Civic Knowledge and Student attitudes towards corruption: the Chilean case
A multilevel path analysis approach

Carrasco, Diego[1,3]; Gonzalez, Roberto[2]; Cortés, Flavio [3]; García, Leonardo[4]; Dassen, Nicolás[5]

Affiliations:

1. University of Sussex, United Kingdom;

2. Pontificia Universidad Católica, Chile;

3. MIDE UC, Pontificia Universidad Católica, Chile;

4: SREDECC, Sistema Regional de Evaluación y Desarrollo de Competencias Ciudadanas;

5. Inter-American Development Bank

International Association for the
Evaluation of Educational Achievement

Stichting IEA Secretariaat Nederland
Amsterdam, The Netherlands

Abstract

A series of explanatory models of permissiveness of corruption were fitted, to estimate the effect civic knowledge, given the levels of other civic attitudes such as Authoritarianism in the Government, trust in civic institutions and Law Disobedience. Using Data from the International Civic and Citizenship Study (ICCS) 2009 from the subpopulation of Chile, multilevel path models were estimated. Consistently to previous results, our analyses showed there is a negative relation between civic knowledge and Permissiveness of Corruption, Authoritarianism in the Government; Trust in Civic institutions and Law Disobedience. Furthermore, decomposition of direct and indirect effects shows the relationship between Civic Knowledge and Permissiveness of corruption seems to be partially mediated by the endorsement of Authoritarianism in the Government. These results are of educational importance, as abstract concepts which characterize government behaviour such as authoritarianism, populism, clientelism, nepotism, monopoly of mass media, among others, which are considered threats for democracy are not explicitly cover by the Chilean educational curriculum.

Key words: civic knowledge, corruption, authoritarianism, indirect effects, plausible values

Introduction

Permissiveness of corruption is one of the main factors which foster corruption. That is the willingness of people to tolerate act of corruptions as regular, or event daily events, not worthy of punishment, as something acceptable. Corruption within public institutions cannot be stopped if citizens are not involved in its condemned and denouncement.

Latin America is considered one the regions with higher levels of permissiveness of corruption (Moreno, 2003). With the exception of Chile and Uruguay, countries in this region obtain higher lever of corruption than other regions (Transparency International, 2010).

Models of social capital, have highlighted the role of education to promote democratic values and less tolerance to corruption in government (Sullivan & Transue, 1999). Education has played a central role for the consolidation of democracy in this region (McClintock, 2006), considering its history of dictatorships. Many of these countries performed curricular changes in their educational systems to foster democratic values and citizenships skills (Valverde, 1999), Chile, is one of these examples (Cox, 1999, 2006).

Most of the studies, which explore the relation between democracy and education focus on schooling years and countries history (Abramson & Inglehart, 1994; Duch & Taylor, 1993, 1994; Evans & Rose, 2007a, 2007b, 2012; Graaf & Evans, 1996; Stubager, 2005, 2007, 2008). Nevertheless, to a lesser extent these studies account for variance between participants in terms of the differences of the received education.

The International Civic and Citizenship Education Study (ICCS, 2009) (Schulz, Ainley, Fraillon, Kerr, & Losito, 2010), provides a great opportunity to explore the relationship between attitudes to corruption and civic knowledge among students, under similar years of schooling. The Latin American report (Schulz, Ainley, Friedman, & Lietz, 2011), showed that Civic Knowledge is negatively related to corruption permissiveness, hence the educational effort is fruitful. Students with higher Civic Knowledge support less corruptive behaviours in the public service, endorse less authoritarianism in the government, and less illegal practices. However, the relationship between these factors altogether was not tested in a multivariate model. The aim of this study is to test the relationship between civic education and permissiveness of corruption, and to explore possible psychosocial mediating factors of this relationship.

Socio demographics factors related to corruption

A preliminary revision of the research literature warns us to include gender and socio economic status as covariates (Truex, 2011). It is frequently observed that females, in contrast to males tend to legitimize less corrupt behaviours within government bodies, in different studies. The ICCS, 2009 studies, are no exception, testifying similar results with secondary students (Schulz et al., 2010). How these individuals differences are explain? Some criminology theories speculate women would raise to be more honest than men, or even that they may feel more anxious to be caught (Paternoster & Simpson, 1996), and less willing to take risks (Gatti, Paternostro, & Rigolini, 2003). Regarding socio economic factors, it is expected a negative attitude towards corruption with higher levels of socio economic status (Cheung & Chan, 2008). In more detail, some authors have suggested this is an effect of fairness, and not income disparity. Is the levels of skewness of income rather than heterogeneity, which leads to feelings of unfairness which deteriorate trustworthiness (You, 2005). These two factors are our first predictors to be considered in our model.

School factors related to corruption

Since the classic works of Coleman et al., (1966) and Jencks (1972) that school effects are studied in contrast to socio economic background of students. Coleman and Colleagues (1966) concluded in their report that only a small portion of student achievement could be attributed to school factors, in contrast to family background. The work of Jencks (1972) would reinforce further this conclusion, by giving evidence of a strong link between family background and later occupational status, above students educational attainment. In these respect, the ICCS 2009 is a great opportunity to test how much effect the civic education has on particular democratic related values such the permissiveness of corruption; over students' socio economic differences. The international reports of the ICCS, reported a negative relation between civic knowledge and permissiveness of corruption (Schulz et al., 2010). We wanted to test it further; to see if mediates entirely the relations with our previous socio demographic factors.

Permissiveness of corruption and political and social attitudes

There is a general trend and agreement that corruption erodes satisfaction with democracies (Seligson, 2006). Nevertheless, some of these expectations have had controversial results between countries. This is specially the case for trust in civic institutions. Seligson (2002) argues that in spite of the classical view, in which corruption is seen as functional way to overcome inefficient bureaucracies in third development countries, more recent research points into a different direction. Using national surveys from 4 countries of Latin America, Seligson (2002) showed, that independent of socioeconomic status, exposure to corruption erodes beliefs in the political system and reduces interpersonal trust. These effects were not replicated when considering corruption permissiveness. Catterberg & Moreno (2006) have shown, using data from the World Value Survey, including the waves from the 1980's to the 2001, that general political trust is negatively affected by corruption permissiveness, political radicalism and post materialism. Yet, this is not the case for distrust and corruption in Latin America, for which there is no effect between the two. In the same study, the authors find support for a general relationship between democracy/authoritarian index and political trust: more democratic citizens tend to trust more in government institutions.

An additional factor is Students' Attitudes towards Disobedience of Law (present in the ICCS, 2009), which in spite of the lack of previous research on the matter, by its closer content look, it make sense these two factors could be closely related. Schulz & Gonzalez (2011), analysing the results from Latin American Countries, found that females tended to accepted less law disobedience than males, and that civic knowledge was negatively related to authoritarianism, law disobedience and permissiveness of corruption.

In summary, we expected that general democratic values to be negatively correlated to permissiveness of corruption, consistently with previous results of ICCS reports (Schulz, Ainley, Friedman, et al., 2011; Schulz & Gonzalez, 2011). Furthermore, we wanted to test the effects of these factors altogether onto permissiveness of corruption, in search for a richer picture.

A secondary data analysis of the International Civic and Citizenship Study (ICCS) 2009 was performed. Multilevel path analysis was used to test direct and indirect effects, given exploratory mediational hypothesis over cross sectional observations, with students nested within classrooms. The ICCS 2009 employs a complex survey design (Heeringa, West, & Berglund, 2009) in 38 countries with representative samples. The target population of this study consist of all students in grades which represent eight years for schooling (from primary school to ISCED Level 1 (UNESCO, 2006)), with a mean age of 13.5 years at the time of participation (Schulz, Ainley, & Fraillon, 2011).

All analyses of this paper were conducted with the subpopulation of Chile within the ICCS 2009, which holds a nominal sample of 177 schools and 5192 students, with population estimates of 14.19 (SE=.02) mean age, and balanced gender proportion (females=50.8%, SE=1.45).

Method

In order to estimate the effects of these different factors, we fitted regression models step by step, including socio demographic factors (school type, socioeconomic index and gener), civic knowledge, trust in civic institutions, authoritarianism and law disobedience (for measures, see Brese, Jung, Mirazchiyski, Schulz, & Zuehlke, 2011).

In second phase we tested a model in which civic knowledge would be mediated by our considered political attitudes. The model ought to test the relationship between civic knowledge and Permissiveness of Corruption, and a set of mediators (Authoritarianism in Government and Law Disobedience). Specifically we expected that the higher the civic knowledge the lower the permissiveness of corruption. This effect would be partially mediated by Authoritarianism in Government and Law Disobedience, in such a way that Civic Knowledge would be negatively related to both factors, which in turn will be positively related to Permissiveness of Corruption.

In the first approach of our study, we fitted regression models accounting complex sample design (Heeringa et al., 2009; Thomas & Heck, 2001) and the use of the plausible values

variable of Civic Knowledge to estimate the effects (Rutkowski, Gonzalez, Joncas, & von Davier, 2010; Von Davier, Gonzalez, & Mislevy, 2009), which will give us estimates for a random sample. In our second approach, we fitted a multilevel path analysis to account for the nested structure of observations, (MacKinnon, 2008), complex sample design and plausible values of the Civic Knowledge scores. This would permit us to see if there is different pattern between schools, from those of within schools. To finally estimate indirect effects we used parameters constrained for fixed effects, following the guidelines of Preacher and Collegues (Preacher, Zhang, & Zyphur, 2011; Preacher, Zyphur, & Zhang, 2010). All analysis were conducted using MPLUS 6.12 (Muthén & Muthén, 2010).

The chosen approach is novel on three aspects: it allowed us to estimates the between variation of schools, separating the individual effects from the school effects with the school covariates specified accurately at their proper level. Additionally, it facilitates to estimate direct and indirect effects between factors. Secondly, Torney-Purta (2004) highlighted the need of studying the relationship between civic knowledge and attitudinal components of IEA Civic Education Studies (Torney-Purta, Lehmann, Oswald, & Schulz, 2001), which have received lesser attention in research. Finally, and most important, results are of relevance for educational research and educational policy implications; to the extent it relates curricular content and democratic values endorsement.

