Tolerance of Corruption Among Students in Latin America

Diego Carrasco and Andrés Pavón Mediano

Abstract Anti-corruption reforms introduced in Latin America in the last decade require active citizenry. In particular, efforts to strengthen transparency laws assume citizens are able to identify, condemn, and denounce corrupt acts. Thus, tolerance of corruption among citizens is problematic for these institutions. Using data from IEA's International Civic and Citizenship Education Study (ICCS) 2016, this chapter analyzes which students are at higher risk of tolerating corruption and address how schools may promote the endorsement of anticorruption norms. A series of multilevel models were used to predict tolerance of corruption. The main findings suggest that civic knowledge and endorsement of authoritarianism are the main predictors of tolerance of corruption among students, accounting for 49% of the variance at the population level. In multilevel models, open classroom discussion is negatively related to tolerance of corruption. However, once civic knowledge is entered into the model, the relationship seems to be indirect. This chapter discusses how promoting open classroom discussion and civic knowledge in schools may prevent tolerance of corruption.

Keywords Citizenship · Corruption · Authoritarianism · Education · International Civic and Citizenship Education Study (ICCS)

1 Introduction

There is a consensus that civic education is one of the pillars of the anti-corruption agenda. Indeed, the three-pronged approach to fighting corruption consists of enforcement, prevention, and education (Marquette 2007). In this framework, education raises awareness about corruption, by disseminating information, promoting

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social norms, and teaching skills and abilities to counter corruption (Keen 2000). What explains students' social norms of corruption? Addressing this problem has implications for educational and anti-corruption policy since identifying which students are at higher risk of tolerance to corruption is critical to designing educational interventions tailored to those in greatest need (Pop 2012). To this end, this chapter aims to answer the following two questions: "What are the predictors of students' tolerance of corruption?" and "How can schools promote support for anti-corruption norms?" These questions aim to measure the risk of students' acceptance of corrupt acts and to assess the indirect role of open classroom discussion on how willing they are to tolerate corruption.

Using data from the International Civic and Citizenship Education Study (ICCS) 2016, conducted by the International Association for the Evaluation of Educational Achievement (IEA), including student responses from Chile, Colombia, the Dominican Republic, Mexico, and Peru, we fit a series of multilevel models. With the results of these models, we analyze the association of parents' education, open classroom discussion, the student's civic knowledge, authoritarian beliefs, and the endorsement of citizenship norms as predictors of students' tolerance of corruption. Results show that civic knowledge, and particularly endorsement of authoritarianism, is the main predictor of students' acceptance of corrupt acts, accounting for 49% of the variance at the population level. Moreover, students in schools with higher levels of open classroom discussion present lower levels of tolerance of corruption. These results are consistent with the role of open classroom discussion as a factor that protects against the endorsement of authoritarianism (Hahn and Tocci 1990), and promotes civic knowledge (Isac et al. 2011; Lin 2014). These findings have broad implications for two anti-corruption policies that have become popular in recent decades in Latin America: transparency laws and civic education (Rehren 2008; Rose-Ackerman and Palifka 2016). In the following sections, we review the literature, present our results, and discuss the relationship between current anti-corruption efforts and students' expected role.

2 Conceptual Background

Tolerance of corruption is the willingness of people to consider corrupt acts as normal and not worthy of punishment (Pop 2012). In this chapter, we inquiry students' tolerance of corruption as the endorsement of injunctive norms or, in other terms, if different acts of corruption are deemed acceptable or not (Köbis et al. 2015). Thus, tolerance of corruption helps to identify a moral limit: it distinguishes what is condemned from what is allowed. Nonetheless, these social norms are expected to vary between different contexts, as certain corrupt acts may be more frequent in some countries than others (Guo and Tu 2017), and also within certain populations (Lavena 2013; Zakaria 2018).

Who is at higher risk of tolerance of corruption? The literature highlights different predictors. Students from families with lower levels of education are at higher risk

of endorsing tolerance of corruption. As the intergenerational hypothesis asserts, children inherit the political inequalities of adults (Schlozman et al. 2012). Thus, it should be expected that educational gaps in the tolerance of corruption by adults would be replicated in students. These gaps are present among adults, where tolerance of corruption is higher among those with a lower level of education (Lavena 2013; Zakaria 2018).

