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The Determinants of Tax Morale in Pakistan

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The Determinants of Tax Morale in Pakistan

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Abstract

This paper examines what shapes taxpayers' attitudes towards tax compliance – otherwise known as tax morale – in Pakistan, a country that has struggled with low tax effort over the past decade. We exploit novel survey data collected in 2014 during a survey of individual taxpayers for the Federal Board of Revenue of Pakistan, which allows us to offer the first study of determinants of tax morale in Pakistan. These determinants are estimated using a binary probit regression model. Our results are, generally, in line with the findings of the modern empirical literature of tax morale in other countries. Overall, groups with lower labor force participation rates have more positive attitudes towards tax compliance in Pakistan. Educated respondents have higher tax morale in comparison to the illiterate but only those with very low or very high attainment levels have higher tax morale with respect to bachelor's degree holders. In addition, metropolitan areas which are the largest population centers, are industrialized and seats of government have significantly high tax morale. We show that females have significantly higher tax morale than males. However, their attitudes towards tax compliance drastically worsen with the passage of time to the extent that elderly males have higher tax morale than elderly females. Relevant from the perspective of the tax administration in Pakistan, these findings imply potentially substantial gains from increasing female labor force participation rates. More generally, addressing the current failures of tax administration and dealing with the horizontal inequity resulting from administrative weaknesses is likely to contribute materially to improving voluntary compliance.

Keywords: Tax Morale, Tax Compliance, Social Norms, Social Interactions, Pakistan

JEL Classification: C380, H260, H730, K420

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1. Introduction

Pakistan with its 200 million population has exhibited an ongoing struggle with low tax collection. With tax collections at 11 percent of GDP in 2015, Pakistan has a low tax effort for its current level of development (IMF, 2016) and its needs in public infrastructure and basic services. Moreover, its tax collection effort, as a percent of GDP, has seen a downward trend for most of the last two decades. At present it is 1.4 percentage points below its peak level of collection at 12.6 percent of GDP in 1996 (IMF, 2016). Low revenue collections have been reflected in the large federal government deficit which has fluctuated around 6 per cent of GDP over the past decade. Large expenditures needs in the shape of public expenditures on major improvements in service delivery and public infrastructure remain on the planning horizon as the country aims to pursue its developmental agenda. Improving tax collection therefore has remained a key item on the policy agenda of different Pakistani governments but despite its immanence not much has being accomplished so far.

Other than a slightly higher than average reliance on “taxes on international trade” and an extensive list of excisable commodities, Pakistan’s tax structure is not very different from the international norm nor at great variance with comparable Asian countries. The low tax to GDP ratio largely arises out of the low tax effort exerted by the Pakistani tax authority (Martinez-Vazquez and Cyan, 2015), characterized by putative corruption and administrative weaknesses.¹ At the same time, the tax base has not grown significantly over time, indicating low levels of voluntary compliance. What shapes tax morale in Pakistan, the main theme of this paper, and what prevents people from voluntarily complying with their tax obligations, thus, comes up as an important question with wide ranging implications for tax policy and administration reform in Pakistan.

¹ More conceptually, Pakistan’s low tax effort may be explained by the presence of corruption its tax administration system and the low voice and accountability of its political system (Bird, Martinez-Vazquez, and Torgler, 2008).

At the outset, it should be pertinent to mention that Pakistan faces a number of structural challenges to its tax and revenue collection systems. To some extent, these are the cumulative results of repeated past failures at reform that have taken place since 2004. Potentially, these features of the tax system could also be affecting tax morale. We briefly recount these to place our discussion of tax morale in the current institutional perspective. First, the bases of the most important taxes, namely, corporate and personal income tax, and general sales tax (GST) remain narrow. However, a broader income tax net in developing economies would not necessarily yield larger tax revenues and cannot be reliably used for re-distributive purposes due to corruption (Bird and Zolt, 2005). Second, high levels of tax evasion, estimated at 7 per cent of GDP, are also significant contributors to the tax revenue shortfalls (Kemal, 2003) while also creating severe horizontal inequities between compliant taxpayers and tax evaders, which undermines tax morale. Third, Pakistan continues to experience difficulties recovering the revenue losses incurred with customs reform as indicated by the low buoyancy rate (below unity overall) of the tax system. Revenue variability of the most important tax instruments is also low which reduces the ability of the tax system to operate as a built-in stabilizer over the business cycle. Income taxes and the GST (value-added tax) are relatively elastic (1.2 and 1.9, respectively) but the excise and international trade taxes are extremely inelastic (Martinez-Vazquez and Cyan, 2015). Fourth, Pakistan has a large underground economy, which Kemal (2003) estimates around 35-40 per cent of GDP; this, in turn, translates into a small number of registered taxpayers. To make things worse, the Federal Board of Revenue (FBR), the country's primary tax collection agency, has been incapable of collecting from the "hard to tax" and, largely, relies on "easier" tax handles instead (Alm, Martinez-Vazquez, and Schneider, 2004). Gangl, Kirchler, Lorenz, and Torgler (2015) examine non-filing dynamics in Pakistan by comparing rich, self-employed individuals who do not file tax to tax-filers with similar socio-economic characteristics. They find that less knowledge of taxpayers' rights and a perception of widespread corruption in the tax administration are significant predictors of tax non-filing behavior. Sixth, efforts in improving tax revenues by the federal government have not been complemented by those made by the provincial governments. The latter prefer larger revenue sharing and transfers from the federal government than directly taxing their own constituencies, further contributing to revenue shortfalls and negative attitudes towards taxation. Seventh, tax administration in Pakistan has been performing below par. High levels of corruption have weakened the effectiveness of field