Analysis

Table 1 shows the regression estimates of our selected covariates on Permissiveness of Corruption. All observed effects followed our expectations, with the exemption of Trust in Civic Institutions. With regard to our socioeconomic factors, both were found to be related negatively with Permissiveness of Corruption with small effects. In the first step, there is a negative effect by the type of schools; students from private schools have lesser Permissiveness to Corruption. Nevertheless, this effects is diminished once the National Index of Socioeconomic Status it's enter into the model, decaying from a small effect (β=-.12), to rather null effect (β=-.05). The National Index of Socioeconomic Status, showed a small effect (β=-.18), which stands once gender of the students its added in the estimation. Gender effects are inline of expected effects; female students tend show lower levels of permissiveness to corruption in contrast to male students. Once we considered the chosen school factor of Civic Knowledge, the remainder socioeconomic factor effects decayed

entirely (β=.01) in step 4. Civic knowledge shows a large negative effect (β=-.52), and accounts for 27% including the previous covariates. Trust in civic institutions show a small positive effect, not as we expected. This effects disappears in model 6 and 7, when Authoritarianism in the Government is included in the model, with a large effect (β=.52) which also decays partially in step 7, when the effect of Disobeying the law is considered (β=.43).

Insert Table 1

In a second approach for these results, we considered the nested structure of the observations. The variance decomposition between and within schools gives the following estimates (see Table 2):

Insert Table 2

We fitted a multilevel path analysis including the main factor of our previous results. We discarded from the model the covariates of gender, trust in institutions and school type. School type was discarded by means of the effects of the national index of students' socioeconomic background (nisb), which were larger and explained the effects of school type. We excluded gender, as we didn't have a theoretical explanation for the differences between the students to be tested; and finally we excluded trust in civic institutions, givens its null effects when authoritarianism and disobeying were included in the model.

Insert Figure 1

Fit indices of the model perform above usual cutoff criteria's (Schermelleh-Engel, Moosbrugger, & Müller, 2003) ($X^2(6)$=4.62, p=.59, RMSEA=.00, SRMR within = .006, SRMR between = .019). The multilevel paths analyses results are consistent with our previous results. Within effects were quite similar to those in the regression models. Between levels estimates differ greatly, given the mediators of the model have lesser variance to explain (see variance decomposition, Table 2).

In order evaluate the indirect effects of Civic Knowledge to Permissiveness of Corruption, we decomposed the effects for the within and between level estimates. In this case, we need to rely on the unstandardized estimates of the model; given the parameter tests are not scales free. This is an application of the delta method for multilevel SEM models (Preacher et al., 2011).

Insert Table 3

Both indirect effects are present at within and between level models. Civic Knowledge is negatively related to Permissiveness of corruption, partially by its negative relations to Authoritarianism and Disobeying the Law. Both factors have positive relations to Permissiveness of Corruption. These results imply that the more civic knowledge students have, hence the more they know about the political system, their institutions and authorities, as wells critical thinking on political issues, the less are willing to justify law disobeying; and therefore less supportive of corruptive practices within government institutions (indirect within effect b=-.11). Likewise, the more sophisticated students are in terms of civic knowledge, the less prone to support the authoritarianism in the government, which make them also less permissive to acts of corruption (indirect within effect b=-.30).

DISCUSSION

Regression estimates and multilevel path models results, gave us evidence in favour of indirect effects of Civic Knowledge on Permissiveness of Corruption, through the endorsement of Authoritarianism in the Government. These findings are important, as abstract concepts of political behaviour such as authoritarianism, clientelism, populism and others, are skipped within Chilean national curriculum (Cox, 2010). For example, only 32% of the Chilean students recognize the consequences of dictatorships in Latin America ('Many dissidents had to flee from countries ruled by dictatorships' correct answer) (Schulz, Ainley, Friedman, et al., 2011).

The tested multilevel model was supported. The analyses revealed there was a negative relationship between Civic Knowledge and Permissiveness of Corruption, partially through Authoritarianism in the Government; and Disobedience of the Law. Furthermore, decomposition of direct and indirect effects shows that the relationship between Civic Knowledge and Permissiveness of Corruption was partially mediated by the endorsement of Authoritarianism in the Government, and partially mediated by Law Disobedience. In our series of regression models, Civic Education add 22% of explained variance to the previous factors (step 4), similarly the inclusion of Authoritarianism and Disobeying the Law adds approximately, a similar portion of explained variance, on top of the previous covariates ($\Delta R^{2=}22\%$, between step 4 and step 7). Both of these factors play significant role in explaining Permissiveness of corruption variation between students. Finally, all socioeconomic background differences were fully mediated.

The effects of Trust in Civic Institutions seems controversial, yet in line with previous results (Catterberg & Moreno, 2006). We think the fairness explanation from You (2005) is worthwhile to explore in further research. This author argues, that are the levels of fairness within nations which sustain loyalty and trustworthiness, effects which are expected to be eroded in countries with high inequalities (Chile, presents an approximately Gini index of .5). We also hope to test these models with data with other Latin American countries, given the share previous history of Authoritarian regimes in the area, which we think is playing a central role in these effects.

CONCLUSIONS

In order to promote democratic values, such as non-tolerance for corruption and egalitarian values, school system should not overlooked the important role authoritarianism endorsement plays, in conjunction with law disobedience rationalizations. It is negatively related to attitudes towards corruption, and also other egalitarian values (gender equality, ethnic equality, immigrants equality), and other outcomes which are crucial cohesive underpinnings of democracy. Concepts such as authoritarianism, clientelism, populism, monopoly of media are crucial knowledge for critical citizens, and should be part of the general curriculum.

REFERENCES

Abramson, P. R., & Inglehart, R. (1994). Education, Security, and Postmaterialism: A

Comment on Duch and Taylor's" Postmaterialism and the Economic Condition."

American Journal of Political Science, *38*(3), 797–814.

Brese, F., Jung, M., Mirazchiyski, P., Schulz, W., & Zuehlke, O. (2011). *ICCS 2009 User

Guide for the International Database, Supplement 4*. Amsterdam, The Netherlands:

International Association for the Evaluation of Educational Achievement (IEA).

Catterberg, G., & Moreno, A. (2006). The Individual Bases of Political Trust: Trends in New

and Established Democracies. *International Journal of Public Opinion Research*,

18(1), 31–48. doi:10.1093/ijpor/edh081

Cheung, H. Y., & Chan, A. W. . (2008). Corruption across countries: Impacts from education

and cultural dimensions. *The Social Science Journal*, *45*(2), 223–239.

Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D.,

& York, R. L. (1966). *Equality of educational opportunity: Summary report* (Vol. 2).

US Department of Health, Education, and Welfare, Office of Education. Retrieved

from http://www.getcited.org/pub/101228169

Cox, C. (1999). La reforma del curriculum. *La reforma educacional chilena*, 236.

Cox, C. (2006). Construcción política de las reformas curriculares: el caso de Chile en los

noventa. *Profesorado: Revista de curriculum y formación del profesorado*, *10*(1), 5.

Cox, C. (2010). *Oportunidades de aprendizaje escolar de la ciudadanía en América Latina:

currículos comparados*. Bogotá: Sistema Regional de Evaluación y Desarrollo de

Competencias Ciudadanas.

Duch, R. M., & Taylor, M. A. (1993). Postmaterialism and the economic condition. *American

Journal of Political Science*, *37*(3), 747–779.

Duch, R. M., & Taylor, M. A. (1994). A Reply to Abramson and Inglehart's" Education, Security, and Postmaterialism." *American Journal of Political Science*, *38*(3), 815–824.

Evans, G., & Rose, P. (2007a). Support for Democracy in Malawi: Does Schooling Matter? *World Development*, *35*(5), 904–919. doi:10.1016/j.worlddev.2006.09.011

Evans, G., & Rose, P. (2007b). Education and Support for Democracy in Sub-Saharan Africa: Testing Mechanisms of Influence. Presented at the The Micro-Foundations of Mass Politics in Africa, Michigan State University, East Lansing: Afrobarometer Working Paper.

Evans, G., & Rose, P. (2012). Understanding Education's Influence on Support for Democracy in Sub-Saharan Africa. *Journal of Development Studies*, *48*(4), 498–515. doi:10.1080/00220388.2011.598508

Gatti, R., Paternostro, S., & Rigolini, J. (2003). Individual attitudes toward corruption: do social effects matter? *World Bank Policy Research Working Paper*, (3122). Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=636542

Graaf, N. D. D., & Evans, G. (1996). Why are the Young more Postmaterialist? A Cross-National Analysis of Individual and Contextual Influences on Postmaterial Values. *Comparative Political Studies*, *28*(4), 608–635. doi:10.1177/0010414096028004005

Heeringa, S. G., West, B., & Berglund, P. A. (2009). *Applied Survey Data Analysis*. Taylor & Francis Group.

Jencks, C. (1972). Inequality: A reassessment of the effect of family and schooling in America. Retrieved from http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=ED077551

MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. Erlbaum Psych Press. Retrieved from

http://books.google.co.uk/books?hl=en&lr=&id=qg0Eiz1ZmagC&oi=fnd&pg=PP1&
dq=Introduction+to+Statistical+Mediation+Analysis&ots=hRMjKCXmSY&sig=ldR0
p-4r3rEkGWTvhp1biR_TP1k

McClintock, C. (2006). Correlates of Levels of Democracy in Latin America During the
1990s. *Latin American Politics and Society*, *48*(2), 29.

Moreno, A. (2003). Corruption and democracy: A cultural assessment. In *Human Values and
Social Change: Findings from the Values Surveys* (p. 265−277). Boston,
Massachusetts: Brill Academic Pub.

Muthén, L. K., & Muthén, B. O. (2010). *Mplus User's Guide* (Fifth Edition.). Los Angeles,
CA: Muthén & Muthén.

Paternoster, R., & Simpson, S. (1996). Sanction threats and appeals to morality: Testing a
rational choice model of corporate crime. *Law and Society Review*, 549–583.

Preacher, K. J., Zhang, Z., & Zyphur, M. J. (2011). Alternative methods for assessing
mediation in multilevel data: The advantages of multilevel SEM. *Structural Equation
Modeling*, *18*(2), 161–182.

Preacher, K. J., Zyphur, M. J., & Zhang, Z. (2010). A general multilevel SEM framework for
assessing multilevel mediation. *Psychological Methods*, *15*(3), 209.

Rutkowski, L., Gonzalez, E., Joncas, M., & von Davier, M. (2010). International Large-Scale
Assessment Data: Issues in Secondary Analysis and Reporting. *Educational
Researcher*, *39*(2), 142–151. doi:10.3102/0013189X10363170

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural
equation models: Tests of significance and descriptive goodness-of-fit measures.
Methods of psychological research online, *8*(2), 23–74.