Moreover, we expect students with lower civic knowledge to present higher levels of tolerance of corruption (Schulz 2018a; Schulz et al. 2011)—we call this the "sophistication hypothesis." For instance, highly politically sophisticated students can identify why countries have laws that restrict media ownership to ensure a diversity of views. In contrast, students who fail to understand why media ownership needs to be regulated are less politically sophisticated (Schulz et al. 2013). The condemnation of corrupt acts by public officials requires citizens that comprehend political institutions (Lavena 2013) and understand the consequences of corrupts acts (Wang and Bernardo 2017). Hence, we assume that students with higher political sophistication are more prepared to understand the consequences of corruption and more equipped to reject corrupt acts by public officials.

The endorsement of authoritarianism is another predictor of tolerance of corruption (Carrasco et al. 2020). Authoritarianism is a tendency to support strong authorities (Altemeyer 1981), favoring uncritical obedience and respect for such authorities (Duckitt et al. 2010). This factor is a general predictor of different political behaviors (Krosnick 2005), including prejudice (Sibley and Duckitt 2008), social conformity (Feldman 2003), and support for authoritarian governments (Stevens et al. 2006). Different studies have linked corruption and authoritarianism. Survey studies have found that people with a high endorsement of authoritarianism present higher corruption intention (Tan et al. 2015), and more tolerance of corruption (Wang and Bernardo 2017). Complementary, experimental studies have shown that more authoritarian people are more permissive of unethical behavior by authorities (Bocchiaro and Zimbardo 2017; Son Hing et al. 2007). Thus, we expect a higher tolerance of corruption from more authoritarian students, under the assumption that corrupt acts are a particular example of unethical behaviors (Moore 2008; Nwabuzor 2005). Previous research, using data from ICCS 2009, has found this relation among grade 8 students from six Latin American countries (Carrasco et al. 2020), where higher endorsement of authoritarianism is associated with higher tolerance of corruption. Thus, in the present study, we expect students with high endorsement of authoritarianism to present higher tolerance of corruption. We interpreted citizens' rejection of corruption by public officials as a form of pro-social disobedience, which requires citizens who think critically about their authorities (Pozzi et al. 2014). Hence, students with low endorsement of authoritarianism should be less tolerant of corruption. We call this the "ideological belief hypothesis" (Carrasco et al. 2020).

Finally, the endorsement of general citizenship norms should be consistent with tolerance of corruption. People are willing to reject corrupt acts in the name of overarching principles such as the "public good" and "fairness" (Jackson 2018), as if they have internalized a moral compass, regardless of what others do (Köbis et al. 2018). Thus, internalized common principles can orient why corruption should be rejected.

Similarly, the internalization of social norms regarding the law is expected to guide people's behaviors. Therefore, if different corrupt acts are unlawful, then adherence to the rule of law should be negatively associated with tolerance of corruption. Students with law-abiding profiles—including engaged, duty-based, and comprehensive—express the highest agreement for obeying the law as a distinctive feature of good citizenship, in contrast to anomic and monitorial students. Hence, we expect students with law-abiding profiles to condemn acts of corruption. Factor analytic studies on citizenship norms have found that obeying the law clusters together with other ethical behaviors, such as paying taxes, in comparison to other citizenship norms (Denters et al. 2007; van Deth 2007). These results are consistent with the expected correlation between tolerance of corruption and obeying the law. However, these law-abiding profiles also present the highest respect for government representatives, which may prevent them from being critical of authorities and impede their rejection of corrupt acts (Bocchiaro and Zimbardo 2017; Son Hing et al. 2007). As a result, the endorsement of general citizenship norms does not provide a clear hypothesis regarding its relationship to tolerance of corruption. Hence, we have chosen to study the relationship between the endorsement of citizenship norms and tolerance of corruption in conjunction with the previously proposed factors.

How can schools prevent tolerance of corruption? Schools may prevent tolerance of corruption by providing learning opportunities that mitigate the effects of the previously identified risk factors: less educated family environments, less civic knowledge, and higher endorsement of authoritarianism.

Open classroom discussion in schools is a practice that may help to mitigate these risk factors. This occurs in school environments where teachers guide discussions between students related to political and social issues (Carrasco and Torres Irribarra 2018). It is not merely the exposure to discussions in the classroom that is important, but also learning environments in which students can discuss with their peers and teachers, express their opinions, and make up their own minds (Ehman 1969). In other words, it is a school practice that encourages students to ask questions and seek answers in a meaningful context, helping to ensure that facts and controversies are understood and remembered (Harris 1996).

Schools that promote open classroom discussion of political and social issues are expected to mitigate the effect of growing up in less-educated families (Hoskins et al. 2017). Families with less-educated parents are less likely to have open discussions (Bernstein 2003), and parents from these families are less likely to debate political topics (Campbell 2008). Therefore, students from less-educated families who attend schools that promote open classroom discussion of political and social issues would benefit from this practice.