audits and lowered yields of withholding on wages and salaries.² Despite their proven ineffectiveness in bringing tax evaders into the tax net and their demoralizing effect to tax compliers, tax amnesties continue to be popular with policy-makers in Pakistan. Favorable tax treatment of special interest groups continue to cause substantial distortions in Pakistan's economy and create windows of opportunity for corruption and tax evasion. Extensive withholding schemes are a dominant feature of the tax structure in Pakistan but often apply as final, as opposed to adjustable, and thus, work in a discriminatory fashion. Lastly, as Alm and Khan (2015) find, businesses are subject to significant differences in marginal effective rates of taxation (METR), which has led to the misallocation of resources and the slowing down of Pakistan's rate of economic growth.

An extensive literature has developed analyzing how differences in tax morale -defined as the intrinsic willingness to comply with tax obligations- across countries can explain differences in tax compliance (Torgler, 2007). However, analysis of this element of the compliance puzzle in the case of Pakistan has been absent to this day due to the lack of data. Country-specific tax morale analysis has not been possible until now because standard datasets the empirical literature relies on such as the World Values Survey (WVS) do not contain information on Pakistan. The only information source available until now, the AsiaBarometer, only asks survey participants in Pakistan whether they "would like to see more or less government spending if it requires a tax increase," but this highlights perceptions about public goods rather than tax compliance.

In this paper we exploit a novel survey of tax attitudes in Pakistan based on a nationally-representative sample of 2,562 individuals. The nature of the survey data safeguards our estimates from endogeneity bias stemming from correlation of perception errors in the data generating process. Our empirical approach replicates standard country-specific studies of the determinants of tax morale, i.e., it estimates how demographic, socio-economic, and behavioral factors affect tax morale in Pakistan.

By bridging the informational gap for Pakistan, this paper makes a threefold contribution. First, we present the first recent estimates of what determines tax morale in Pakistan, adding an essential piece to the empirical literature. Second, with respect to the previous literature our

² This is of course a general problem in many countries. For example, Alm, Martinez-Vazquez, and McClellan (2014) provide evidence from the World Enterprise Survey and the Business Environment and Enterprise Performance Survey that corrupt tax administration exacerbates underreporting at the firm level.

estimates are not subject to endogeneity bias from perception errors' correlation. By blocking a potential avenue of endogeneity, we are able to contribute a critical comparison with earlier findings on comparable countries to Pakistan that may be subject to endogeneity bias. Third, our rich dataset permits deep, within-group heterogeneity analysis of non-pecuniary factors of tax morale that is also unique to the previous empirical literature on tax morale.

The rest of the paper is organized as follows. Section 2 briefly reviews the theoretical and empirical literature on the determinants of tax morale. Section 3 discusses the data and the methodology that has emerged as the canonical methodology in the empirical literature. Section 4 presents the baseline results and, further, explores heterogeneous effects of important predictors of tax morale across sub-groups of the respondent population. Section 5 concludes.

2. Literature on the Determinants of Tax Morale

Theoretical foundations

The theoretical literature on the determinants of tax morale posits that individuals' attitudes towards tax compliance are determined by pecuniary and non-pecuniary behavioral factors. The seminal paper on tax compliance comes from Allingham and Sandmo (1972) who applied the Becker's (1968) expected utility model of crime to tax-evasion. This work highlighted the importance of pecuniary factors for compliance such as penalties and the audit probability taxpayers face. However, the high variability in attitudes towards taxation internationally reveals that other important behavioral factors are actually at play.³

Empirical Evidence

There is extensive evidence from country-specific survey data that directly ask individuals about attitudes towards tax evasion. Torgler (2011) and Luttmer and Singhal (2014) provide excellent

³ Some studies have predicted tax compliance given enforcement and, then, deduced the existence of tax morale from the higher than expected observed levels of tax compliance. Alm, McClelland, and Schulze (1992) calibrated the Allingham and Sandmo model using US data to find much lower predicted rates of tax compliance in comparison to the actually observed ones. This type of evidence has been interpreted as raising the hypothesis that attitudes towards tax compliance are influenced by other non-pecuniary factors that are not captured in conventional Allingham and Sandmo model. The instance of tax morale has also been documented in settings of minimal tax enforcement but high tax compliance. For example, Dwenger, Kleven, Rasul, and Rincke (2014) find compliance to the German church tax even if the latter is not enforced. Under a common enforcement environment, variation in compliance can be linked to differences in tax morale. In addition, DeBacker, Heim, and Tran (2012) find that US firms owned by individuals coming from more corrupt countries are less compliant.

reviews of this literature. Here we first highlight some of the most recent findings pertaining to the role of institutions on tax morale, especially in developing countries.