Schulz, W., Ainley, J., & Fraillon, J. (Eds.). (2011). *ICCS 2009 Technical Report*. Amsterdam, The Netherlands: International Association for the Evaluation of Educational Achievement (IEA).

Schulz, W., Ainley, J., Fraillon, J., Kerr, D., & Losito, B. (2010). *ICCS 2009 International Report: Civic knowledge, attitudes, and engagement among lower-secondary school students in 38 countries*. Amsterdam: International Association for the Evaluation of Educational Achievement (IEA).

Schulz, W., Ainley, J., Friedman, T., & Lietz, P. (2011). *ICCS 2009 Latin American Report*. Amsterdam: International Association for the Evaluation of Educational Achievement (IEA. Retrieved from http://www.iea.nl/fileadmin/user_upload/graphics/Publications/ICCS_2009_LA_Report.pdf

Schulz, W., & Gonzalez, E. (2011). Latin American Perspectives on Civic and Citizenship Education. *Annual Meetings of the American Educational Research Association*.

Seligson, M. A. (2002). The impact of corruption on regime legitimacy: A comparative study of four Latin American countries. *Journal of Politics*, *64*(2), 408–433.

Seligson, M. A. (2006). The measurement and impact of corruption victimization: Survey evidence from Latin America. *World Development*, *34*(2), 381–404.

Stubager, R. (2005). The Educational Foundation of Authoritarian-Libertarian Values.

Stubager, R. (2007). The development of the education cleavage at the electoral level in Denmark: a dynamic analysis.

Stubager, R. (2008). Education effects on authoritarian–libertarian values: a question of socialization. *The British Journal of Sociology*, *59*(2), 327–350. doi:10.1111/j.1468-4446.2008.00196.x

Sullivan, J. L., & Transue, J. E. (1999). The psychological underpinnings of democracy: A selective review of research on political tolerance, interpersonal trust, and social capital. *Annual Review of Psychology*, *50*(1), 625–650.

Thomas, S. L., & Heck, R. H. (2001). Analysis of large-scale secondary data in higher education research: Potential perils associated with complex sampling designs. *Research in Higher Education*, *42*(5), 517–540.

Torney-Purta, J. (2004). An overview of secondary analysis of the IEA Civic Education Study, its impact and directions for the future. In *First IEA International Research Conference, Nikosia, Cyprus*.

Torney-Purta, J., Lehmann, R., Oswald, H., & Schulz, W. (2001). *Citizenship and education in twenty-eight countries: Civic knowledge and engagement at age fourteen.* Amsterdam, The Netherlands: Eburon Publishers, Delft, Netherlands. Retrieved from http://www.iea.nl/fileadmin/user_upload/Publications/Electronic_versions/CIVED_Phase2_Age_Fourteen.pdf

Transparency International. (2010). *Corruption Perception Index 2010*. Retrieved from http://www.transparency.org/policy_research/surveys_indices/cpi/2010/results

Truex, R. (2010). Corruption, Attitudes, and Education: Survey Evidence from Nepal. *World Development*.

UNESCO. (2006). *International Standard Classification of Education: ISCED* (May 2006, Re-edition, originally published 1997.). United Nations Educational, Scientific and Cultural Organization: UNESCO-UIS. Retrieved from www.uis.unesco.org

Valverde, G. A. (1999). Democracy, human rights, and development assistance for education: The USAID and World Bank in Latin America and the Caribbean. *Economic Development and Cultural Change*, *47*(2), 401.

Von Davier, M., Gonzalez, E., & Mislevy, R. (2009). What are plausible values and why are they useful. *IERI Monograph Series: Issues and Methodologies in Large-Scale Assessments*, *2*, 9–36.

You, J.-S. (2005). *Corruption and inequality as correlates of social trust: Fairness matters more than similarity*. Hauser Center for Nonprofit Organizations, Harvard University. Retrieved from

http://www.hks.harvard.edu/hauser/PDF_XLS/workingpapers/workingpaper_29.pdf

**Table 1: regression estimates on Permissiveness of corruption, Standardized Estimates**

	1	2	3	4	5	6	7
Private (1= private, 0 = public)	-.12***	-.05†	-.04†	.02	.02	.02	.02†
National index of students' socioeconomic background		-.18***	-.18***	.01	.01	.01	.01
Gender (1=female, 0=males)			-.11***	-.07***	-.07***	-.03**	-.03*
Civic Knowledge				-.52***	-.51***	-.22***	-.18***
Trust in Civic Institutions					.07***	.00	.00
Authoritarianism in the Government						.52***	.43***
Disobeying the Law							.24***
R^2	.01	.04	.05	.27	.28	.45	.49
ΔR^2		.03	.01	.22	.01	.17	.04

Notes: Maximum Likelihood estimation, standardized estimates, *** p<.001, ** p<.01, * p<.05, † p<.1

Table 2: Variance decompositions of the components, between and within schools

Indicator	Name in the diagram	Total	Between	Within
Permissiveness of Corruption	atcorr	111.03	10.3%	89.7%
National index of students' socioeconomic background	nisb	1.05	47.2%	52.8%
Civic Knowledge	pvcv	76.19	31.5%	68.5%
Authoritarianism in the Government	autgov	109.80	11.5%	88.5%
Disobeying the Law	dislaw	122.59	7.7%	92.3%

Figure 1: Multilevel path analysis to explain Permissiveness of Corruption, Standardized Estimates
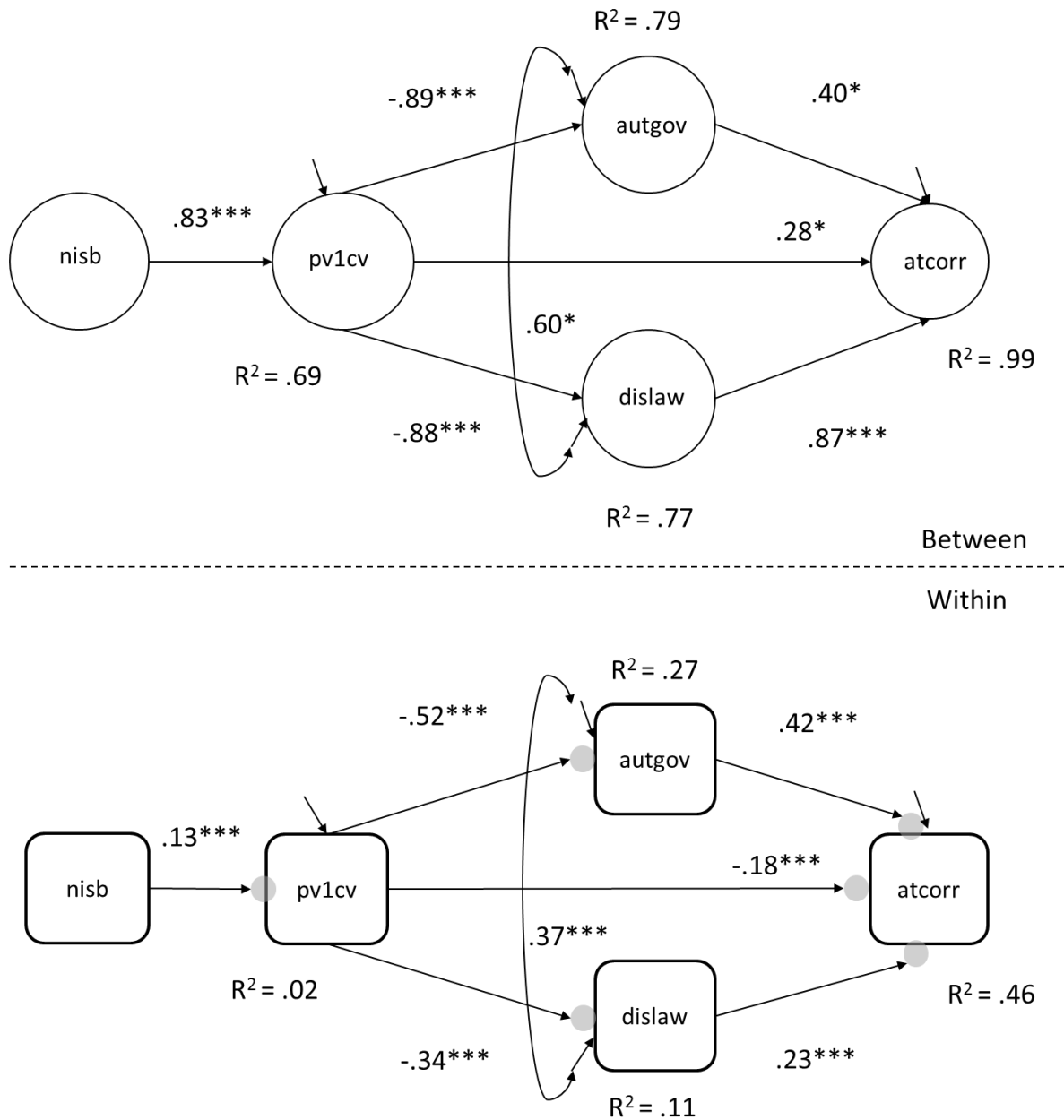
X2(6)=4.62, p=.59, CFI=1, RMSEA=.000, SRMR within = .006, SRMR between = .019

Notes: Maximum Likelihood estimation, standardized estimates, *** p<.001, ** p<.01, * p<.05, † p<.1

Table 3: Direct and Indirect effects of Civic Knowledge through Authoritarianism and Disobeying the Law

	Within	Between
Total	-.66***	-.57***
Direct	-.25***	.19*
Indirect	-.41***	-.76***
Specifics		
Authoritarianism in the Government	-.30***	-.24***
Disobeying the law	-.11***	-.52***

Civic Knowledge and
Student attitudes towards corruption

The Chilean Case, a Multilevel Path approach

Carrasco D., González R, Cortés, F. García, L. & Dassen, N.