The level of political sophistication of students is expected to vary systematically depending on their socioeconomic background. According to the intergenerational transmission hypothesis, if no intervening educational process occurs, the political sophistication of a student can be predicted based solely on his/her family background. However, school effectiveness models related to civic knowledge show that although the socioeconomic background of the students can explain a large portion of the variance, a significant part of the variance among schools is accounted for by

levels of open classroom discussion (Isac et al. 2011; Lin 2014). Hence, schools may help to promote civic knowledge acquisition of the students over and above their socioeconomic background.

Authoritarianism endorsement also shows intergenerational effects, as it is passed on from parents to children, directly or indirectly, via the need for closure (Dhont et al. 2013). Need for closure is an individual tendency associated with the endorsement of authoritarianism, which consists of individuals who seek firm answers to their questions. People with a high need for closure preferred any firm answer to confusion and ambiguity (Kruglanski 2004). School practices designed to lessen the need for closure can theoretically reduce other political attitudes explained by the endorsement of authoritarianism (Van Hiel et al. 2004). Open classroom discussion fits this purpose. It encourages students to express their opinions and discuss different points of view (Ehman 1969), as well as encouraging them to embrace political conflict (Campbell 2008), thereby counteracting the need for closure. Previous research is consistent with this expectation: students exposed to higher levels of open classroom discussion are more knowledgeable and less likely to support authoritarian practices (Hahn and Tocci 1990).

The next section presents the method and strategy to test these expectations and hypotheses based on ICCS 2016, using data from students in five Latin American countries.

3 Method

The present study uses data from IEA's ICCS 2016 (Schulz et al. 2018b), including representative samples of grade 8 students from Chile, Colombia, the Dominican Republic, Mexico, and Peru. We retrieved responses and scores from the student questionnaire and the students' test data. ICCS 2016 includes data from classrooms in at least 150 schools in each participating country, including more than 5000 students on average. We describe the dependent and independent variables below.

Dependent variable. Tolerance of corruption is measured through an item response theory (IRT) score generated scale, based on responses of students to six statements expressing acceptance of corrupt practices in government that ranged from *strongly disagree* to *disagree*, *agree*, or *strongly agree*. An example statement is: "Good candidates grant personal benefits to voters in return for their votes." This score has an expected international mean of 50, with a standard deviation of 10 points, and fulfills measurement invariance between countries (Schulz et al. 2018c).

Independent variables. As predictors for the study, we included parents' education, open classroom discussion, and students' civic knowledge, endorsement of authoritarianism, and citizenships norms. The latter is a nominal variable, which classified students using their responses to 12 items regarding different citizenship norms, such as voting, discussing politics, participating in protests, and being law-abiding citizens. These different profiles are described in Chap. 3. In the following section, we briefly describe our selected variables (see Table 1).

Table 1 Independent variables from ICCS 2016

Variable	Independent variables (type)	Description
edu_{ij}	Parents' education (dummy)	Students report the highest educational degree completed by their parents. We dummy coded their responses, indicating 1 for students with at least one parent with tertiary studies (ISCED 6, 7, or 8) and 0 for the rest
opd_{ij}	Open classroom discussion (continuous)	Open classroom discussion is a Likert-type scale, where students report how frequent open discussion occurs in the classroom based on six items. Higher scores indicate reports of more frequent open discussion in the classroom
civ_{ij}	Civic knowledge (continuous)	Five plausible values stand for student civic knowledge scores. These scores are generated with an IRT model and scaled to a mean of 500 for equally weighted countries and a standard deviation of 100 points
aut_{ij}	Authoritarianism (continuous)	Authoritarianism is a Likert-type scale, which synthesizes responses of students to nine affirmations. Higher scores express higher students' endorsement of authoritarian government practices
$cn1_{ij} - cn5_{ij}$	Citizenship norms (dummy)	Citizenship norms profiles are latent class realizations. Is nominal variable including comprehensive, socially-engaged, duty-based, monitorial, and anomic profiles. These variables were dummy coded, generating five different dummy variables. For the fitted models, we used the comprehensive profile as the reference category

Source All variables were retrieved from ICCS 2016 public data files, with the exception of citizenship norms, described in Chap. 3. Full details of items and scale are available from the ICCS 2016 technical report (Schulz et al. 2018c) and user guide (Köhler et al. 2018)

Open classroom discussion and the endorsement of authoritarianism are IRT generated scores, with an expected mean of 50 for equally weighted countries and a standard deviation of 10 points. Civic knowledge is also an IRT generated score, scaled to have a mean of 500 and a standard deviation of 100 points (Schulz et al. 2018c). We divided this latter variable by 10 so all covariates in the study have unstandardized coefficients of similar size, where 1 point is 1/10 of the international standard deviation. We provide population estimates and descriptive values of the selected variables in their original scale, including number of students and number of schools per country in the present study (see Table 2).

