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# Tax Morale and Reciprocity. A Case Study from Vietnam

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## Abstract

Understanding the effects of reciprocity on tax morale is crucial to explain tax compliance behavior. However, there is only little research about which sources of reciprocity affect tax morale most. Thus, this paper for the first time gauges the effects from two sources of reciprocity on tax morale in an empirical study. The first source, vertical reciprocity, measures how tax payers value their contributions to the government. The second source, horizontal reciprocity, examines the impact of the perceived compliance behavior of other tax payers. The focus of the study is on Vietnam. The country seems to be a promising spot for this type of research because it exhibits an exceptional high level of tax morale and collectivism but only has low tax audit probabilities. This analysis is based on a consumer survey in the City of Hue which combines and extends questions from previous versions of the European and the World Value Survey. The result shows that both reciprocity measures are significantly correlated with tax morale but that vertical reciprocity prevails.

*JEL-Codes:* D79, H26, Z13

*Keywords:* Tax morale, Tax compliance, Tax evasion, Reciprocity

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# 1 Introduction

Peoples' behavior is largely shaped by how they experience their environment. They positively reciprocate to the actions of others as long as they feel well treated and retaliate if not (Sobel, 2005). This behavioral norm also holds for their tax morale whose determinants have come under increasing scrutiny in the last three decades. After considering tax compliance as a result of state deterrence, economists realized that moral costs influence tax compliance decisions as well (Baldry, 1986). Thus, several scholars began to explore how experiences from mutual exchange within a society shape the intrinsic motivation of tax payers (Feld and Frey, 2002; Alm and Torgler, 2006). In this strand of literature, the concept of reciprocity has emerged as a promising tool in two ways. First, on the horizontal basis, tax payers may be more willing to comply if other contributors do so. Second, on the vertical basis, tax payers may align their compliance decision on how they feel treated by the fiscal policy of the government. While most of the literature analysis these two determinants of tax morale separately, Bazart and Bonein (2013) recently conducted a laboratory experiment to analyze them in one setting and thus following the theoretical approach by Schnellenbach (2011).

In their tax game, they implemented different tax rates to simulate vertical inequity. For the horizontal reciprocity, they informed the subjects about the mean income reported by the other participants at the end of each round. They conclude that the effects from horizontal reciprocity always dominate those from vertical reciprocity. However, the artificial setting of an experiment in general as well as the sample of undergraduate students, most of them not older than 20 years of age who are unlikely having any experiences with tax related issues, might challenge the robustness of the result. Their results further might suffer from the reflection problem because the average behavior of the reference group influences the individuals' decision making (Manski, 1993).

Thus this paper pursues to empirically estimate how both types of reciprocity affect tax morale in a real world scenario. Since most of the industrialized countries have credible institutions to enforce controls on tax payments it seems suitable looking on a country with a low level of deterrence but whose people have tight relationships with each other and to the state. Across the developing world, Vietnam seems to fit best. On the one hand, it uses types of taxes known from the industrialized world (e.g. the Personal Income Tax and the Value Added Tax) and obliges every citizen to pay taxes. On the other hand, the country still lacks of sufficient capacities to monitor all contributors (Rama et al., 2011, pp. 23-25). Moreover, it has a high level of collectivism and state obedience (The Hofstede Center, 2014). This empirical analysis uses data from a tax survey in the City of Hue, Vietnam. It uniquely combines and extends questions from earlier versions of the European and the World Value Survey which address the relationship between tax morale and horizontal and vertical reciprocity but mostly are not included in these surveys anymore.

The main finding is that tax morale in Vietnam is more affected by vertical than horizontal reciprocity. Moreover, people who perceive tax payments as big financial burden are more likely than others to justify cheating on taxes.

The remainder of this article is as follow: Section 2 gives an overview on the related literature about tax compliance and reciprocity. Section 3 provides an introduction to the construction of the sample. Section 4 summarizes the socio-economic characteristics of the sample. Section 5 introduces the tax related questions and informs about their descriptive statistics. Section 6 empirically tests the impact of horizontal and vertical reciprocity on tax morale. Section 7 reports some robustness checks. Section 8 explores interactions between socio-economic variables and the two reciprocity measures. Section 9 discusses the results and gives implications for tax policy and future research.

## 2 Related literature

The recent literature about tax compliance dates back to the seminal theory by Allingham and Sandmo (1972). According to their model, tax evasion is a gamble that is constrained by auditing and punishment. However, several scholars ascertained that the actual compliance exceeds the predictions from expected utility calculations (Graetz and Wilde, 1985; Frey and Feld, 2002).

Baldry (1986) conducted two experiments which show that tax compliance decisions can be explained by morale costs rather than by expected utility calculations. These moral costs are nowadays known as tax morale and give the intrinsic motivation of individuals to pay their dues (Cummings et al., 2005; Feld et al. 2013).