Torgler (2005) finds for Latin America an important association between tax morale and trust in the government, the rule of law, and a pro democratic attitude. He also reports a significant negative correlation between tax morale and the size of the shadow economy measured as the percent of informal employment in the total population. In the same fashion, respondents who knew others or have heard of practicing tax avoidance are also negatively associated with tax morale. In addition, corruption and an unfair tax system are important reasons for tax evasion because individuals who perceive the exchange between paid tax and public goods is equitable comply more. Frey (1997) suggests that large financial penalties may be due to the government's distrust to taxpayers which makes compliant behavior less appealing that, in turn, worsens tax morale. More recently, Daude and Melguizo (2010) confirm that satisfaction with the government and with public services is an important contributor to tax compliant attitude in Latin America and the Caribbean. Alm, Martinez-Vazquez, and Torgler (2006) underscore the importance of trust in the state and quality of governance for high tax morale in Russia. In the context of Africa, Levi and Sacks (2009) find that government effectiveness and procedural justice are key contributors to high tax morale. The OECD (2013) finds that satisfaction with public services and expenditures and trust in government can positively influence tax morale. Leonardo and Martinez-Vazquez (2015) show that trust in administrative government institutions positively influences tax morale. Their analysis focuses on government functions that deliver public goods and services to taxpayers otherwise known as output organizations of the government. Litina and Palivos (2016) use two waves of the World Values Survey and the General Social Survey to find a negative and significant relationship between individual attitudes of tax evasion and the perceived level of political corruption in 45 countries, but the list does not include Pakistan.

In addition, there is considerable evidence that demographic and socio-economic characteristics also affect tax morale. A stylized fact is that seniority in age leads to less tax evasion and higher tax morale [Torgler (2004), OECD (2013) for Asia; Hug and Sporri (2011) for Eastern Europe; Torgler (2005), Gaviria (2007), Daude and Melguizo (2010) for Latin America]. Daude and Melguizo (2010) for Latin America and Torgler (2004) for India also highlight religiosity as an

important identifier of positive attitudes towards tax compliance. The effect of gender on tax morale is still an open-ended question as no consensus exists in the empirical findings (Levi and Sacks, 2009; D'Arcy, 2011 for Africa; Torgler, 2005; Daude and Melguizo, 2010 for Latin America). Other robust determinants of tax morale in the empirical literature include self-perceived economic situation, education and employment status. Tax evasion is less justifiable to tax compliers (Levi and Sacks, 2009 for Africa; Gaviria, 2007; Daude and Melguizo, 2010 for Latin America). Similarly, retirees exhibit higher tax morale relative to those in the labor market, with the self-employed being suspect of having low tax morale (Torgler, 2004 for Asia; Hug and Sporri, 2011 for Eastern Europe).

There is also evidence that social norms affect tax morale. Martinez-Vazquez and Torgler (2007) explore the evolution of tax morale in modern Spain with a return to democracy and incorporation into the European Union. Similarly, Alm, Martinez-Vazquez, and Torgler (2006) emphasize the relevance of social norms in tax compliance in Russia. Their results indicate that perceived tax evasion has a strong, negative, and statistically significant impact on tax morale. In a sample of Central and Eastern European and Former Soviet Union countries, Frey and Torgler (2007) focus on behavioral motivations of tax compliance. Their key independent variable, perceived tax evasion, reflects the degree of horizontal tax reciprocity in a society. Similarly, they find that taxpayers who believe that tax evasion is widespread exhibit lower tax morale. In the same fashion, the OECD (2013) reports that perceptions of corruption negatively influence tax morale. Halla (2012) and Kountouris and Remoundou (2013) exploit ancestry information from immigrants in the US and Europe, respectively, to show how culture can affect tax morale.

Methodologically, the norm is observational cross-country studies. A number of analyses engage in global comparisons based on the WVS whereas others conduct regional comparisons that rely on subsets of the WVS. Other typically employed regional tax morale survey datasets include the Afrobarometer (by Michigan State University, the Institute for Democracy in South Africa, and the Center for Democratic Development in Ghana), the AsiaBarometer (by the University of Niigata Prefecture), and the Latinobarometro (by the Latinobarometro Corporation). Firm-level analyses are primarily based on, first, the World Bank's World Enterprise Survey and, second, the Business Environment and Enterprise Performance Survey. One potential shortcoming of using such interconnected datasets is the introduction of endogeneity. When different data

providers take into consideration each other's evaluations, their perceptions can become endogenous since their "errors" could be correlated.