5th IEA International Research Conference
26–28 June 2013, Singapore

contact: dacarras@gmail.com

PROBLEM:

Corruption within the government and public institutions is fostered if citizens don't denounce or condemn corruption practices.
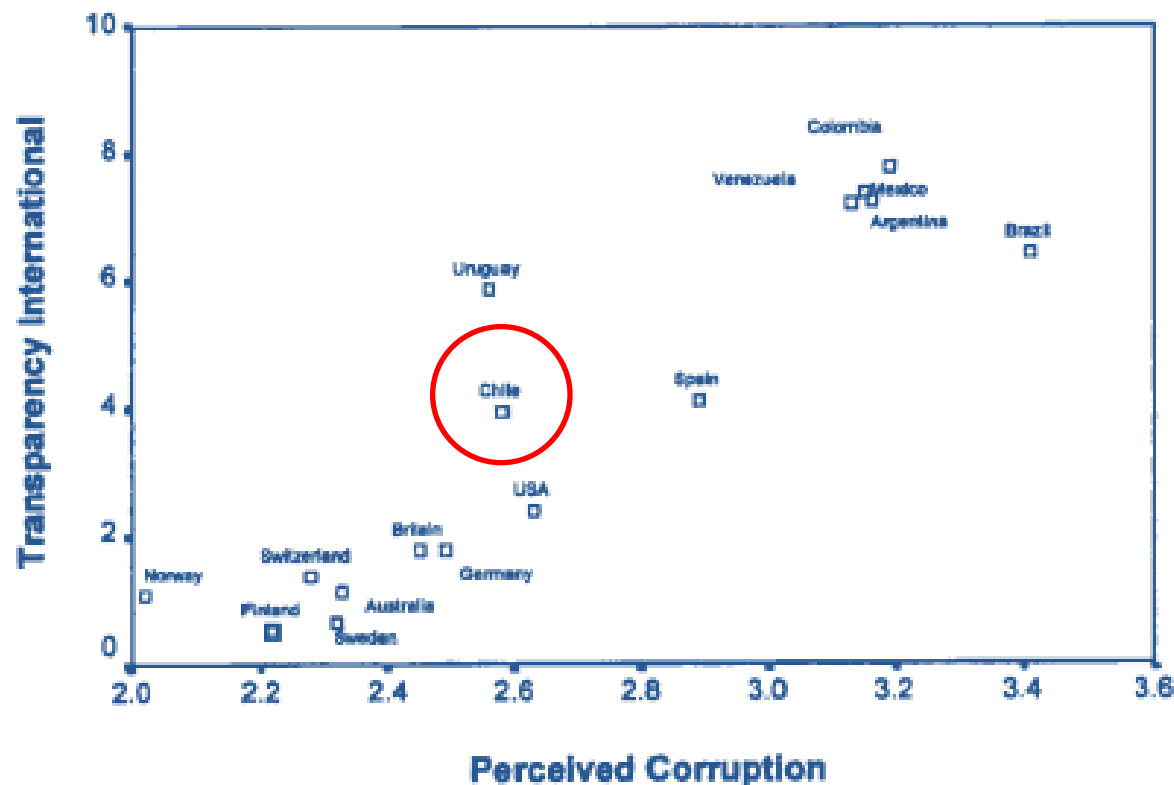
Corruption, as a whole has general negative for democracy. It erodes the legitimacy of its institutions.

Latin America is considered one the regions with higher levels or permissiveness of corruption (Moreno, 2003). With Chile and Uruguay as an exception, countries in this region obtain higher lever of corruption than other regions (Transparency International, 2010).

PERMISSIVENESS OF CORRUPTION AND CORRUPTION (CANACHE & ALLISON, 2005)

Figure. 1. Correlation Between Country-level Corruption (Transparency International-CPI) and Perceived Corruption
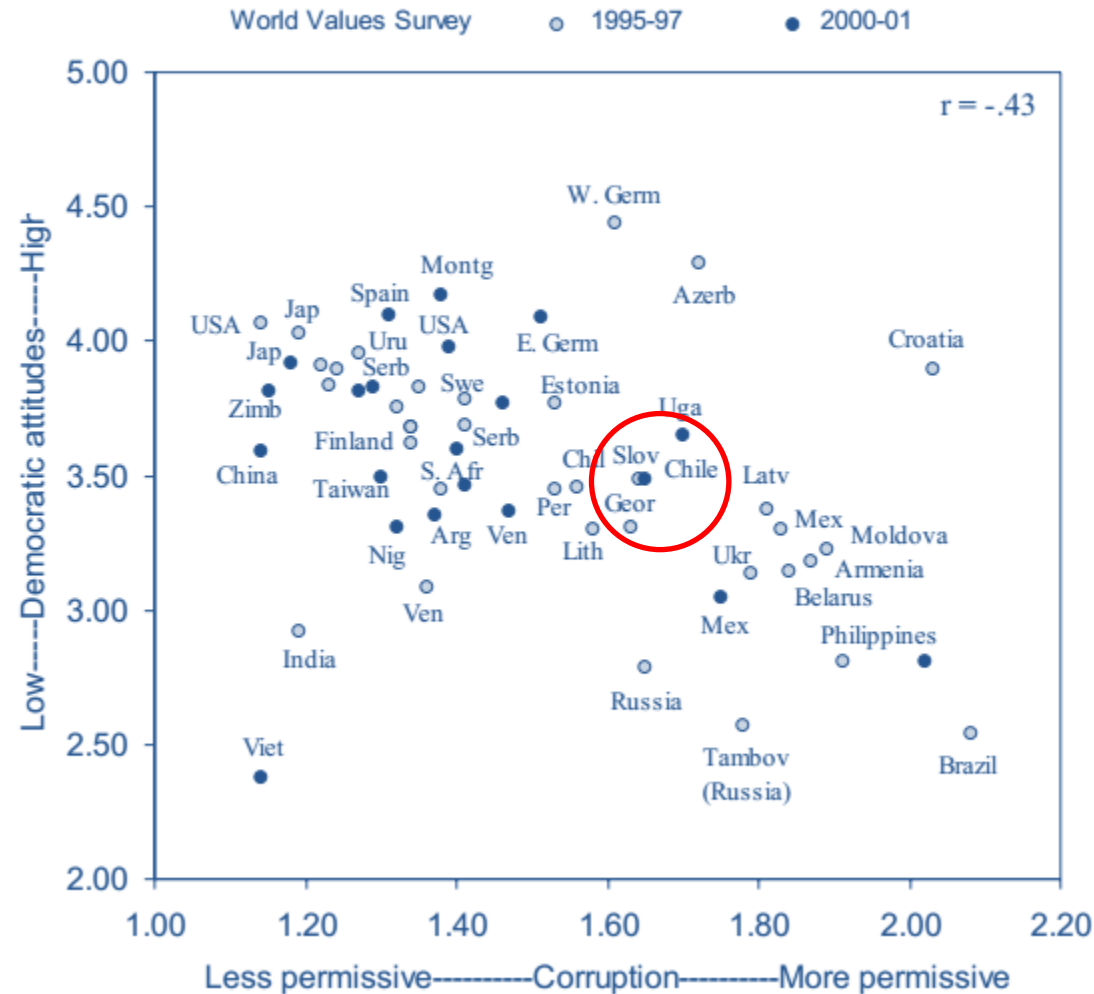
Source: Transparency International; World Values Survey 1995–97

Corruption within the government and public institutions is fostered if citizens don't denounce or condemn corruption practices.

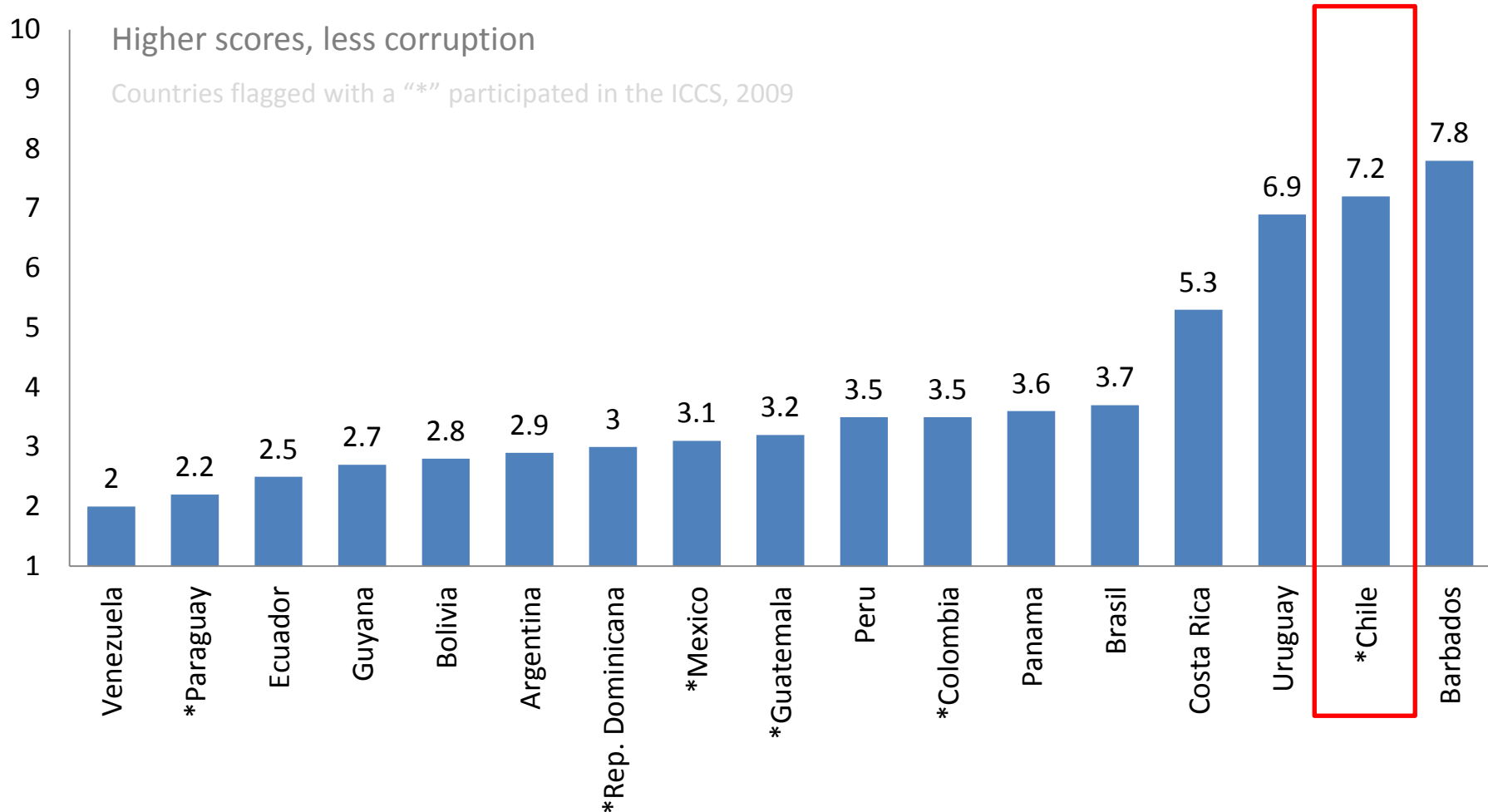## PERMISSIVENESS OF CORRUPTION AND SUPPORT FOR DEMOCRACY (MORENO, 2003)

Figure 1. Corruption Permissiveness and Support for Democracy

There is a general trend and agreement that corruption erodes satisfaction with democracies (Seligson, 2006)

TRANSPARENCY INTERNATIONAL CORRUPTION PERCEPTION INDEX

Higher scores, less corruption

Countries flagged with a "*" participated in the ICCS, 2009

Country	Score
Venezuela	2
*Paraguay	2.2
Ecuador	2.5
Guyana	2.7
Bolivia	2.8
Argentina	2.9
*Rep. Dominicana	3
*Mexico	3.1
*Guatemala	3.2
Peru	3.5
*Colombia	3.5
Panama	3.6
Brasil	3.7
Costa Rica	5.3
Uruguay	6.9
*Chile	7.2
Barbados	7.8

Latin America is considered one the regions with higher levels or permissiveness of corruption (Moreno, 2003). With Chile and Uruguay as an exception, countries in this region obtain higher lever of corruption than other regions (Transparency International, 2010).