Table 2 Population estimates and description of variables included in the study

	Chile		Colombia		Dominican Republic		Mexico		Peru	
Variables	E	(SE)	E	(SE)	E	(SE)	E	(SE)	E	(SE)
Tolerance of corruption (cor_{ij})[a]	47.53	(0.26)	49.13	(0.24)	55.67	(0.28)	50.08	(0.27)	51.34	(0.26)
Parents with tertiary education (edu_{ij})	0.24	(0.01)	0.29	(0.01)	0.24	(0.01)	0.25	(0.01)	0.27	(0.01)
Open classroom discussion (opd_{ij})	52.26	(0.32)	49.28	(0.32)	48.24	(0.39)	51.06	(0.23)	53.03	(0.26)
Civic knowledge (civ_{ij})	482.45	(3.11)	482.11	(3.39)	381.36	(3.04)	467.04	(2.54)	437.71	(3.54)
Authoritarianism (aut_{ij})	45.09	(0.31)	48.16	(0.34)	54.84	(0.26)	49.26	(0.31)	50.85	(0.24)
Citizenship norms										
Engaged ($cn1_{ij}$)	0.35	(0.01)	0.55	(0.01)	0.36	(0.01)	0.15	(0.01)	0.28	(0.01)
Duty-based ($cn2_{ij}$)	0.02	(0.00)	0.01	(0.00)	0.01	(0.00)	0.01	(0.00)	0.02	(0.00)
Monitorial ($cn3_{ij}$)	0.17	(0.01)	0.14	(0.01)	0.08	(0.01)	0.19	(0.01)	0.11	(0.01)
Anomic ($cn4_{ij}$)	0.08	(0.01)	0.02	(0.00)	0.01	(0.00)	0.04	(0.00)	0.01	(0.00)
Comprehensive ($cn5_{ij}$)	0.37	(0.01)	0.28	(0.01)	0.54	(0.01)	0.61	(0.01)	0.58	(0.01)
Number of students	5081		5609		3937		5526		5166	
Number of schools	178		150		141		213		206	

Notes E = Population estimates, (SE) = Standard errors. Citizenship norms are presented as proportion of students per country. [a] Tolerance of corruption is the dependent variable, and the rest are independent variables in the present study. Number of students and number of schools are nominal counts

Analytical strategy. To identify the main predictors of tolerance of corruption between students, we fitted average population models for each predictor (McNeish et al. 2017). These estimates represent the expected relations between our selected variables, if we could randomly sample students out of the population of students. We use Taylor Series Linearization for variance estimation (Stapleton 2013), and scaled survey weights so each country contributes equally to the model estimates (Gonzalez 2012). With the results of these models we aim to answer the question: What are the predictors of students' tolerance of corruption? To guarantee comparability between models, we fitted a saturated model and constrained all parameters to zero for the rest of the non-target covariates. With this strategy, we fitted six nested models and retrieved the explained variance for each factor.

To answer the question of how schools can promote support for anti-corruption norms, we fitted a series of multilevel models following the same strategy and produced six nested models. With this nesting strategy we can compare models using a likelihood ratio test (LRT) to answer our research question (Snijders and Bosker 2012). Survey weights were partitioned and scaled to the effective sample size, and pseudo strata were included in the model estimation of these multilevel models (Stapleton 2013). Civic knowledge scores were included as imputed values to account for their measurement error in all fitted models (Rutkowski et al. 2010).