Alm and Torgler (2006) assume that tax morale is shaped by several determinants as the perceived fairness of the tax system, the reliability of the political system, the behavior of other tax payers and personal characteristics. This definition of tax morale further induces that tax compliance decisions at least to some part can be considered as a result from experiences with other members of the society. Gouldner (1960) describes the existence of mutual exchange of rewarding and punishment as reactions to cooperation and non-cooperation and defines it as the social norm of reciprocity. The general importance of reciprocity to economic decision making is widely discussed by Fehr and Gächter (2000) and Fehr and Falk (2002).<sup>1</sup>

Regarding its relevance to the field of taxation, Schnellenbach (2010) supplied a theory of tax payer compliance that highlights two types of reciprocity and includes the factors listed by Alm and Torgler (2006). The first type is horizontal reciprocity which considers reciprocity as responsive behavior to the actions of other tax payers. This type of reciprocity draws on the theoretical predictions by Cowell (1992), Bordignon (1993) and Traxler (2010). According to their models, tax payers align their evasion decisions on the behavior of other tax payers. The existence of conditional cooperation based on the donations of other contributors was tested in several laboratory experiments. Fischbacher et al. (2001), Alm and McKee (2004) and Falk et al. (2013) find that subjects increase their donation with rising group cooperation. On the other hand, Lefebvre et al. (2011) find no decrease of tax evasion if other group members increase their donations. Frey and Torgler (2007) show in an empirical study that tax morale decreases the more people in an economy are assumed to cheat on taxes. They further find that the quality of political institutions significantly affects the tax morale. They show that people in Eastern Europe who experienced a collapse of their political and economic system exhibit lower tax morale than individuals in Western Europe. This finding is related to the second column of reciprocity.

The vertical reciprocity describes that tax payers' evasion decisions depends on how they feel treated by the fiscal policy of the government. In contrast to the understanding of tax payments as a result from state deterrence they should rather be considered as civic virtues (Frey, 2003). According to this understanding people may comply because they feel obliged as society members. Feld and Frey (2006) argue in favor of a psychological contract between tax payers as well as tax payers and the state authorities. Kirchler, Hoelzl, and Wahl (2008) provide a model which considers power of the authorities and trust in political institutions as the most important determinants of tax compliance. In laboratory experiments, economists either use different tax rates (Spicer and Becker, 1980; Alm et al., 1992) or supply different amounts of return from public goods (e.g. Alm et al., 1993; Weimann et al., 2012) in order to introduce fiscal inequities and find increased evasion due to these sources. In the empirical literature Torgler and Schaffner (2007) find that higher trust in governmental officials and obedience

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<sup>1</sup>In contrast to reciprocity some scholars argue in favor of conformity as explanation for why people contribute more than predicted by expected utility calculation. They argue that people donate to a public good even though they have no benefit but just because they want to comply with a societal norm (Henrich, 2004; Bardsley and Sausgruber, 2006). However, it seems to be questionable whether paying taxes is already societal norm in Vietnam. Moreover, many people have grown out of poverty in the recent years and hence can be expected to directly or indirectly benefited from governmental spending and hence support its politics.

lead to increased tax morale. Cummings et al. (2009) find that cross-country differences in tax morale result from citizens' assessment of the quality of governance and tax administration. Drawing on the examples of Botswana and South Africa, they argue that the quality of political institutions has a significant effect on tax compliance in developing countries. However, there is only a limited scope of literature focusing on the situation in socialist economies.

One exception is Germany where those who grew up in the Eastern part were educated by the socialist paradigm of collectivistic coercion and state obedience. The studies by Feld, Torgler, and Dong (2008), Streiff (2013) and Feld et al. (2013) agree that tax morale in East Germany was higher than in West Germany right after the unification. This finding also in line with McGee (2008a) who identifies that Vietnamese people are more opposed to tax evasion than are people in most other Asian countries. He also finds that Vietnamese females and higher educated individuals are less opposed to tax evasion while there are no significant differences between age groups (McGee, 2008b).

### 3 Sample Construction

The data used in this paper stem from a consumer survey conducted in the City of Hue, Vietnam, in spring 2013. Hue has a population of 300.000 inhabitants and is the fourth largest city of the South East Asian country. The construction of the sample refers to the quota sampling approach. The respondents were randomly selected at the exit of three supermarkets which enforce the Value Added Tax.<sup>2</sup> This was due to the goal of including people in an everyday situation who are used to pay taxes. The survey was carried out on one day per supermarket. To allow for a homogenous sample the survey was conducted at a Saturday as well as on two consecutive statutory holidays.<sup>3</sup>

The interviewer stopped after a total number of 100 persons per supermarket answered the questionnaire. The interviews were carried out by two Vietnamese students. The questionnaire was in Vietnamese and was pre-tested three days prior to the survey at the first supermarket. The questionnaire was re-translated into English prior to the survey in order to check for mistakes from the initial translation into Vietnamese.

### 4 Summary statistics

As discussed, the sample includes 300 interviewees - 100 per supermarket. The average age in this sample is 36 years and about 39 percent are males (Table 1). In the medium the respondents spent three-quarters of their lifetime in the City of Hue. Hence the sample mainly comprises people from that urban area.<sup>4</sup> About 47 percent of the respondents hold a university degree and 22 percent successfully finished a vocational training. Thus the sample mainly draws on higher educated respondents. This can be explained by the situation that these people are more likely being able to afford shopping in tax enforcing markets. Finally, seven occupational groups can be distinguished. Most of the interviewees can be defined as white-collar (37.3 percent) or service sector workers (18.3 percent). On the other hand, only 8.7 percent of the respondents work as farmers, fishermen, housewives or are unemployed and hence are treated as *Others*.

