.3136)	(0.2807)	(0.3181)	(0.3114)

Source: own elaboration

Note: Pseudo R^2 in parenthesis. The control variables were the same from Table 1

Table 4. Ordered probit with the variable *income* within the definition of the reference groups for 2023

Variables	Individual Variables	Institutional variables	Above	R
Age	0.0056***	0.0056***	0.0031***	0.0160***
	(0.0006)	(0.0006)	(0.0007)	(0.0007)
Female	0.0092	0.0139	0.0277	0.0190
	(0.0206)	(0.0207)	(0.0220)	(0.0227)
Religiosity	-0.0332*	-0.0304	-0.0626***	-0.1304***
	(0.0200)	(0.0200)	(0.0213)	(0.0220)
Race (ref: white)				
Mestizo	-0.0049	-0.0174	-0.0886***	-0.2775***
	(0.0250)	(0.0252)	(0.0270)	(0.0277)
Black	-0.1788***	-0.1822***	-0.2103***	-0.3518***
	(0.0429)	(0.0429)	(0.0455)	(0.0469)
Indigenous	-0.1565***	-0.1630***	-0.1730***	-0.4317***
	(0.0346)	(0.0346)	(0.0367)	(0.0383)
Mulato	-0.0543	-0.0577	-0.1768***	-0.3136***
	(0.0478)	(0.0478)	(0.0511)	(0.0525)
other	-0.1426**	-0.1482**	-0.2004***	-0.3056***
	(0.0669)	(0.0669)	(0.0709)	(0.0739)
Education (ref: Tertiary)				
less than primary	-0.4658***	-0.4568***	-0.3055***	-0.5470***
	(0.0373)	(0.0374)	(0.0398)	(0.0413)
primary	-0.3259***	-0.3161***	-0.1658***	-0.3147***
	(0.0325)	(0.0326)	(0.0349)	(0.0358)
secondary	-0.1498***	-0.1451***	0.0023	-0.0849**
	(0.0308)	(0.0308)	(0.0330)	(0.0338)
Employed	0.0647***	0.0620***	0.0555**	0.1339***
	(0.0210)	(0.0211)	(0.0224)	(0.0232)
Satisfaction with democracy		-0.0046	0.0045	-0.0394***
		(0.0124)	(0.0131)	(0.0136)
Corruption		0.1417***	0.0893**	0.0298
		(0.0371)	(0.0398)	(0.0410)
TPI		0.1359***	0.0465	-0.0499
		(0.0477)	(0.0509)	(0.0527)
Above			3.5264***	
			(0.0375)	
R				9.0983***
				(0.0871)
Observations	12, 140	12, 140	12, 140	12,139
Pseudo R^2	0.0073	0.0079	0.3079	0.3516

Source: Own elaboration
*Note: Standard errors in parentheses, * p<0.05, ** p<0.01, *** p<0.001.* Satisfaction with public services and marital status was not available in Latinobarometro 2023. The question used to construct the *income* variable used in the definition of the reference groups was only available for the 2023 survey

4. Concluding remarks

In this paper, we confirmed the findings of previous studies regarding the individual and institutional factors that drive tax morale. Additionally, we found that social interaction influences tax morale. Specifically, our study shows that tax morale is shaped by comparison to others and one's position within the reference group, aligning with Hallsworth et al., (2017), who experimentally demonstrated that people base their tax behavior on their perceptions of others' actions.

The fact that tax morale is associated with peer group beliefs suggests potential strategies for policymakers. Designing tax morale-enhancing campaigns that emphasize the penalties associated with tax evasion and the social shame of not paying taxes when others do could be a more cost-effective method to promote higher tax compliance rates.

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