All covariates were centered on the cluster mean to estimate the relative differences of students within schools (Enders and Tofighi 2007). We also included school means centered to the grand mean of each covariate to assess their associations to school relative differences. We fitted a null model to describe the variability between schools (Model 0); a country fixed effects to estimate how much variance is explained by country differences (Model 1); an educational gap model (Model 2), where we included parents' education to test the intergenerational hypothesis. Model 3 includes open classroom scores to assess the contribution of classroom discussion while controlling for the student composition of schools (parents' education). In order to test the sophistication hypothesis, students' civic knowledge was included in Model 4. The interplay between the endorsement of authoritarianism and tolerance of corruption is studied in Model 5. Finally, to what extent general citizenship norms are associated with tolerance of corruption is studied in Model 6. Equation 1 expresses the within school model, and Eq. 2 specifies the between school model:

$$\begin{aligned} cor_{ij} = \pi_{0j} &+ \pi_{5j}\left(edu_{ij} - \overline{edu}_{.jk}\right) + \pi_{6j}\left(opd_{ij} - \overline{opd}_{.jk}\right) + \pi_{7j}\left(civ_{ij} - \overline{civ}_{.jk}\right) \\ &+ \pi_{8j}\left(aut_{ij} - \overline{aut}_{.jk}\right) + \pi_{9j}\left(cn1_{ij} - \overline{cn1}_{.jk}\right) + \pi_{10j}\left(cn2_{ij} - \overline{cn2}_{.jk}\right) \\ &+ \pi_{11j}\left(cn3_{ij} - \overline{cn3}_{.jk}\right) + \pi_{12j}\left(cn4_{ij} - \overline{cn4}_{.jk}\right) + \varepsilon_{ij} \end{aligned} \tag{1}$$

$$\begin{aligned} \pi_{0j} = \beta_{00} &+ \beta_{01}CHL + \beta_{02}COL + \beta_{03}DOM + \beta_{04}PER + \beta_{05}\left(\overline{edu}_{.jk} - \overline{edu}_{...}\right) \\ &+ \beta_{06}\left(\overline{opd}_{.jk} - \overline{opd}_{...}\right) + \beta_{07}\left(\overline{civ}_{.jk} - \overline{civ}_{...}\right) + \beta_{08}\left(\overline{aut}_{.jk} - \overline{aut}_{...}\right) \\ &+ \beta_{09}\left(\overline{cn1}_{.jk} - \overline{cn1}_{...}\right) + \beta_{10}\left(\overline{cn2}_{.jk} - \overline{cn2}_{...}\right) + \beta_{11}\left(\overline{cn3}_{.jk} - \overline{cn3}_{...}\right) \\ &+ \beta_{12}\left(\overline{cn4}_{.jk} - \overline{cn4}_{...}\right) + r_{0j} \end{aligned} \tag{2}$$

4 Results

Main predictors. We fit a single population model with each covariate to retrieve the accounted variance for each predictor alone. Country differences account for 7% ($R^2 = 0.07$), parents' education (tertiary degree) explains 1% ($R^2 = 0.01$), students' reports of open classroom discussion account for 3% ($R^2 = 0.03$), students' civic knowledge explains 16% ($R^2 = 0.16$), and students' endorsement of authoritarianism accounts for 48% ($R^2 = 0.48$), while citizenship norms account for 1% ($R^2 = 0.01$). Altogether, these covariates account for 49% of tolerance of corruption among students. The main predictors are civic knowledge, which is negatively related to tolerance of corruption ($r = -0.40$), and the endorsement of authoritarianism, which is a positive predictor ($r = 0.69$). We present these overall relations with scatter plots for these two covariates (see Fig. 1).

Multilevel estimates. Tolerance of corruption presents a significant portion of variance between schools of 14% (ICC = 0.14, SE = 0.01). We compared the saturated model (Model 6), with the null model with no predictors. We find that the specified model fits the data well (LRT (20) = 15,389.27, $p < 0.01$). At level 1, the model accounts for 44% of the variance, while at level 2, the model accounts for 94% of the variance. To describe the results, we used the coefficient terms presented in Eqs. 1 and 2 to refer to the unstandardized estimates, including their standard errors (SE), p-values (p), and standardized coefficients (β). We present the unstandardized and standardized estimates in parenthesis of the fitted models (see Tables 3, 4, and 5).

Country differences account for a small portion of the variance in the population models, thus, we include countries as fixed effects between schools. In Model 1, countries account for 16% of the variance between schools. However, when we