In rare instances, novel datasets that are generated by face-to-face interviews of individuals in local languages have been employed; the advantage of these datasets is that they are not subject to endogeneity from perception errors correlation (Levi and Sacks, 2009). It is in this latter strain of the empirical literature using surveys where the current paper fits. In this vein we exploit novel survey data of Pakistani individuals' (filers and non-filers) attitudes towards tax compliance. This information is not subject to endogeneity bias from perception errors' correlation because it was drawn from different regions and localities of Pakistan. Moreover, as survey responses were collected simultaneously within each locality, it is unlikely that respondents influenced each other, thus, contaminating the sample.

3. Data

This paper uses survey data collected during a baseline perception survey of individual taxpayers for the FBR conducted in 2014. The data were generated in the process of promoting FBR's efforts to broaden the tax base and increase tax revenues in a program sponsored by the United Kingdom's (UK) Department for International Development (DFID). The program was implemented by Adam Smith International (ASI) with the goal of promoting behavioral solutions to low tax compliance, such as a tax-filing awareness raising campaign. To inform the campaign, a needs assessment of FBR's external communications was required. Accordingly, ASI contracted Semiotics Consultants to undertake a baseline perception survey to elicit opinions of eligible taxpayers across Pakistan about tax return filing. The purpose of the perception survey was to understand existing tax return filing dynamics. The survey information was collected simultaneously from all metropolitan areas in Pakistan starting August 8, 2014 for a period of 6-7 days. At least 200 tax eligible individuals were selected at random in each area. As a result of visits to multiple localities within a metropolitan area, individuals from a mix of economic sectors were targeted (e.g., salaried and non-salaried individuals deriving incomes from other sources). After discarding any observations with missing values, we obtain a representative sample of 2,562 individuals across 13 metro areas of Pakistan.

4. Empirical Analysis

For our empirical analysis of the determinants of tax morale in Pakistan we use survey responses to the statement “Cheating on taxes in Pakistan is never justifiable” which are originally coded in a scale from 1 to 5. As is customary in the empirical tax morale literature, we collapse the five tax morale ordinal responses to an indicator outcome variable. The *Tax Morale_i* outcome variable takes the value of one if respondent *i* strongly agreed, or agreed to the previous statement and zero if respondent *i* neither agreed nor disagreed, disagreed, or strongly disagreed to the previous statement. Essentially, we are modeling the probability of respondents having positive attitudes towards tax compliance, or in other words, the instance of high tax morale.

More specifically, we are interested in the effect of a change in the values of a set of explanatory variables *X*, including socio-economic characteristics, social norms, and other behavioral factors on tax morale.

As is standard in the empirical tax morale literature, we estimate the probit regression model described in equation (1) below.⁴

$$Tax\ Morale_i = \beta_0 + \beta_1 X_i + \beta_2 I_i + \varepsilon_i \quad (1)$$

where *Tax Morale_i* denotes respondent’s *i* attitude toward tax compliance. In the vector *X_i* we incorporate all demographic (gender, age), socio-economic (employment status, education level), and behavioral controls. Specifically, demographic information includes dummy variables for gender and age; the latter measured as a continuous variable from 19 to 80. We also examine the effect of virtually all levels of educational attainment on tax morale. We introduce indicators for respondents with no formal education, primary education, middle-school, high-school, and Master’s level education to compare their association with tax morale relative to college graduates. Next, we assess the impact of employment status on tax morale using indicators for the self-employed, those earning rental income, the unemployed, students, and pensioners. The omitted employment status is respondents who are earning wages. In addition, we test for the importance of a number of behavioral factors such as perception about corruption in the use of tax revenues, fiscal policy, social norms surrounding tax filing and its enforcement and the

⁴ The probit regression estimates the conditional probability of an outcome *Y* to be true for observation *i*; i.e., $Y_i = 1$ in a way that the resulting coefficients are not directly interpretable. To illustrate the impact of changes in *X* on outcome *Y* we compute marginal effects; i.e., the ceteris paribus impact of a change in the regressor *X* on outcome *Y* at the mean values of the remaining regressors X_{-k} .

fairness of the tax code. Finally, with the vector I_i we introduce metro area dummy variables in reference to Islamabad/Rawalpindi (the metro area where the capital of Pakistan is situated). Summary statistics are provided in Table A.1 in the Appendix. We specify robust standard errors for the error term ε_i .⁵

4. Results

Table 1 below presents the main results of the estimation. We complement them with a graphical representation of each column in Figures B.1-B.5 in the Appendix.

Table 1: Marginal Effects of Demographic and Socio-economic Factors of Tax Morale

	(1) Baseline Model
Female	0.0723*** (0.0199)
Age	0.000728 (0.00104)
Non-Salaried Rental Income	0.0634** (0.0282)
Pensioner	0.113** (0.052)
Unemployed	0.0223 (0.123)
Student	0.0238 (0.0984)
Self-Employed	-0.0426 (0.0669)
Illiterate	-0.173 (0.145)
Primary Education	0.0841 (0.0719)
Middle School Education	0.0152 (0.0504)
High School Education	-0.0465*

⁵ We present the main results using robust standard errors. As a robustness check, we cluster standard errors at the provincial level. That is, we examine whether individual responses are independent across but not within provinces. Even though we use metropolitan area dummies, we hold that the errors should be clustered by province because local tax policy, if any, is implemented at the provincial level. However, it is clear from Martinez-Vazquez and Cyan (2015) that provinces do not tax their constituencies heavily but rely on federal grants for their public finances. Therefore, if any intra-province correlation exists it should not be that important in respondents' attitudes towards tax compliance. We expect that the latter are predominantly formed in response to federal tax policy. Empirically, only the significance of few baseline coefficients changes. These are: Female; Non-salaried income from rental, services; Self-Employed; High-School Education; and Age of Respondent.