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<sup>2</sup>Always the first person who came out of the supermarket after the interviewer finished with the previous respondent was asked to be interviewed next. In case that couples came out together, the interviewer were supposed to alternate between male and female interviewees but to stick to one respondent during the interview.

<sup>3</sup>Hence, at each survey day most of the public employees were not supposed to work but could be expected spending time for shopping.

<sup>4</sup>The respondents were asked for the number of years they have been living in the City of Hue in order to identify whether the sample really includes people from that urban area and thus to allow for comparisons with people from rural areas in an upcoming study. Due to the fact, that the total lifetime spent in that place varies with the age of the individuals, the share of lifetime the people spent in the City of Hue was calculated. Thus, the absolute number of years the respondents lived in the City of Hue was divided by their age.

## 5 Questionnaire

The dependent variable *tax morale* was interrogated by the following question:

*In general, what do you think about cheating on taxes?*

This question originally stems from the European Value Survey (EVS) version 2008. The wording of the original question has slightly been modified because this survey does not provide a list of statements related to this type of question and should be presented as intuitive as possible.<sup>5</sup> The original ten-point scale for the possible responses was reduced to a three-point scale, ranging from (1) *"Is always justified"*, (2) *"Is sometimes justified"* to (3) *"Is never justified"*. The selection of a 3-point scale is due to the experiences of lacking variance for the responses between 4 and 10 by Frey and Torgler (2007) and Streiff (2013). It seemed to be useful providing the two extremes and one option in the middle. This type of question is frequently used to estimate tax morale in empirical studies (e.g. see Frey and Torgler; 2007, McGee, 2008a and 2008b; Feld et al. 2013). However, Elffers et al. (1987) expressed their doubts because people might not articulate their honest opinion in a survey. On the other hand, Torgler et al. (2010) give evidence for a correlation between tax morale and tax evasion. Due to the lack of actual tax payment data of the street interviewees and no alternative measure of tax morale we decided to keep with the common approach of asking for the justifiability of cheating on taxes. Additionally, as shown in figure 1 in the Appendix, 63 percent of the respondents state that tax evasion is not justifiable. On the other extreme, only 2 percent believe that cheating on taxes is always justified. Even though 35 percent consider cheating on taxes as at least sometimes justifiable, we would argue that the high value of respondents who object cheating on taxes indicates that the result in this survey generally is in line with the findings by McGee (2008a) and thus the result of the dependent variable seems to be reliable.

To assess the impact of horizontal reciprocity on the tax morale, the respondents were asked about their meaning on how many of their compatriots cheat on taxes. This approach is also typically used in empirical studies (e.g. see Frey and Torgler, 2007). This question also may challenge critique regarding its reliability because it gives no information about the impact of different reference groups on the individuals' tax compliance decision. However, the discussed literature neither from theoretical nor from empirical or experimental economics gives reason to assume that people do not orient their behavior on what their compatriots are doing (see Alm, 2012; Traxler, 2010; Bazart and Bonein, 2013).<sup>6</sup> Thus the respondents in this survey were asked:

*What do you think, how many people are cheating on taxes in your country?*

To answer this question they could choose from a four-point scale, ranging from (1) *"Almost none"* to (4) *"Almost everybody"*. In general the respondents seem to be quite skeptical about tax honesty of their compatriots. Roughly two third of them believe that many people or even fairly everybody in Vietnam evades taxes (figure 2). Thus the horizontal relationship may discourage people to comply.

Two questions focused on vertical reciprocity. Throughout the literature there does not exist one explicit measure to estimate vertical reciprocity. On the other hand, several studies exploit variables asking for the perceived quality of political institutions in order to estimate the impact of vertical reciprocity on tax morale (e.g. see Cummings et al., 2009). In accordance with Feld and Frey (2005) the relation between taxpayers and the state can be considered as a contract where people pay and the government supplies public goods and services. Thus, this survey asked two questions both of them directly focusing on the tax payments to the government. The first question was:

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<sup>5</sup>The EVS version of the question is: *"Please tell me for each of the following statements whether you think it can always be justified, it can never be justified, or it falls something in between[...]: Cheating on tax payments if you get the chance."*

<sup>6</sup>This question was slightly modified. The original question stems from the EVS version 1999/2000. The EVS version of the question is: *"According to you, how many of your compatriots do the following: Cheating on taxes if they have the chance?"*

*Most of the citizens in your country have to pay taxes. What does paying taxes most likely mean to you?*

This question intended to estimate how the respondents generally perceive paying their taxes. The possible answers to this question provide an association with whether the respondents believe in the useful purpose of their tax payments. In fact, they could decide between an answer with a positive notion: (1) *"Taxes are necessary contributions"* or a negative wording: (2) *"The government takes away my money"*. Additionally, they received the option (3) *"I don't care about taxes"* in order to identify those who are not interested in tax related issues. As presented in figure 3, more than 75 percent of the respondents agreed with the answer that taxes are necessary contributions. On the other hand, only 7 percent felt that the government is just taking the money away from them, while 18 percent did not care about taxes at all. As for the tax morale estimation this result indicates that the respondents exhibit reliance in the government and consider their tax payments as useful contributions to the economic development of the country.