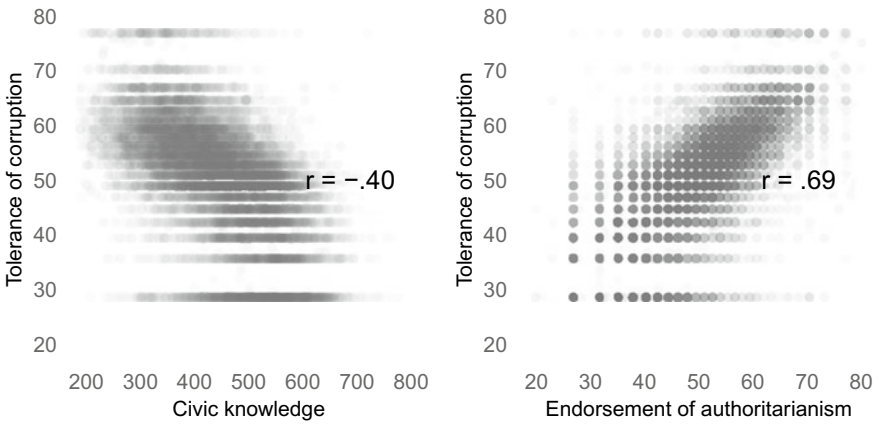

Fig. 1 Scatter plot for tolerance and corruption and its main predictors, civic knowledge and students' endorsement of authoritarianism *Notes* Correlations derived from the fitted models between Tolerance of corruption with Civic knowledge and Endorsement of authoritarianism, for the equally weighted countries

include all covariates in Model 6, country fixed effects are close to zero, except for Peru ($\beta_{04} = -0.63$, SE = 0.27, $p < 0.05$, $\beta = -0.09$), which presents a lower level of tolerance of corruption compared to Mexico. Thus, most of the country's differences are explained by the selected factors (see Table 3).

In Model 2, we distinguish between students from families with at least one parent with a tertiary educational degree and the rest of their peers. In this model, we observed a small difference between students at level 1 ($\pi_{5j} = -0.83$, SE = 0.29, $p < 0.01$, $\beta = -0.03$). This overall difference is much larger between schools ($\beta_{05} = -8.97$, SE = 0.29, $p < 0.01$, $\beta = -0.61$). As such, there is a large difference between schools not accounted for by students' composition, when no other covariates are considered ($\beta_{05} - \pi_{5j} = -8.14$, SE = 0.92, $p < 0.01$, $\beta = -0.57$). Nevertheless, in Model 6, all these effects are near zero (see Tables 4 and 5).

In Model 3, we include open classroom discussion. This factor is a reflective measure of a school classroom practice obtained using students' responses (Stapleton et al. 2016). As such, only the between school component is a factor of interest (Lüdtke et al. 2009). We observed a negative relation to this school practice ($\beta_{06} = -0.30$, SE = 0.04, $p < 0.001$, $\beta = -0.33$). Thus, schools with higher levels of open classroom discussion present lower levels of tolerance of corruption, independent of the education level of students' parents.

In Model 4, civic knowledge of students is entered into the model. This factor presents a large negative relation ($\pi_{7j} = -0.58$, SE = 0.29, $p < 0.01$, $\beta = -0.55$) at level 1. Between schools, this factor does not present a substantive relation ($\beta_{07} = -0.01$, SE = 0.04, p = 0.74, $\beta = -0.05$). Thus, this factor is a variable that explains differences among students in their tolerance of corruption, without presenting any contextual effect. Once this factor is included in the model, the previous effect of classroom discussion is diminished ($\beta_{06} = -0.02$, SE = 0.04, p = 0.70, $\beta = -0.04$), pointing to a plausible indirect effect (Fritz and MacKinnon 2008). We assess the difference between parameter β_{06} from Model 3 (the overall effect c) and β_{06} from Model 4 (the adjusted effect c') with a likelihood ratio test. This test supports that this difference is substantial ($\beta_{06\ \text{model 3}} - \beta_{06\ \text{model 4}} = -0.28$, LRT (2) = 6320.35, $p < 0.01$).

In the next step (Model 5), we entered authoritarianism endorsement scores. This factor is a positive predictor of tolerance of corruption. At level 1, higher levels of authoritarianism endorsement is associated with higher levels of tolerance of corruption ($\pi_{8j} = 0.48$, SE = 0.01, $p < 0.01$, $\beta = -0.52$); at the school level, similar unstandardized effect sizes are observed ($\beta_{08} = -0.54$, SE = 0.03, $p < 0.01$, $\beta = -0.98$). We assess its contextual effects, yet this difference is rather small ($\beta_{08} - \pi_{8j} = 0.05$, SE = 0.03, p = 0.09). The effect of civic knowledge, at level 1, is partially accounted for by authoritarianism endorsement, with its coefficient reduced by half ($\pi_{7j} = -0.24$, SE = 0.29, $p < 0.01$, $\beta = -0.24$).