	(0.0271)
Master’s Degree Holders	0.0464**
	(0.0214)
Vocational Education	-0.0715
	(0.0554)
<hr/>	
Observations	2,526
<hr/>	
Notes: * p < 0.1, ** p < 0.05, *** p < 0.01; Robust standard errors in parentheses. Metropolitan Area indicators omitted	

Table 1 shows estimates of our baseline specification that adjusts for demographic (gender, age) and socio-economic characteristics (education, employment status) of the respondents. Females have significantly higher tax morale than males. In agreement with the past literature, age positively affects attitudes towards tax compliance. In this instance, we recover a statistically insignificant impact which we explore further below. Still, pensioners do have significantly higher tax morale relative to non-pensioners. Respondents earning income from rental income have more positive attitudes towards tax compliance, relative to those earning wages. In combination with the results on females and older cohorts, it appears that groups with a low labor force participation rate have more positive attitudes towards tax compliance in Pakistan. Similarly, one would expect professional groups with high labor force participation rates to behave in the opposite way. Indeed, self-employed and respondents with vocational training exhibit lower tax morale, although the estimated coefficient is not statistically significant. Overall, groups which are net consumers of public goods with small current contributions to the public fund desire higher tax compliance. The finding is not statistically significant for the case of student respondents as the positive effect might be mitigated by frustration with the overall quality of the educational system.⁶ Finally, we consider the effect of education on tax morale in Pakistan. On the extensive margin, the level of education appears to increase tax morale in Pakistan as the illiterate exhibit lower tax morale. However, the result is not statistically significant—perhaps due to the very small number of illiterate respondents which inevitably leads to imprecision. On the intensive margin, education appears to have a U-shaped effect on tax morale. In reference to bachelor’s degree holders, those with very low levels of formal

⁶ The data do not distinguish between public and private sector educational institutions. Recently, there were public protests against high fees being charged by private schools which led to government moving in to regulate the fee structure. The public sector schools on the other hand are notorious poor performers.

education, high-school graduates, and master's degree holders are, respectively, associated with higher, lower, and higher tax morale.

Table 2: Marginal Effects of Behavioral Factors of Tax Morale

	(1) Trust in Govt	(2) Social Norms	(3) Tax Structure
Taxes Promote Progress	0.0183 (0.0266)		
Good Use of Tax	-0.166*** (0.0493)		
Taxes Used for Public Benefit	0.0521 (0.0251)		
Investments are Unaffected by Taxation	0.109*** (0.0253)		
Tax Ineffective due to Recurring Govt. Spending	0.0665 (0.0466)		
Tax Ineffective due to Waste to Unproductive Projects	-0.0003 (0.0449)		
Tax Ineffective since Consumed in Corruption	0.0728 (0.0453)		
Tax Ineffective since Leadership Unaware of its Best Use	0.0594 (0.0473)		
Acquaintances do not File Tax Return		-0.0091 (0.0195)	
FBR will Take No Action to Not Filing		0.0554*** (0.0200)	
Non-filing Culture in Society		0.0293 (0.0201)	
Filing is Necessary for Development of Pakistan		0.0201 (0.0252)	
Filing is a Social Responsibility		0.0625*** (0.0247)	
Better to Give to Charity than Pay Tax			0.0246 (0.0191)
Richer Pay More Taxes			0.157*** (0.0260)
Tax System is Fair			0.0840*** (0.0281)
Demographic Controls	YES	YES	YES
Socio-Economic Controls	YES	YES	YES
Observations	2,526	2,526	2,526

Notes: * p < 0.1, ** p < 0.05, *** p < 0.01; Robust standard errors in parentheses. Metropolitan Area indicators omitted