CORRUPTION, PERMISSIVENESS AND TRUST (OECD, 2011, EDUCATION AT GLANCE
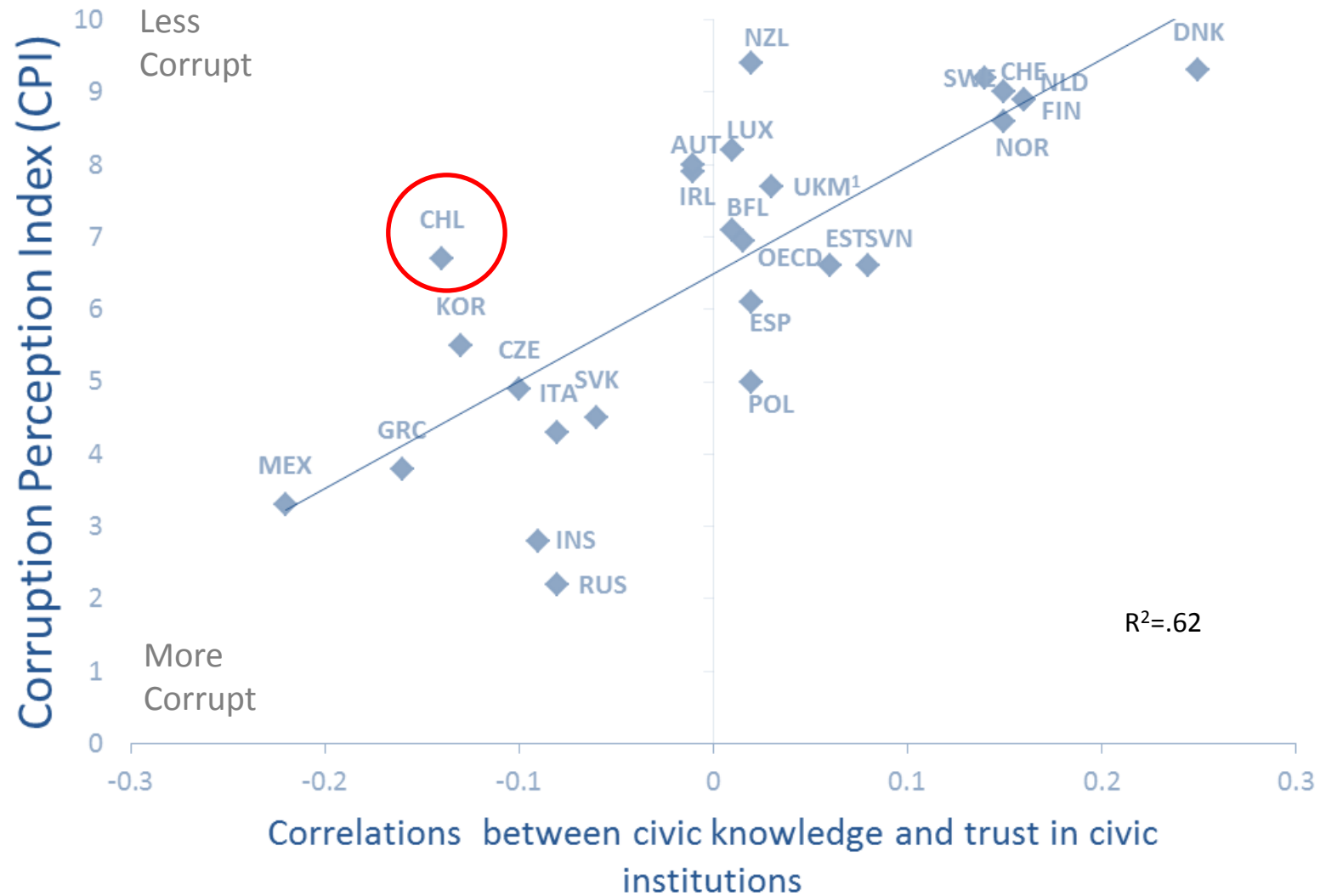
Models of social capital assert education has a central role in promoting democratic values and less tolerance to corruption (Sullivan & Transue, 1999).

Accordingly, Latin-American countries have perform **curricular changes**, specially those with a history of past dictatorships in order to promote citizenships skills (Valverde, 1999). Chile, is one of these examples (Cox, 1999, 2006).
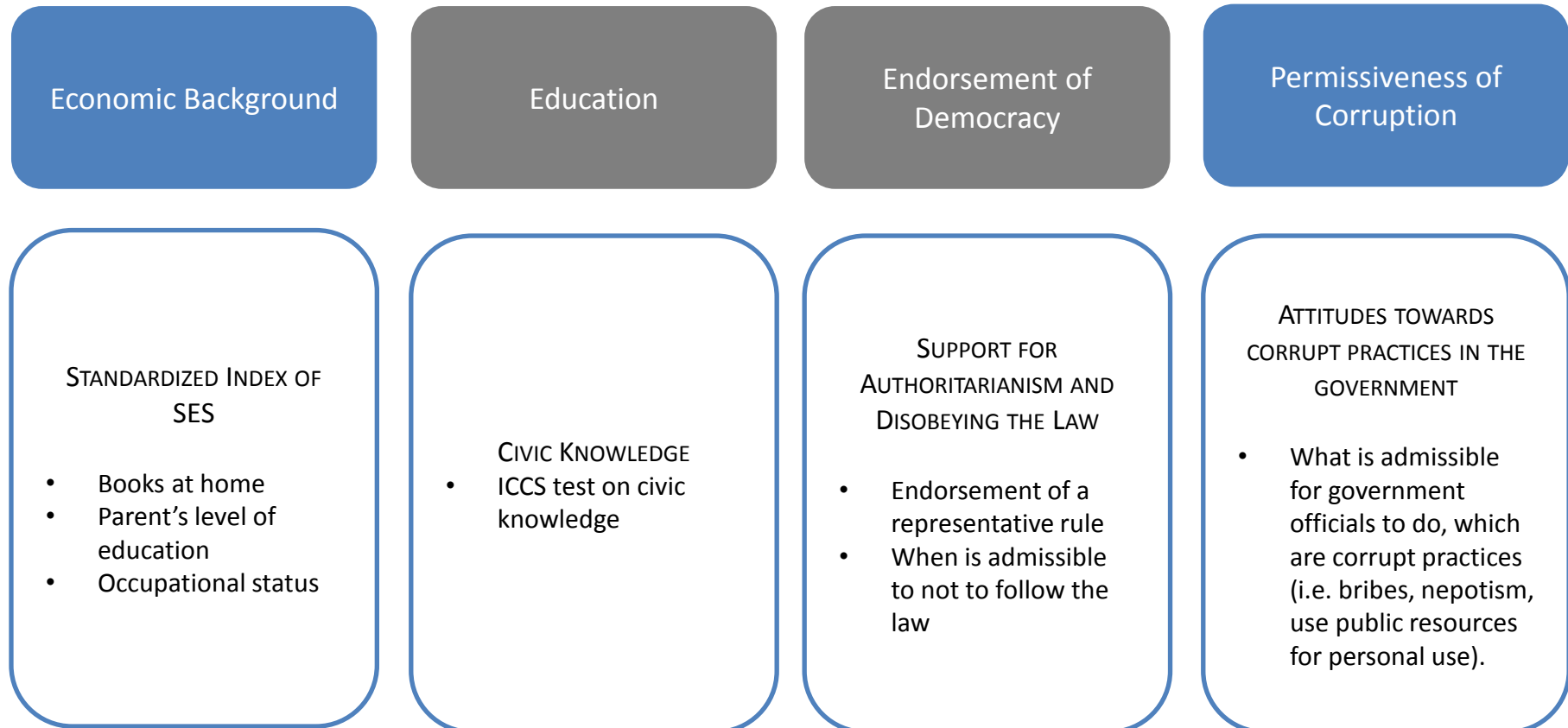
Most of the studies, **which explore the relation between democracy and education** focus on schooling years and countries history (Abramson & Inglehart, 1994; Duch & Taylor, 1993, 1994; Evans & Rose, 2007a, 2007b, 2012; Graaf & Evans, 1996; Stubager, 2005, 2007, 2008).

Nevertheless, to a lesser extent these studies account for variance between citizens.

The International Civic and Citizenship Education Study (ICCS, 2009) provides a great opportunity to explore the relationship **between attitudes to corruption and civic knowledge** among students, under similar years of schooling.

The Latin American report (Schulz, Ainley, Friedman, & Lietz, 2011), found that Civic Knowledge is **negatively related to corruption** permissiveness. Students with higher Civic Knowledge support less corruptive behaviours in the public service, **endorse less authoritarianism in the government**, and less **illegal practices**.

However, the **relationship** between these factors altogether **remains unexplored.**

Economic Background	Education	Endorsement of Democracy	Permissiveness of Corruption
STANDARDIZED INDEX OF SES • Books at home • Parent's level of education • Occupational status	CIVIC KNOWLEDGE • ICCS test on civic knowledge	SUPPORT FOR AUTHORITARIANISM AND DISOBEYING THE LAW • Endorsement of a representative rule • When is admissible to not to follow the law	ATTITUDES TOWARDS CORRUPT PRACTICES IN THE GOVERNMENT • What is admissible for government officials to do, which are corrupt practices (i.e. bribes, nepotism, use public resources for personal use).