In the saturated model (Model 6), we included the dummy coded variable of citizenship norms profiles. We have left the comprehensive configuration as the reference group. At level 1, the anomic students present lower levels of tolerance of corruption, than the comprehensive students ($\pi_{12j} = -1.29$, SE = 0.40, $p < 0.001$, $\beta = -0.02$); in contrast, students in the monitorial profile are expected to present

Table 3 Multilevel model estimates predicting tolerance of corruption among students, including intercepts, country fixed effects, and variances

		Fitted models											
Parameter	Variable	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
β_{00}	Intercept (Mexico)	50.56	***	50.11	***	50.59	***	51.23	***	50.59	***	50.73	***
		14.17	***	13.99	***	14.06	***	35.53	***	18.29	***	18.34	***
β_{01}	Chile	− 2.32	***	− 2.35	***	− 1.98	***	− 1.63	***	− 0.10		− 0.36	
		(−0.18)		(−0.18)		(−0.15)		(−0.32)		(−0.01)		(−0.04)	
β_{02}	Colombia	− 1.11		− 0.41		− 1.05	*	− 0.15		− 0.10		− 0.32	
		(−0.12)		(−0.04)		(−0.11)		(−0.04)		(−0.01)		(−0.04)	
β_{03}	Dominican Republic	4.45	***	4.87	***	4.12	***	0.18		0.25		0.13	
		(0.28)		(0.30)		(0.26)		(0.03)		(0.02)		(0.01)	
β_{04}	Peru	1.32	**	1.71	***	2.02	***	− 0.84	*	− 0.41		− 0.63	*
		(0.14)		(0.19)		(0.22)		(−0.23)		(−0.06)		(−0.09)	
ε_{ij}	Residual variance	81.52	***	81.43	***	80.34	***	62.84	***	45.61	***	45.50	***
r_{ij}	School variance	10.70	***	6.08	***	5.01	***	1.74	***	0.50	***	0.48	***

Notes Unstandardized estimates are presented, and standardized estimates are included in parenthesis. *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$

Table 4 Within school estimates for variables predicting tolerance of corruption among students

		Fitted models									
Parameter	Variable	Model 2		Model 3		Model 4		Model 5		Model 6	
π_{5j}	Parents with tertiary education (edu_{ij})	− 0.83	**	− 0.80	**	− 0.09		− 0.02		− 0.04	
		(−0.03)		(−0.03)		(0.00)		(0.00)		(0.00)	
π_{6j}	Open classroom discussion (opd_{ij})			− 0.11	***	− 0.02		− 0.02	*	− 0.02	*
				(−0.11)		(−0.02)		(−0.02)		(−0.02)	
π_{7j}	Civic knowledge (civ_{ij})					− 0.58	***	− 0.24	***	− 0.25	***
						(−0.55)		(−0.24)		(−0.25)	
π_{8j}	Authoritarianism (aut_{ij})							0.48	***	0.48	***
								(0.52)		(0.52)	
π_{9j}	Engaged ($cn1_{ij}$)									− 0.10	
										(0.00)	
π_{10j}	Duty-based ($cn2_{ij}$)									0.56	
										(0.01)	
π_{11j}	Monitorial ($cn3_{ij}$)									0.42	*
										(0.02)	
π_{12j}	Anomic ($cn4_{ij}$)									− 1.29	**
										(−0.02)	

Notes Unstandardized estimates are presented, and standardized estimates are included in parenthesis. Model 1 is not included in this table because it is empty for these variables. *** = p < 0.001, ** = p < 0.01, * = p < 0.05

Table 5 Between school estimates for variables predicting tolerance of corruption among students

		Fitted models									
Parameter	Variable	Model 2		Model 3		Model 4		Model 5		Model 6	
β_{05}	Parents with tertiary education ($edu_{.j}$)	− 8.97	***	− 7.84	***	− 0.72		0.72		0.74	
		(−0.61)		(−0.53)		(−0.12)		(0.06)		(0.06)	
β_{06}	Open classroom discussion ($opd_{.j}$)			− 0.30	***	− 0.02		− 0.02		− 0.01	
				(−0.33)		(−0.04)		(−0.03)		(−0.02)	
β_{07}	Civic knowledge ($civ_{.j}$)					− 0.01		0.00		− 0.01	
						(−0.05)		(−0.01)		(−0.02)	
β_{08}	Authoritarianism ($aut_{.j}$)							0.54	***	0.54	***
								(0.98)		(0.98)	
β_{09}	Engaged ($cn1_{.j}$)									0.75	
										(0.05)	
β_{10}	Duty-based ($cn2_{.j}$)									8.58	**
										(0.11)	
β_{11}	Monitorial ($cn3_{.j}$)									0.50	
										(0.02)	
β_{12}	Anomic ($cn4_{.j}$)									0.05	
										(0.00)	