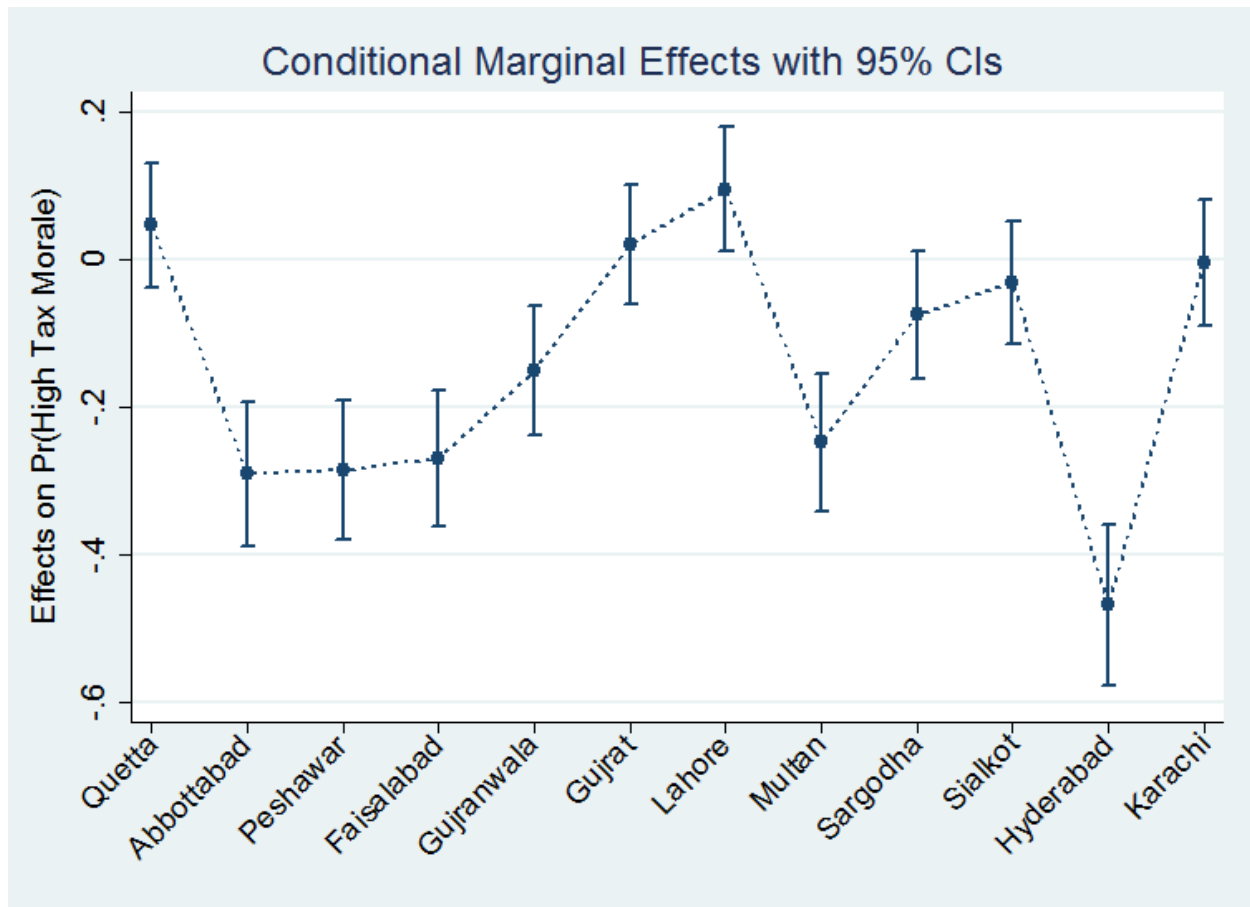
Table (2) builds upon the baseline specification and extends the scope of analysis to behavioral factors of tax morale driven by respondents' perceptions. Column 1 introduces controls for respondents' perception of the tax administration. Before reading the results, one should note that respondents may have masked their true responses to avoid potential penalties or further actions, which may lead to the imprecision of the data (Kaufman et al., 2010). In an example of this potential masking, those who agree to the statement that tax money is properly used have significantly lower tax morale. A potential explanation could be that these respondents are recipients of special treatment from the government and, thus, are not at-odds with any tax policies. Still, for those who believe that tax money is used for public benefit, we do find the expected positive influence on tax morale. Similarly, respondents who believe that taxation does not affect investment are positively and very significantly associated with higher tax morale.

Column 2 considers the effect of social norms and the underlying perception of tax evasion on tax morale. Respondents who believe that tax filing is a social responsibility exhibit higher tax morale, as one would predict. Those who hold that other taxpayers do not file tax returns because the FBR will take no action (effectively, a very low audit probability) have significantly higher tax morale. This is somewhat surprising but indicative of an underlying culture that has experienced that tax evasion is not penalized and consequently had developed a cavalier attitude toward filing. The preponderance of withholding taxes in Pakistan's tax system could be another reason for this attitude. In most cases, despite paying withholding taxes on such transactions as use of utilities, bank withdrawals and purchase of air tickets, filing returns remains low. Their calculus might still be that they are able to keep higher levels of incomes for consumption at the end of all withholding taxes. For example, those who believe that individuals do not file their tax returns because others they know also do not file- have lower, tax morale although the coefficient is not statistically significant.

Finally, in column (3) we adjust for respondents' beliefs about the tax system. Those who agree that Pakistan has a fair tax system - where taxes are imposed on those who should pay and not on those who should not pay - are associated with higher tax morale. Similarly, those who agree that Pakistan has a progressive tax system exhibit significantly more positive attitudes towards tax compliance.

Note that in all above probit regressions, we also use metro areas dummies in reference to the capital, Islamabad/Rawalpindi, which are omitted from the tabular representations. Figure 1 below provides a graphical representation of the coefficients of the twelve metro areas in reference to Islamabad/Rawalpindi.