The second question again targeted on the tax payments and the willingness of the respondents to comply. They were asked:

*Would you agree to a tax increase if the extra money is used to finance more and better public goods and services?*

This question was termed in a positive way in accordance with its original version from the 1999/2000 EVS.<sup>7</sup> The advantage of positive wording is the reduction of bias from negative interpretation because of the belief in misuse of public finances. This question could be answered with either (1) *"Yes"* or (2) *"No"*. The result shows that 50 percent of the respondents are willing to contribute more to the public budget (figure 4). Even though this is a lower value than for the question before, it again provides a hint for the appreciation of the governmental policy and fits into the previous result of high tax morale.

Additionally, the respondents were asked for the perceived impact of taxes on their budget. Asking for the perceived burden from taxation instead of the actual income is due to the argument by Torgler (2006) who suggests that it is not clear how income affects tax morale. Hence, interviewees were asked:

*Is paying taxes a big, small or no financial problem for you?*

and could choose between the three options: (1) *Big*, (2) *Small* and (3) *No burden*. As shown in figure 5, most of the respondents, 64 percent, perceive paying taxes as a small or even as no burden (30 percent) and only 6 percent of them feel heavily loaded.

## 6 Tax morale and reciprocity

This section presents the estimated the impact of horizontal and vertical reciprocity on tax morale and identifies the dominant effect. Because of the scaled dependent variable *tax morale* and the concentration of the data around the mean value an ordered probit model was employed. Furthermore, the marginal effects were calculated, in order to estimate the quantitative size of the effects of the explanatory variables on tax morale.

As model 1 in table 2 indicates, there is a significant negative correlation between tax morale and the perceived number of compatriots who cheat on taxes. An increase in the scale of the perceived number of compatriots who cheat on taxes by one unit decreases the number of respondents reporting that cheating on taxes is never justifiable by 11.9 percentage points. This result agrees with the findings by Frey and Torgler (2007) about the European countries. Moreover, among the control variables, people between 30 and 49 years find cheating on taxes significantly less justifiable than younger respondents. This result changes for older individuals but is only of statistical significance for those with 70 years of age or older. Additionally, those individuals who perceive paying taxes as a

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<sup>7</sup>The original of this question: *"I would agree to an increase in taxes if the extra money is used to prevent environmental pollution"*.

big financial problem are significantly more likely to consider cheating on taxes more justifiable than those who feel less burdened.

Models 2 and 3 in table 2 focus on vertical reciprocity. Therefore, the two questions that intend to evaluate how the respondents value the reliability of the state with regard to their tax payments are analyzed. Model 2 presents two possible answers towards the question of how the respondents generally perceive paying their taxes. Considering tax payments as necessary contributions increases the probability of reporting that cheating on taxes is never justifiable by 13.9 percentage points compared to those who do not care about taxes. This result is statistically significant at the 5 percent level. On the other hand, the acceptance of a tax increase has no statistically significant effect on tax morale.

Finally, model 4 presents the impact of both reciprocity measures on tax morale. As in model 1, the perceived tax evasion of other tax payers and hence the horizontal reciprocity has a statistically significant negative impact on tax morale. An increase in the scale of the perceived number of compatriots who cheat on taxes by one unit decreases the number of respondents reporting that cheating on taxes is never justifiable by 14.3 percentage points. Additionally, considering taxes as necessary contributions increases the probability of considering tax evasion as never justifiable by 16 percentage points. Among the control variables, the observation for the age groups remains constant. Those between 30 and 49 years are significantly more likely to show higher tax morale than those who are younger. Additionally, stating that paying taxes is a big financial problem decreases tax morale by 47 percentage points.<sup>8</sup>

The estimated results suggest that both reciprocity measures significantly contribute to the impact of conditional cooperation on tax morale. Moreover, the marginal effect of the significant vertical reciprocity question exceeds the marginal effect of the question towards the horizontal reciprocity. However, it has to be tested whether these two measures are significantly different in order to estimate the dominant effect. Therefore the Wald test is exploited. A p-value of 0.002 indicates that vertical reciprocity is significantly different from horizontal reciprocity. Thus, tax morale in this study on Vietnam is significantly more affected by vertical than by horizontal reciprocity.

## 7 Robustness checks

As presented in table 3, dummy variables in the type of fixed effects for the supermarkets were included into regression model 4 from table 2. However, the size of the marginal effects only slightly changes but no change of the significance levels of the explained variables can be observed. Additionally, ordered logit regression models were used to test the robustness of the estimations but again there are no significant differences to the estimations from the ordered probit models. Moreover, the Variance Inflation Factors were estimated in order to test the existence of multicollinearity among the independent variables. However, no multicollinearity was found.