SAMPLE:

International Civic and Citizenship Education Study (ICCS, 2009)
Grade 8, age 13-14 years
38 countries
Nominal Sample
150 schools per country
Nearly 3000 students

Sample Design
Two stage probability sample design (stratification, clustering, and jack-knifes)
Sampling precision yields a 400 students chosen randomly

Chile, Subsample
- 5.192 students (51.1% female)
- Mean age 14.1 (SD=.6)
- 177 school / classrooms

ATTITUDES TOWARDS CORRUPT PRACTICES IN THE GOVERNMENT

How much do you agree or disagree with the following statements about the civic service and government?

Scores

It is acceptable for a civil servant to accept bribes if his/her salary is too low.

It is acceptable for a civil servant to use the resources of the institution in which he/she works for personal benefit.

Good candidates grant personal benefits to voters in return for their votes.

Paying an additional amount to a civil servant in order to obtain a personal benefit is acceptable.

It is acceptable that a civil servant helps his/her friends by giving them employment in his/her office.

Since public resources belong to everyone, it is acceptable that those who can keep part of them.

☐ Strongly disagree   ☐ Disagree

☐ Agree   ☐ Strongly agree

AUTHORITARIANISM IN THE GOVERNMENT

How much do you agree or disagree with the following statements about the government and its leaders/its power?

Scale scores (mean = 50, standard deviation = 10)

It is better for government leaders to make decisions without consulting anybody.

People in government must enforce their authority even if it means violating the rights of some citizens.

People in government lose part of their authority when they admit their mistakes.

People whose opinions are different from those of the government must be considered its enemies.
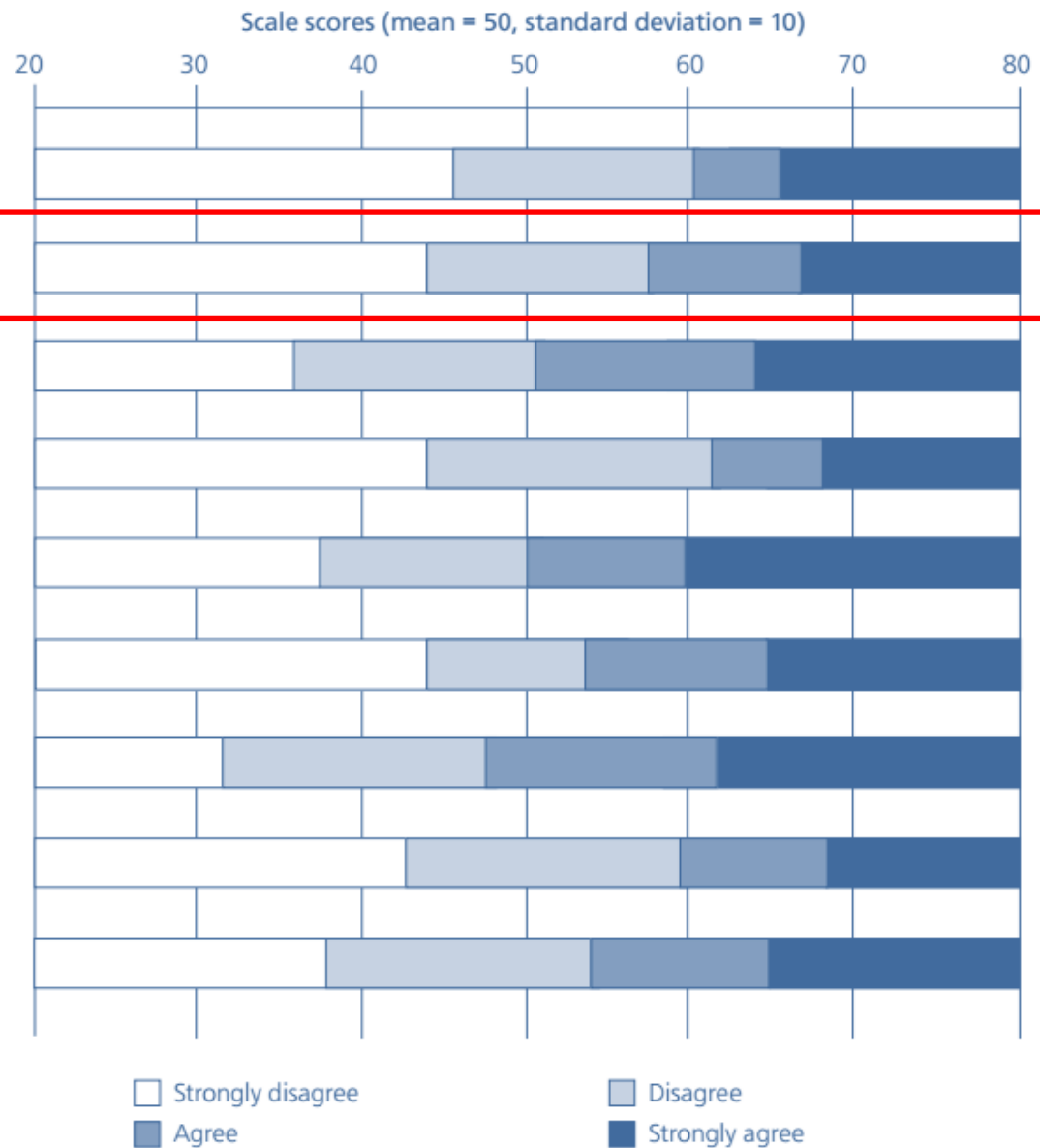
The most important opinion of a country should be that of the president.

It is fair that the government does not comply with the law when it thinks it is not necessary.

Concentration of power in one person guarantees order.

The government should close communication media that are critical.

If the president does not agree with <Congress>, he/she should dissolve it.

☐ Strongly disagree ☐ Disagree ■ Agree ■ Strongly agree

How much do you agree or disagree with the following statements about situations where the law is disobeyed? A law may be disobeyed ...

Scores

When it is the only alternative left for achieving important objectives.

When it is the only way one has to help one's family.

When others who disobeyed it were not punished.

When others do it.

When one distrusts the enacting body.

When one is sure nobody will realize.

When nobody gets hurt.

When it is not done with bad intentions.

When one is not familiar with the law.

When one distrusts the authority executing the law.
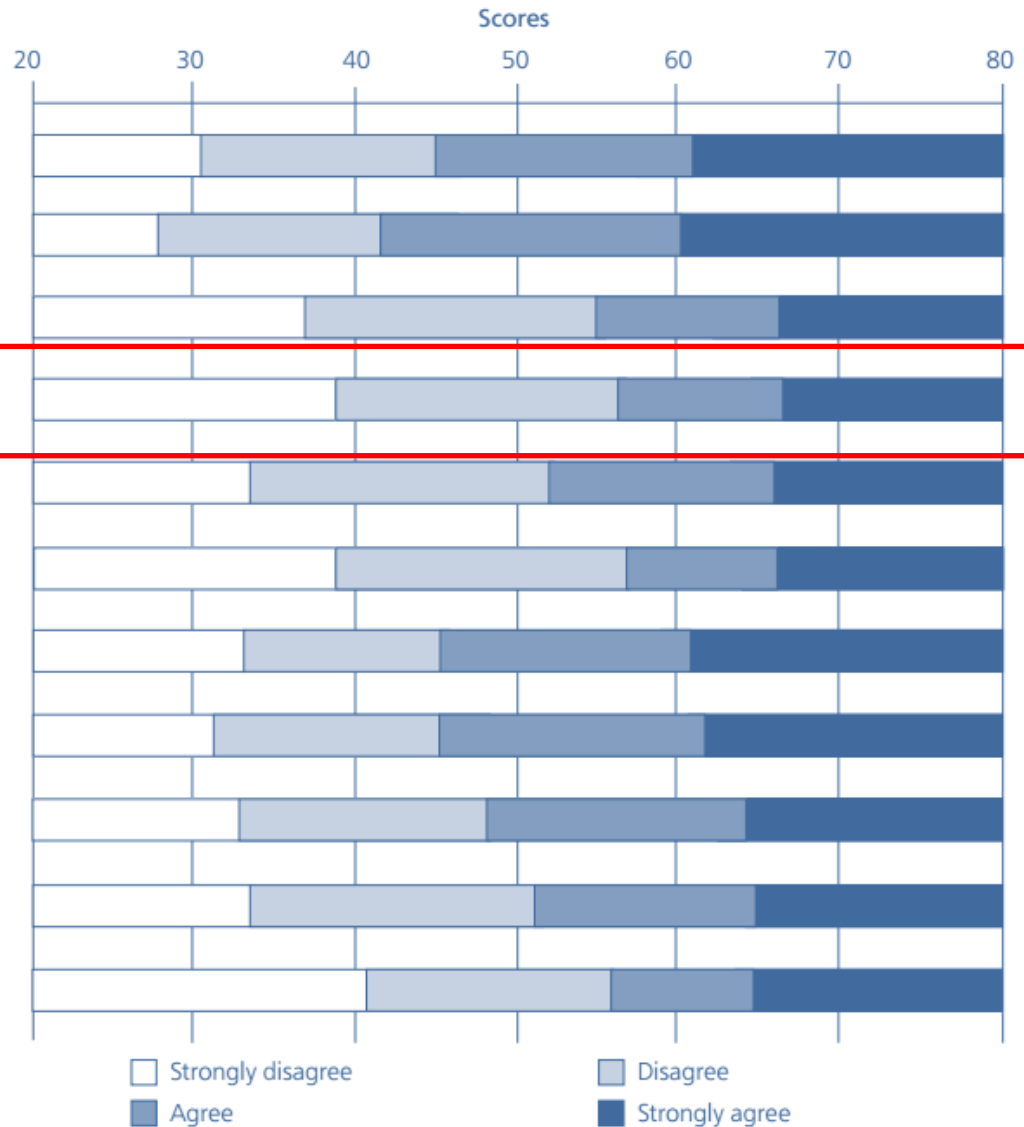
When one can obtain economic benefits.