Notes Unstandardized estimates are presented, and standardized estimates are included in parenthesis. Model 1 is not included in this table because it is empty for these variables. *** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$

higher tolerance of corruption ($\pi_{11j} = 0.42$, SE = 0.40, $p < 0.001$, $\beta = 0.02$). At the school level, we observed that if a school is only attended by duty-based students, then higher tolerance of corruption would be expected from its members ($\beta_{10} = 8.58$, SE = 2.97, $p < 0.001$, $\beta = -0.11$). This latter effect is larger than its within effect, and thus conforms to a contextual effect (β_{10}-$\pi_{10j} = 8.03$, SE = 3.10, $p < 0.05$), as such, schools with a higher proportion of duty-based students are expected to present higher tolerance of corruption, regardless of students own citizenship norms endorsement.

5 Discussion and Conclusion

Identifying those students at higher risk of tolerance of corruption is critical in order to concentrate anti-corruption interventions on those students who need them most (Pop 2012). The results from this study provide a highly predictive model in this regard, showing that the main predictors of tolerance of corruption are the students' levels of civic knowledge and authoritarianism endorsement. Although we found positive evidence for the intergenerational hypothesis, the effect of parents' education on students' tolerance of corruption is rather small and is entirely accounted for by the students' current levels of civic knowledge. However, it presents contextual effects: for example, schools with a higher composition of students from educated families are more likely to have lower tolerance of corruption. In contrast, the sophistication hypothesis suggests a larger effect, where civic knowledge explains a substantial portion of students' tolerance of corruption.

Moreover, our findings support the ideological beliefs hypothesis—where authoritarianism endorsement is expected to explain the acceptance of corrupts acts. We found that this latter predictor is the most important, accounting for three times the variance as civic knowledge. General citizenship norms account for a small portion of the variance. Monitorial students tend to endorse a higher tolerance of corruption than their peers. Contrary to our expectations, the anomic group seems to be more critical and express less tolerance of corruption than their classmates. Finally, a higher concentration of duty-based students in schools is positively associated with higher tolerance of corruption, regardless of students own citizenship norms endorsement.

Open classroom discussion is a school practice that enhances political knowledge among students (Isac et al. 2014; Persson 2015). It occurs in classrooms where students can debate social and political issues, guided by their teacher, and express their opinions (Carrasco and Torres Irribarra 2018). Additionally, this school practice does not interact with a student's socioeconomic status when predicting civic knowledge (Lin 2014), producing similar gains among all students. Since open classroom discussion encourages students to articulate knowledge via questions and answers, facilitating the understanding of controversies (Harris 1996), it also operates as a protecting factor against authoritarianism endorsement (Hahn and Tocci 1990). Therefore, indirectly, open classroom discussion may prevent corruption acceptance among students (Carrasco et al. 2020).

Identifying civic knowledge and authoritarianism endorsement as primary risk factors of students' tolerance of corruption has broad implications for the interplay of educational and anti-corruption policies. Besides improving civic education, in the last 20 years a pivotal anti-corruption reform has been undertaken in Latin America, involving the implementation of transparency policies that protect the right of citizens to access information held by governments and request the publication of information on areas under the risk of corruption (Mendel 2009; OECD 2014). These two anti-corruption policies are interlinked. Indeed, institutional reforms do not operate in a vacuum, and the role of citizens in anti-corruption policies requires particular dispositions, especially in societies where power is distributed unequally and where hierarchy is accepted (Husted 1999; Rose-Ackerman and Palifka 2016). Transparency policies assume citizens are involved in the scrutiny of authorities, which in turn triggers a process that holds bureaucrats accountable and, consequently, deters corruption. However, this assumption may be weakened by tolerance of corruption, its association with authoritarian beliefs, and the educational interventions in place. Indeed, civic education has been considered the means by which citizens learn what corruption acts are, their consequences, and how to reject them (Jeaffreson 1989; Marquette 2007).

Nonetheless, if anti-corruption policies require active citizens, civic education curricula should also be aligned with this expectation. Currently, the curricula of Latin American countries do not prioritize competence and skills to interact with the state (Bascopé et al. 2015), neglecting the teaching of threats to democracy such as corruption, nepotism, and media control (Torney-Purta 2004). However, if students are expected to participate as control agents to prevent corruption in the future, then better learning opportunities should be provided for all.

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