## 8 Test of interactions

Finally, the effects from interactions between the reciprocity measures and the socio-economic indicators on tax morale were tested. For that the *inteff* command in *Stata* was employed. Because this command only works after dichotomous models, the initial dependent variable *tax morale* was collapsed into either considering cheating on taxes as never justifiable at the one side of the extreme or as sometimes and always justifiable at the other. Additionally, a dummy variable was created for the perceived extend of tax evasion or the horizontal reciprocity. This dummy distinguishes between believing that many or almost everybody

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<sup>8</sup>For education it was also tested for university graduates against all lower levels but the differences are of no statistical significance. Thus, people of all educational levels are equally opposed to cheating on taxes.



cheats on taxes at the one extreme and thinking that only some or almost no one cheat at the other. In the following only those results are discussed for which statistical significance could be found.

As presented in the two graphs belonging to figure 6, the marginal effects of those respondents who hold a university degree and consider taxes as necessary contributions are always positive. This result is at the 5 percent border of statistical significance for some of those respondents who have a probability between 50 and 90 percent for considering cheating on taxes as not justifiable. The negative impact from the horizontal reciprocity is higher for those with a lower educational attainment. As presented in figure 7, the coefficients of the marginal effects of the interaction between those who believe that many people or almost everybody in Vietnam cheats on taxes and who are holding a high school degree are always negative and mostly significant. Finally, it was found that those who spent more lifetime in the City of Hue and believe that many or almost everybody of their compatriots cheat on taxes are significantly more likely having a lower tax morale (figure 8). This may result from their increased experiences with tax related issues compared to those who spent less time in that urban place.

## 9 Conclusion

The main objective of this paper was to analyze how reciprocity influences tax morale in Vietnam. While the existing literature either focuses on the effects of conditional cooperation or the interactions between tax payers and the state, this paper brings together both dimensions in an empirical study. It estimates the effects of horizontal and vertical reciprocity on tax morale in a case study from Vietnam. The main results are that both measures significantly affect tax morale but that the effects from vertical reciprocity are dominant. Within the socio-economic characteristics, those with a university degree and a positive attitude towards tax payments have a higher tax morale while those with a lower educational attainment (e.g. high school degree) and higher perception of compatriots who cheat on taxes show lower tax morale.

This study provides an example of how the effects from reciprocity on tax morale can be empirically estimated and hence complement experimental studies. However, much work remains to be done in order to achieve a sufficient understanding of the intrinsic motivation of tax payers to comply. Firstly, it would be fruitful to identify which reference groups are relevant for the tax compliance decision. Secondly, the discussion about the empirical estimation of tax morale challenges to compare actual tax payments with the stated tax morale. Thirdly, it is necessary to estimate which experiences with the government shape the vertical reciprocity preferences. In fact, the current lack of an appropriate measurement tool challenges to clarify which experiences are most important in order to estimate vertical reciprocity. Finally, due to the fact that most of the questions needed to analyze vertical reciprocity in relation to taxation are not part of the World Value Survey anymore, more country based studies are needed that allow for international comparisons.

With regard to policy recommendations that can be drawn from this study, one may conclude that the government should exploit its impact on the society to increase tax payments. This is due to the importance of vertical reciprocity and the high level of positive attitudes towards taxes. In fact, the government should communicate for what useful purposes the tax payments are spent. On the other hand, the significant negative impact of horizontal reciprocity on tax morale indicates that they should avoid communicating that cheating on taxes is a bigger problem in Vietnam because this could lead to a significant reduction of the tax morale in general.

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Table 1: Summary statistics

Variable	Description	Sample mean	Stand. dev.
Age		36.12	12.58
Male	Respondent is male	0.395	0.49
Share	Share of lifetime spent in the City of Hue	0.738	0.38
Education	Highest degree of education		
University		0.473	0.50
Vocational		0.223	0.42
High Sch.		0.173	0.38
Secondary		0.097	0.30
Primary		0.027	0.16
None		0.007	0.08
Occupation	Current professional status matched with a subgroup		
White-collar		0.373	0.48
Blue-collar		0.100	0.30
Service		0.183	0.39
Civil servants		0.087	0.28
Students		0.110	0.31
Retired		0.060	0.24
Others		0.087	0.28