☐ Strongly disagree   ☐ Disagree

■ Agree   ■ Strongly agree

Table 1: multiple regression estimates on Attitudes towards the Corruption in the Government

	1	2	3	4	5	6	7
Private (1= private, 0 = public)	-.12***	-.05†	-.04†	.02	.02	.02	.02†
National index of students' socioeconomic background		-.18***	-.18***	.01	.01	.01	.01
Gender (1=female, 0=males)			-.11***	-.07***	-.07***	-.03**	-.03*
Civic Knowledge				-.52***	-.51***	-.22***	-.18***
Trust in Civic Institutions					.07***	.00	.00
Authoritarianism in the Government						.52***	.43***
Disobeying the Law							.24***
R²	.01	.04	.05	.27	.28	.45	.49
ΔR²		.03	.01	.22	.01	.17	.04

Notes: Maximum Likelihood estimation, standardized estimates, *** $p<.001$, ** $p<.01$, * $p<.05$, † $p<.1$

Civic Knowledge test
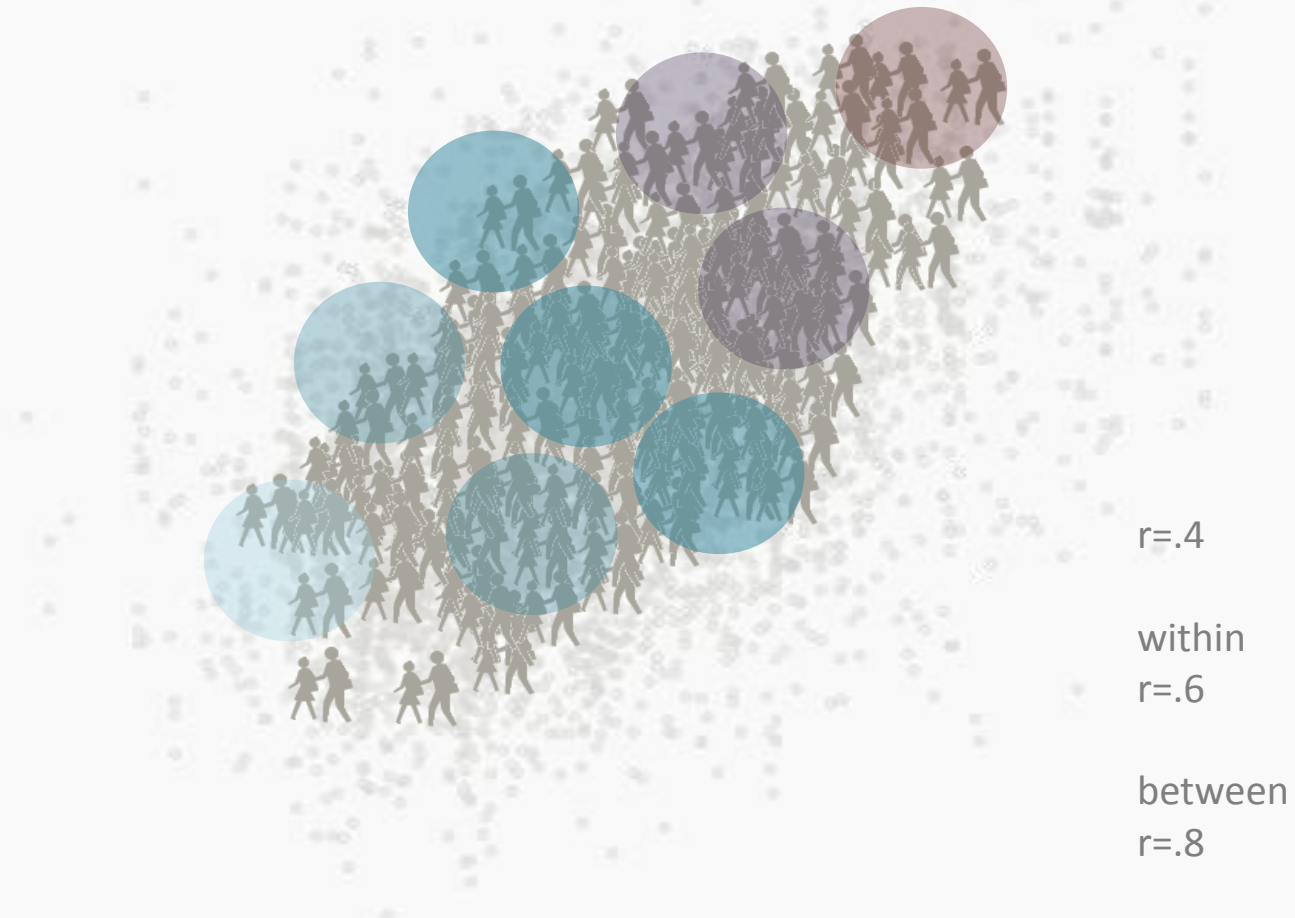
Socio Economic Factors (nisb)

r=.4

within
r=.6

between
r=.8

Table 3: Variance proportions Estimates, for between and within schools

	Between	Within
Attitudes towards corrupt practices in the government	10.3%	89.7%
National index of students' socioeconomic background	47.2%	52.8%
Civic Knowledge	31.5%	68.5%
Disobeying the Law	7.7%	92.3%
Authoritarianism in the Government	11.5%	88.5%
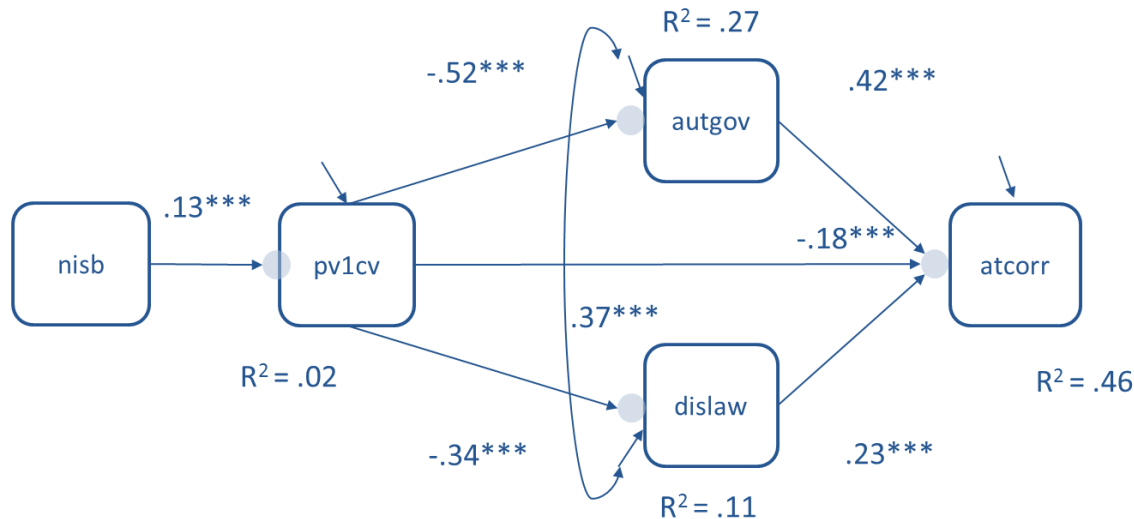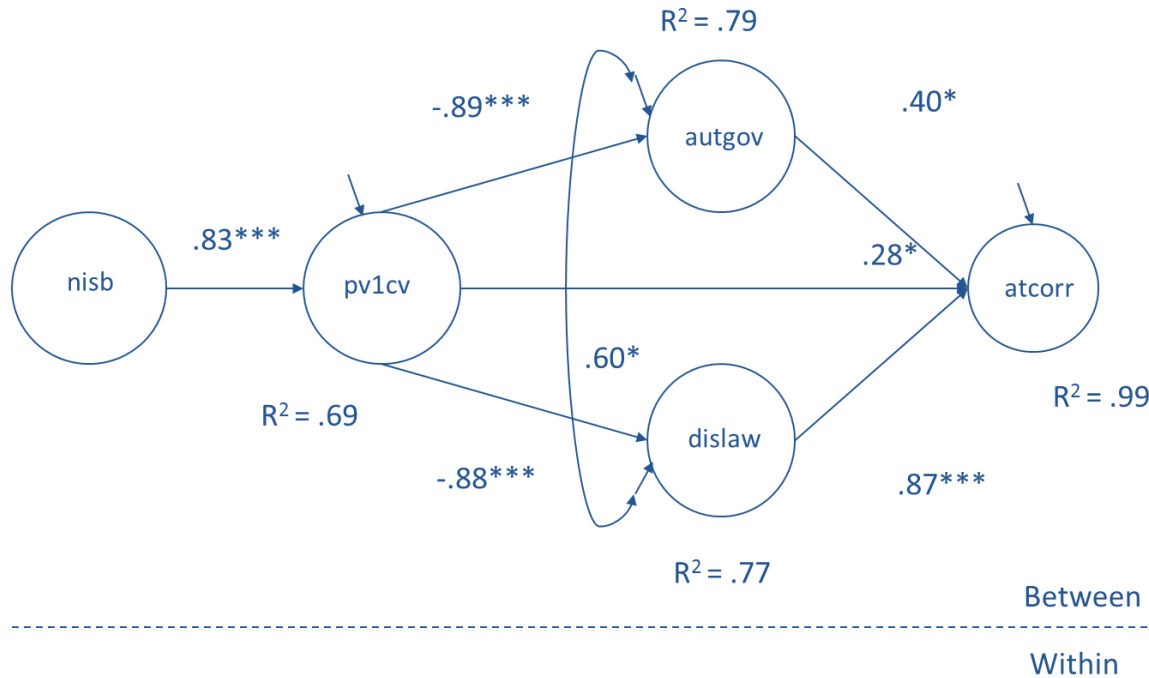
measures	acronym
Attitudes towards corrupt practices in the government	**atcorr**
National index of students' socioeconomic background	**nisb**
Civic Knowledge	**pv1cv**
Disobeying the Law	**dislaw**
Authoritarianism in the Government	**autgov**
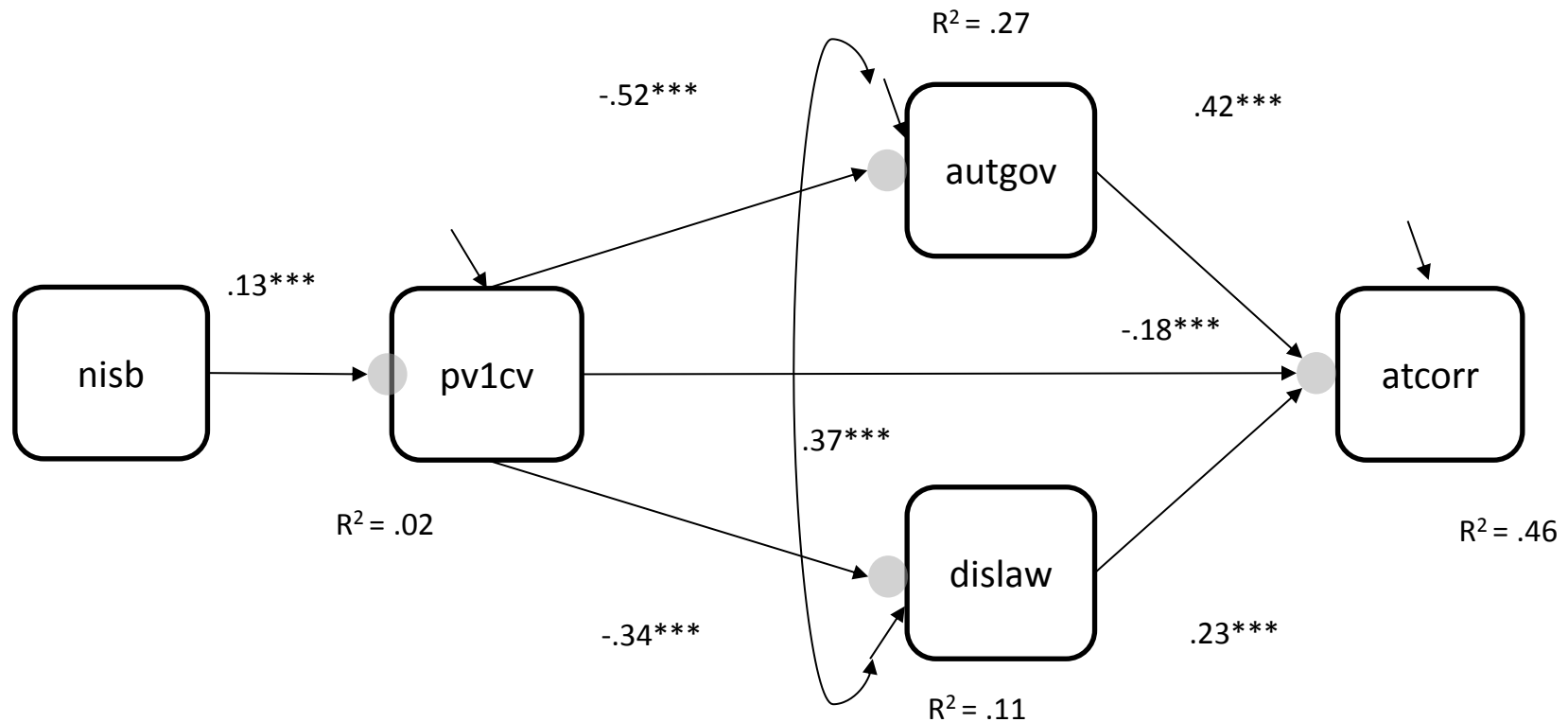
$R^2 = .27$