Figure 1 – Effects of Metro Area Dummy Variables on Tax Morale:

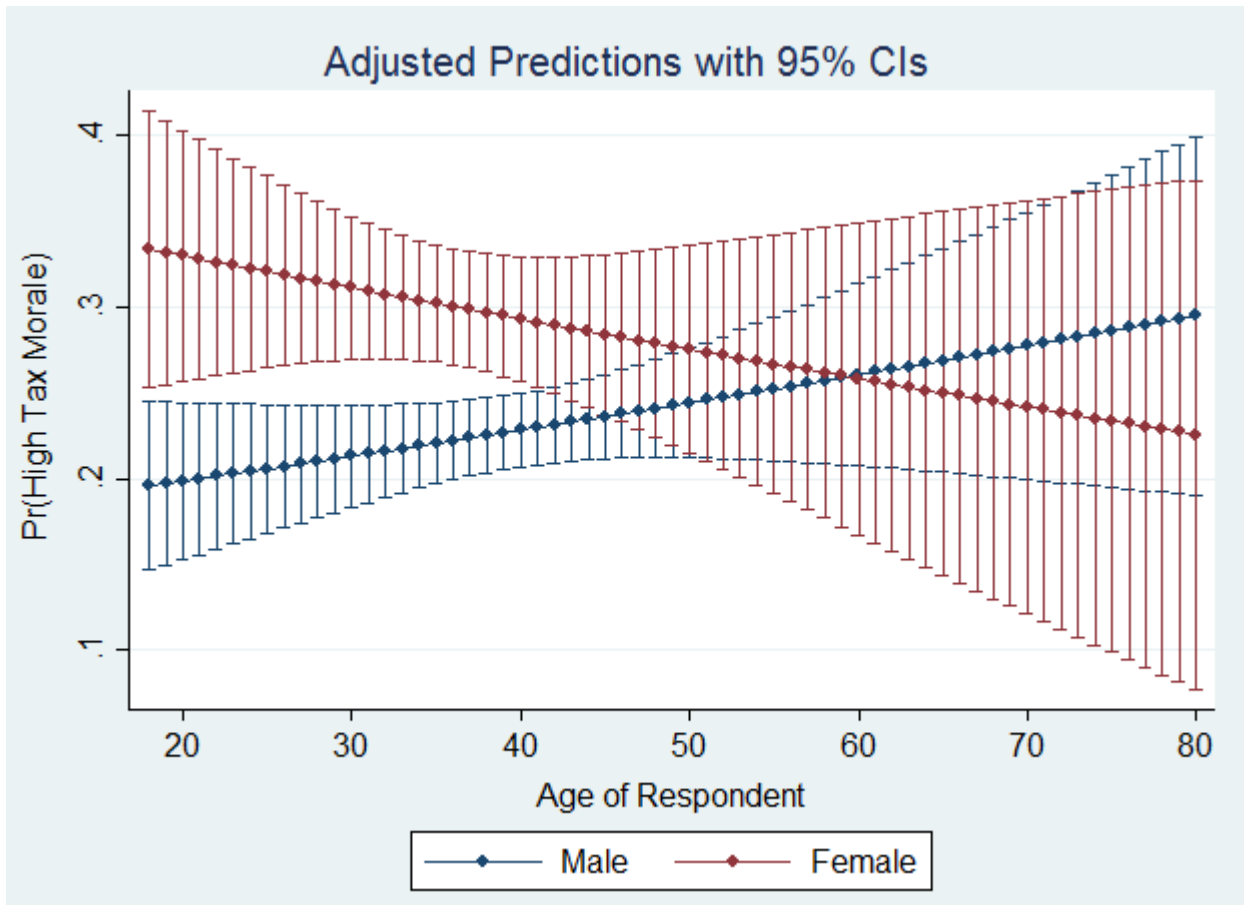


The graphic depiction shows that most manufacturing cities have higher tax morale with the exception of Quetta and Sargodha. Quetta from the province of Balochistan appears to have higher tax morale than Islamabad/Rawalpindi. This could be explained by the fact that Quetta is the only metro area in Balochistan. In other provinces, metro areas have to compete among each other to receive provincial public funding into their coffers. Islamabad/Rawalpindi have significantly higher fractions of population that are government employees paying taxes on their salaries. Tax morale in the industrial towns is lower than these but still higher than other cities.

As a matter of fact, the only metro area in the Punjab province whose respondents show a more positive attitude towards taxation relative to Islamabad/Rawalpindi is Lahore, the only urban center of comparable population and economic activity and, thus, least likely exposed to a resource drain from the capital. In a province ridden by war and instability (Khyber Pakhtunkhwa), the metro areas of Abbottabad and Peshawar have significantly lower tax morale. Lastly, we recover a similar relationship between metro areas and tax morale in the province of Sindh. Respondents from the smaller metro area, Hyderabad, have significantly lower tax morale, whereas those from the larger metro area and former capital of Pakistan, Karachi, have more mixed attitudes toward tax compliance relative to respondents in Islamabad/Rawalpindi. A comparison of metro areas suggests that tax morale is higher in more industrial metro areas. This could be attributed to the larger share of the population that files their taxes in urban areas, the higher quality of public services or the fact that there are more residents that are public employees or benefitting from pension schemes. .