Figure 1: Tax morale

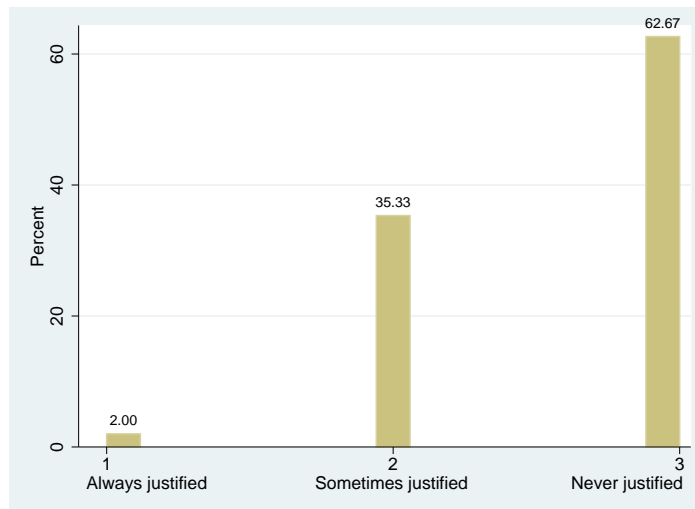


Figure 2: Perceived scope of compatriots cheating on taxes

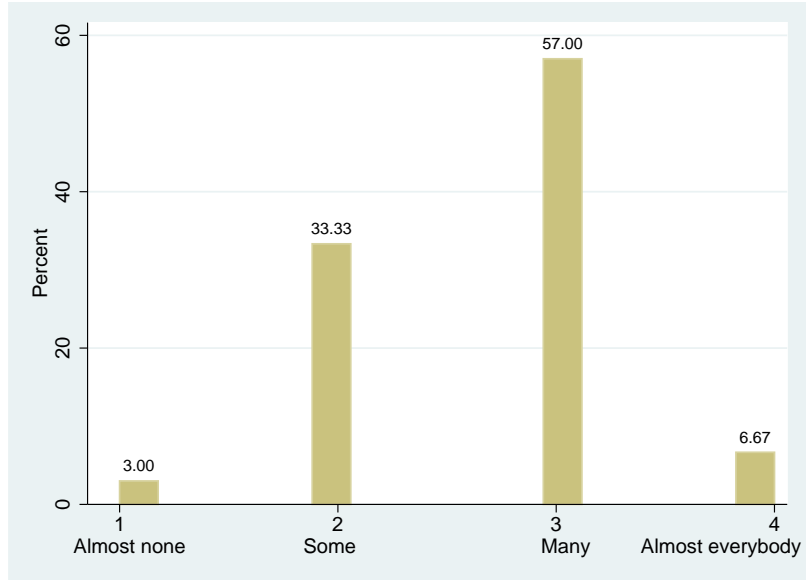


Figure 3: Attitudes towards paying taxes

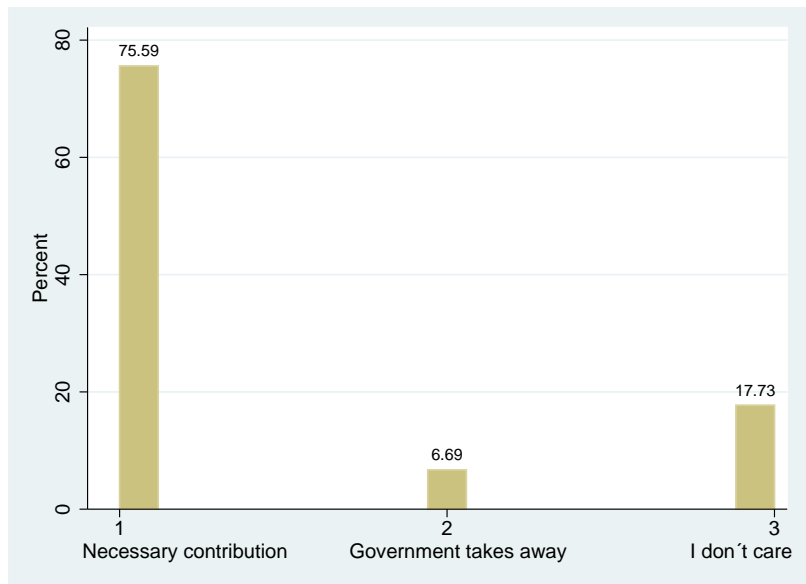


Figure 4: Acceptance of a tax increase

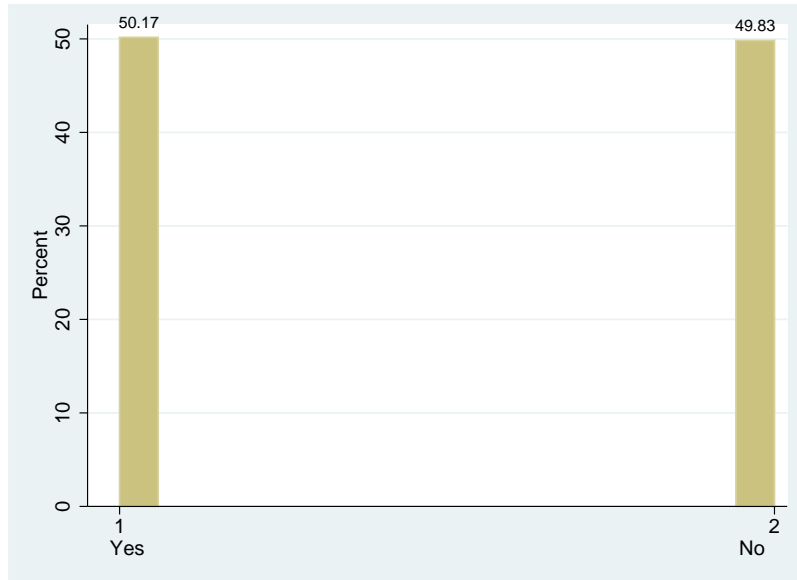


Figure 5: Perceived financial burden from paying taxes

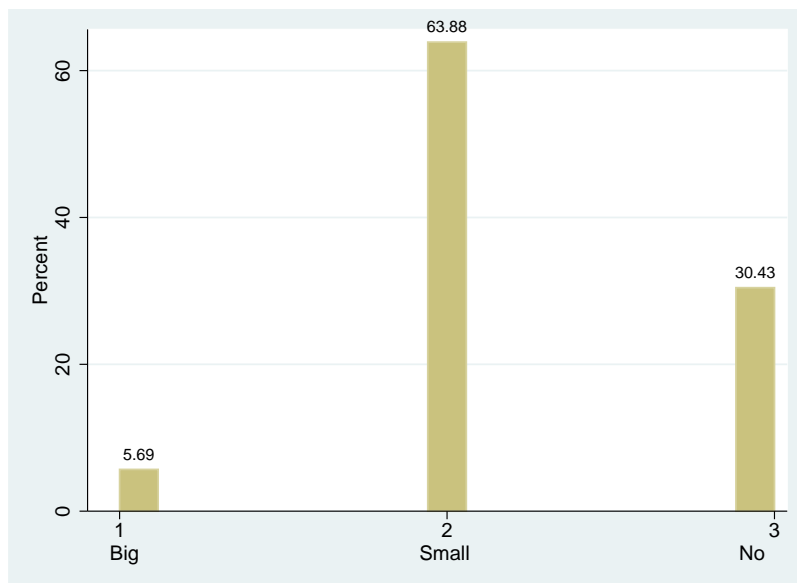


Table 3: Tax Morale and Reciprocity

Ordered Probit Estimation			
Tax Morale	Coeff.	z-Stat.	Marginal Effects
<b>Horizontal reciprocity</b>			
Perceived tax evasion	-0.365***	-2.83	-0.137
<b>Vertical reciprocity</b>			
Necessary contributions	0.439**	2.07	0.164
Gov. takes money away	0.470	1.28	0.176
Accept tax increase	0.130	0.81	0.049
<i>(1) Demographic factors</i>			
Age 30-39	0.516**	2.44	0.193
Age 40-49	0.836***	3.00	0.313
Age 50-59	0.016	0.05	0.006
Age 60-69	0.676	1.25	0.253
Age 70+	-1.040	-1.54	-0.389
Male	0.121	0.74	0.045
Total lifetime spent in Hue	-0.311*	-1.84	-0.117
<i>(2) Perceived tax burden</i>			