-.52***

.42***

autgov

.13***

-.18***

nisb

pv1cv

atcorr

$R^2 = .02$

.37***

dislaw

$R^2 = .46$

-.34***

.23***

$R^2 = .11$

$X^2(6)=4.619$, AIC= 156976.896, RMSEA=.000, SRMR$_{within}$=.006, SRMR$_{between}$=.019

Notes: estimates with significant effects were marked with when significant at p<.05, ** when p<.01 and *** when p<.001; † denotes p<.1
Estimates where obtain through MLR estimation, accounting for complex design and plausible values.
Standardized estimates are displayed.

Permissiveness of corruption is negatively related to civic knowledge.

Nevertheless, the inclusions of democratic values, such as Authoritarianism and Law disobedience permits to explain **additional** variance.
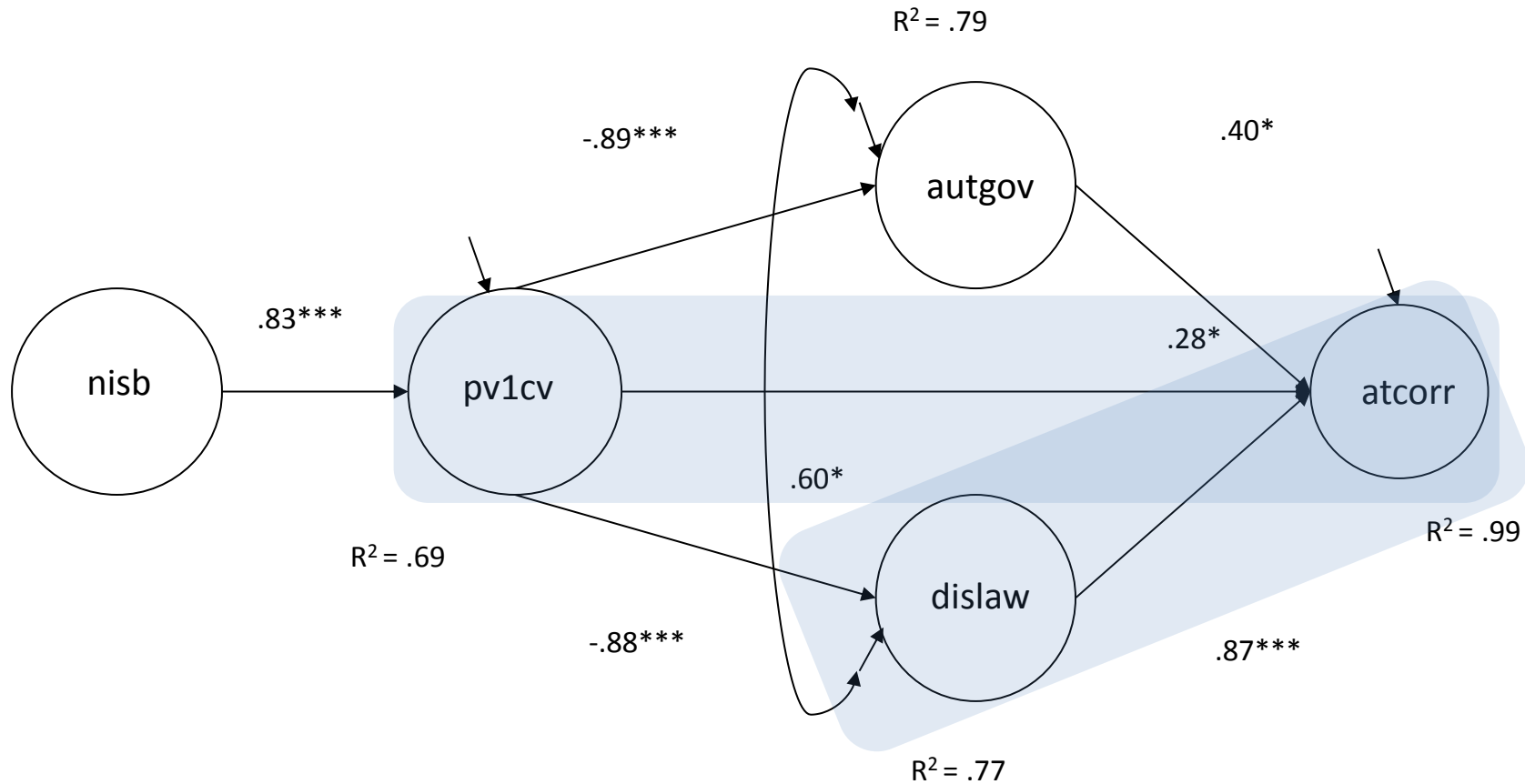
Furthermore, **mediational** analysis support the idea of indirect effects of civic knowledge trough these values (authoritarianism and law disobedience).

The multilevel approach permits us to obtain proper within estimates for a random school, where all covariate conditions are controlled for. Additionally, its gives a different picture for the observed effects, permitting to display **group level effects** (these are not just individual characteristics).

The **non effect of trust** in institutions is controversial and non expected. You (2005) suggestions seems worthwhile to explore: trust is driven by fairness, which is hampered in countries with high inequality.

Chile's curriculum is weighted towards formal citizenship (Putnam's distinction); and it is skipping higher order reflection onto **risks for democracy** (i.e. authoritarianism, nepotism, clientelism, monopoly, etc.) (Bascopé, et al, 2013).

Given these results, this omission is not advised.

$R^2 = .79$

-.89***

.40*

.83***

.28*

nisb → pv1cv

autgov

atcorr

.60*

$R^2 = .99$

$R^2 = .69$

dislaw

-.88***

.87***

$R^2 = .77$

Contextual effects

$X^2(6)=4.619$, AIC= 156976.896, RMSEA=.000, SRMR$_{within}$=.006, SRMR$_{between}$=.019

Notes: estimates with significant effects were marked with when significant at p<.05, ** when p<.01 and *** when p<.001; † denotes p<.1
Estimates where obtain through MLR estimation, accounting for complex design and plausible values.
Standardized estimates are displayed.

	Unstandardized Estimates	
	Within	**Between**
Total	-.66***	-.57***
Direct	-.25***	.19*
Indirect	-.41***	-.76***
Specifics		
Disobeying the law	-.30***	-.24***
Authoriatarianism in the Government	-.11***	-.52***

$X^2(6)=4.619$, AIC= 156976.896, RMSEA=.000, SRMR$_{within}$=.006, SRMR$_{between}$=.019

Notes: estimates with significant effects were marked with when significant at p<.05, ** when p<.01 and *** when p<.001; † denotes p<.1
Estimates where obtain through MLR estimation, accounting for complex design and plausible values.
Indirect effects where estimated via model constraints, which is an application of the delta method for MSEM models (Preacher, Zhang & Zyphur, 2011)

Generalizability

- These effects can only be estimated for Latin-Americans countries
- Need to address curricular differences to guide interpretation of results
  - Asian Module covers similar topics
  - Inclusion of this indicators into ICCS, 2016 for the whole sample?

This design doesn't permit us to make causal claims.

- Longitudinal studies would permit us to see time varying trends (cross lagged and growth models).

With these designs we can disentangle group effects: influences versus selection

- Dynamic Social Networks designs are promising for these area of research, to study particularly questions on socialization (Snijders, Steglich, & Schweinberger, 2007)

How to asses mediation in large scale assessments (complex data survey)?

- Just one plausible value approach And bootstrapped errors (Shrout and Bolger, 2002)

- Delta Method (Preacher, Zhang & Zyphur, 2011)

- 5 replications with bootstrapped errors and Rubin-Shafer method (Schafer, 1997, 1999, 1999; Schafer & Graham, 2002)

How safe are SENWEIGHTS for between countries comparisons?