We complete the empirical analysis with a graphical exploration of the interaction of statistically significant explanatory variables of our baseline analysis. Specifically, we extend equation (1) with interaction terms that we estimate successively. This allows us to demonstrate the heterogeneous effects of statistically significant determinants of tax morale in Pakistan across sub-groups of the population. With regards to demographic and socio-economic characteristics, we show the effects of gender and age on positive attitudes towards tax compliance in Figure 2.

Figure 2 – Effects of Gender across Years of Age on Tax Morale:



Interacting age with gender allows us to decompose their effects on tax compliance and provide insight to our baseline results. We observe young female respondents to exhibit higher tax morale relative to young males. However, attitudes towards tax compliance deteriorate severely for females as they age. This could be reflective of elderly women's low appreciation for the quality and availability of public services given their great demand for such services. Thus, the previously found positive but insignificant effect of age on tax morale could be accounted to the attenuating effect of elderly females. This raises the question whether the stylized fact in the literature regarding a positive influence of age on tax morale was driven by males or it uniformly applies to both sexes. This can be an especially important concern if sampling fails to produce an imbalanced survey with respect to gender. This is the case in this dataset as well, with only 30% of respondents being female.

5. Concluding remarks

Motivated by the lack of empirical analysis of the determinants of tax morale for Pakistan, we answer this question drawing from a novel dataset. Our results are, generally, in line with the findings of the modern empirical literature of tax morale in other countries. Generally, groups with lower labor force participation rates have more positive attitudes towards tax compliance in Pakistan. On the other hand, professional groups with higher labor force participation rates such as the self-employed exhibit lower tax morale but not in statistically significant way. On the extensive margin, educated respondents have higher tax morale in comparison to the illiterate. On the intensive margin, education has a U-shaped effect on tax morale; only those with very low or very high attainment levels have higher tax morale with respect to bachelor's degree holders. We find that the metropolitan areas which are the largest population centers, are industrialized and seats of government have significantly high tax morale. In provinces where metro areas compete for public funds from the provincial tax administration, respondents exhibit lower tax morale.

To exploit the information that is rich in behavioral factors of tax compliance, we employ interaction terms to examine heterogeneous effects of important predictors across sub-populations. We show that females have significantly higher tax morale than males. However, their attitude towards tax compliance drastically worsens with the passage of time to the extent that elderly males have higher tax morale than elderly females.

There are several findings that are relevant from the perspective of the tax administration in Pakistan. The important difference in tax morale across gender implies potentially substantial gains from the introduction of more females in the labor force. Given their low labor participation rates and the existence of a large pool of female college graduates, general compliance could be improved by introducing young labor initiatives specifically targeted to females. Also, the tax administration should avoid further deterioration of the potentially more compliant taxpayers' perception about the administration by reducing instances of corrupt practices and eliminating the annual practice of tax amnesties. Improving the beliefs of those who bear the burden of taxation could be achieved by increasing incentives for early-filers and those who file online or even providing credits for those with a good compliance record. More generally, addressing the current failures of tax administration and dealing with the horizontal

inequity resulting from administrative weaknesses is likely to contribute materially to improving voluntary compliance.

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APPENDIX

Table A.1: Summary Statistics

VARIABLES	Mean	Standard Deviation	Min	Max
Age	38.824	9.574	19	80
High Tax Morale Indicator	0.275	0.445	0	1
Female Indicator	0.308	0.462	0	1
<u>Employment Status Indicators</u>				
Rental Income	0.144	0.351	0	1
Pensioner	0.034	0.182	0	1
Unemployed	0.004	0.066	0	1
Student	0.008	0.087	0	1
Self-Employed	0.020	0.141	0	1
<u>Educational Attainment Indicators</u>				
Illiterate	0.006	0.077	0	1
Primary Education	0.167	0.128	0	1
Middle School	0.033	0.179	0	1
High School	0.162	0.368	0	1
Master's Degree	0.388	0.488	0	1
Vocational Education	0.029	0.168	0	1
<u>Metropolitan Area Indicators</u>				
Quetta	0.075	0.263	0	1
Abbottabad	0.079	0.270	0	1
Peshawar	0.078	0.268	0	1
Faisalabad	0.072	0.259	0	1
Gujranwala	0.079	0.270	0	1
Gujrat	0.077	0.267	0	1
Lahore	0.077	0.267	0	1
Multan	0.078	0.269	0	1
Sargodha	0.078	0.268	0	1
Sialkot	0.079	0.269	0	1
Hyderabad	0.074	0.261	0	1
Karachi	0.076	0.264	0	1

Notes: N = 2,526 Individual Survey Respondents. Variable "High Tax Morale" equals one if respondent strongly agreed or agreed that "cheating on taxes in Pakistan is never justifiable" and zero if respondent neither agreed nor disagreed, disagreed, or strongly disagree to the previous statement.