Big	-1.263***	-3.61	-0.473
<i>(3) Education</i>			
University	-0.366	-1.07	-0.137
Vocational	-0.403	-1.20	-0.151
High School	-0.558	-1.78	-0.209
<i>(4) Occupational status</i>			
Blue-collar	-0.061	-0.20	-0.023
White-collar	-0.203	-0.78	-0.076
Civil servants	-0.067	-0.19	-0.025
Student	0.188	0.58	0.070
Retired	0.418	0.90	0.156
Others	0.126	0.35	0.047
<i>(5) Markets</i>			
Market 1	0.371*	-1.82	-0.139
Market 2	-0.223	-1.05	-0.083
Cut1	-3.450		
Cut2	-1.415		
N	295		
Pseudo R <sup>2</sup>	0.117		

Notes: (I.) Dependent Variable: Acceptance of cheating on taxes (tax morale) that consists on a scale from 1 to 3. (II.) The marginal effects of the highest level of tax morale (3) are reported. (III.) The reference group is given by females under 30 years of age, with an educational degree less than high school, who are employed in the service sector, perceive their tax payments as small or no financial problem and did not spent their total lifetime in the City of Hue. (IV.) Significantly different from zero at 90% (\*), 95% (\*\*) and 99% (\*\*\*) confidence.



Table 2: Tax Morale and Reciprocity

Ordered Probit Estimations	Model 1	Model 2	Model 3	Model 4					
Tax Morale	Coeff.	Marginal Effects	z-Stat.	Coeff.	Marginal Effects	z-Stat.	Coeff.	Marginal Effects	
<b>Horizontal reciprocity</b>									
Perceived tax evasion	-0.316**	-0.119	-2.55				-0.382***	-2.98	-0.143
<b>Vertical reciprocity</b>									
(Q1) Necessary contributions		0.370*	1.81		0.139		0.426**	2.02	0.160
(Q1) Gov. takes money away		0.324	0.91		0.122		0.413	1.14	0.155
(Q2) Accept tax increase				0.031	0.012	0.20	0.063	0.41	0.024
<i>(1) Demographic factors</i>									
Age 30-39	0.396**	0.149	1.98	0.456**	0.172	2.25	0.425**	2.12	0.159
Age 40-49	0.806***	0.303	2.98	0.767***	0.289	2.85	0.807***	3.02	0.303
Age 50-59	-0.095	-0.036	-0.35	-0.013	-0.005	-0.05	-0.036	-0.13	-0.014
Age 60-69	0.349	0.131	0.68	0.470	0.177	0.89	0.293	0.58	0.110
Age 70+	-1.241*	-0.466	-1.87	-1.174*	-0.442	-1.77	-1.209	-1.83	-0.454
Male	0.178	0.067	1.12	0.137	0.052	0.86	0.131	0.83	0.049
Total lifetime spent in Hue	-0.226	-0.085	-1.37	-0.288*	-0.109	-1.74	-0.282*	-1.70	-0.106
<i>(2) Perceived tax burden</i>									
Big	-1.151***	-0.433	-3.55	-1.269***	-0.478	-3.69	-1.161***	-3.58	-0.436
<i>(3) Education</i>									
University	-0.253	-0.095	-0.76	-0.438	-0.165	-1.32	-0.330	-1.01	-0.124
Vocational	-0.299	-0.112	-0.91	-0.378	-0.142	-1.15	-0.321	-0.99	-0.121
High School	-0.436	-0.164	-1.46	-0.546*	-0.205	-1.80	-0.391	-1.31	-0.147
<i>(4) Occupational status</i>									
Blue-collar	0.047	0.017	0.15	-0.029	-0.011	-0.10	-0.049	-0.16	-0.018
White-collar	-0.109	-0.041	-0.43	-0.148	-0.056	-0.58	-0.145	-0.57	-0.055
Civil servants	-0.003	-0.001	-0.01	-0.000	-0.000	-0.00	0.036	0.11	0.014
Student	0.188	0.071	0.60	0.166	0.063	0.53	0.158	0.50	0.059
Retired	0.574	0.216	1.26	0.442	0.166	0.97	0.498	1.10	0.187
Others	0.302	0.114	0.89	0.343	0.129	0.99	0.339	0.99	0.127
Cut1	-3.306	-2.325		-2.498			-2.498		-3.324
Cut2	-1.322	-0.354		-0.562			-0.562		-1.303
N	297	296		296			296		295
Pseudo R <sup>2</sup>	0.093	0.088		0.080			0.109		0.109

Notes: (I.) Dependent Variable: Acceptance of cheating on taxes (tax morale) that consists on a scale from 1 to 3. (II.) The marginal effects of the highest level of tax morale (3) are reported. (III.) The reference group is given by females under 30 years of age, with an educational degree less than high school, who are employed in the service sector, perceive their tax payments as small or no financial problem, did not spend their total lifetime in the City of Hue and do not care about taxes.

(IV.) Significantly different from zero at 90% (\*), 95% (\*\*), 99% (\*\*\*) and 99% (\*\*\*\*) confidence.

Figure 6: Taxes are necessary contributions and university degree

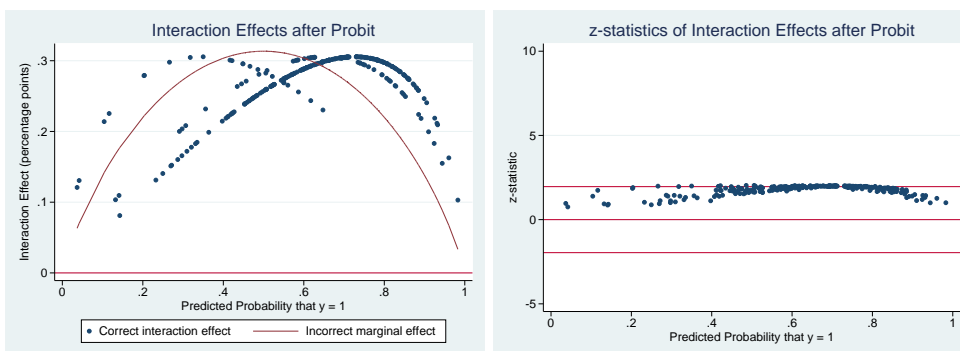


Figure 7: Many or almost everybody cheat on taxes and high school degree

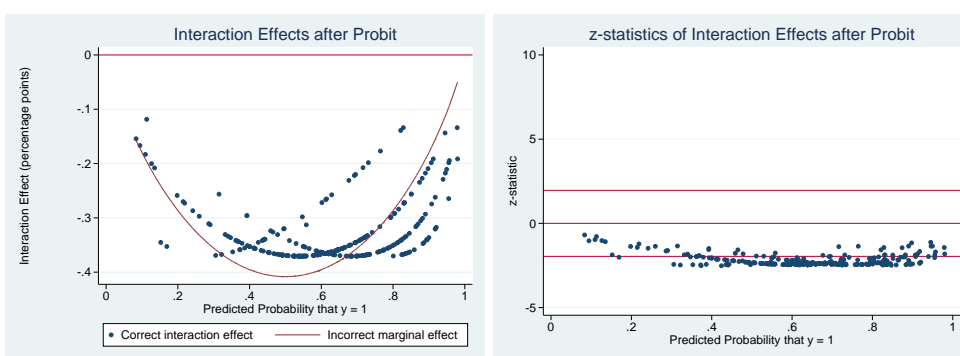


Figure 8: Many or almost everybody cheat on taxes and lifetime spent in Hue

