A cross-national study of the influence of parental education on intention to vote in early adolescence: the roles of adolescents’ educational expectations and political socialization at home

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ABSTRACT
While empirical studies have observed a robust and positive relationship between parental education and the offspring’s political engagement in some countries, including the USA, little work has examined the mechanisms thought to underpin this relationship. Treating intention to vote in early adolescence as a proxy for political engagement, this study examines the family processes that might indirectly link parental education with adolescents’ intention to vote in our sample of 30 countries. We find that adolescents’ expectations of their own education and political stimulation at home are key factors mediating the link between parental education and adolescents’ intention to vote in most countries, although the exact nature of these indirect relations differs across countries. The intergenerational transmission of participatory advantages may well be a universal phenomenon as well as operate through the same pathway in a range of countries.

INTRODUCTION
Empirical studies have consistently shown that parental educational level is a robust predictor of the offspring’s political engagement. More educated citizens are more politically engaged than their less educated counterparts, and are also more likely to have offspring with the same kind of political activism (for review, see, Brady, Schlozman, & Verba, 2015). However, while much prior research on parental education pertains to the direct, positive influence on the offspring’s political engagement, the underlying processes by which this occurs have not been well understood. Furthermore, since our understanding on the role of parental education in shaping the offspring's political engagement is based primarily on research from a few developed countries including the United States, little has been known about whether the findings also apply to other societies.

Treating intention to vote in early adolescence (8th grader) as a proxy for political engagement, the purpose of the present study is to examine how parental education influences adolescents’ intention to vote in a range of countries. More specifically, building on and extending the status attainment model (Blau & Duncan, 1967; Sewell & Hauser, 1972) and social learning theory (Bandura, 1986), we examine the process of how parental education indirectly relates to adolescents’ intention to vote through its impact on adolescents’ educational expectations and political socialization at home in those countries.
To this end, we use data on 8th graders in 30 countries that participate in 2009 International Civic and Citizenship Education Study (ICCS).

The effect of parental education on offspring’s political engagement

Since Hyman’s seminal book (1959), *Political Socialization*, first conceptualized the field of study, the centrality of family influence in forming individuals’ political cognitions, attitudes and behaviors has received considerable attention by political scientists and educational researchers. The early political socialization literature mostly explored how families transmit political information and orientations, both explicitly and implicitly, to their offspring. Specifically, there has been significant, although limited, evidence for parent-child coherence in the content of political information and orientations, such as party affiliations, political ideology, and candidate preferences (see, for example, Beck & Jennings, 1991; Connell, 1972; Davies, 1965; Greenstein, 1965; Hess & Torney, 1967; Jennings & Niemi, 1974). In this line of work, family socioeconomic factors like parental education and income have been viewed as a noise that should be controlled for to identify the family’s ability to affect their offspring’s political choices.

It is relatively recently that sparse but important empirical studies began to examine participatory advantages that accrue to high socioeconomic families and pass on to their offspring. In particular, parental education has been recognized as the strongest predictor of the offspring’s participatory orientations and behaviors even when other socioeconomic factors are considered (Flanagan & Levine, 2010). Utilizing the US Citizen Participation Study, for example, Verba and his colleagues found a positive and strong association between parental educational level and adult offspring’s level of participation in electoral politics and the civic affairs of their communities, controlling for an array of individual and familial characteristics (Schlozman, Verba, & Brady, 2012, pp. 177–198; Verba, Burns, & Schlozman, 2003; Verba, Schlozman, & Burns, 2005, pp. 95–116). Using similar controls, McFarland and Thomas (2006)’s US-based panel study also found that parental education is predictive of adult offspring’s political activity. Sandell and Plutzer (2005) and Pacheco and Plutzer (2008)’s analyses of US National Longitudinal Study of 1988 produced similar finding, indicating that being raised by highly educated parents increases the offspring’s voter turnout in young adulthood. Parental education has also been known to influence the attitudinal and behavioral correlates of political activism during adolescence. For instance, Gimpel, Lay, and Schuknecht (2003) found in a study of US adolescents in 29 high schools that adolescents with more educated parents are more politically knowledgeable, interested, and efficacious compared to their peers with less educated parents. Similarly, Kahne and Middaugh (2008) used the California sample of 2,366 12th graders and 371 seniors to show that mother’s educational level is a robust predictor of adolescents’ political commitments and capacities. Altogether, these studies provide support for the significance of parental education in shaping various dimensions of the offspring’s political engagement in adolescence and adulthood.

Potential mediators of the association between parental education and offspring’s political engagement

Even though the majority of the literature on parental education pertains to the direct, positive influence on the offspring’s political engagement, the literature also suggests that it influences parental resources and behaviors that the offspring can potentially benefit from, thus leading to engagement or disengagement in politics for the offspring. More precisely, parental education has been known to influence their offspring’s political engagement through two types of pathway: (a) the transmission of educational attainment and (b) political socialization at home (Verba et al., 2003). In this regard, the status attainment model (Blau & Duncan, 1967; Sewell & Hauser, 1972) and social learning theory (Bandura, 1986) can be the prevailing perspectives describing the connective mechanisms linking parental education to the offspring’s political engagement.

As the status attainment model suggests, parental educational level is an important determinant of the offspring’s own educational attainment; which, in turn, should influence the offspring’s political
engagement outcomes. A large body of scholarship on social stratification has offered a number of plausible links between parental education and the educational attainment of their offspring (for review, see, Eccles & Davis-Kean, 2005). Parents’ years of schooling may influence the ways in which they interact with their offspring around learning activities in the home (Brody, Stoneman, & Flor, 1995; Davis-Kean, 2005; Eccles, 1993). Parents with more education may also have higher expectations for their offspring’s educational attainment, which, in turn, predict greater educational attainment for their offspring (Alexander, Entwisle, & Bedinger, 1994). Otherwise, parental education may influence the types of jobs parents are likely to have, the amounts of income parents are likely to earn, and where the family can live, which, in turn, should influence the kinds of learning opportunities in schools and neighborhoods they can afford to the offspring (Coleman, 1987; Furstenberg, Cook, Eccles, Elder, & Sameroff, 1999). And, of course, it might be a combination of all these explanations. Equally noteworthy is the powerful relationship between educational attainment and political engagement; presumably because education confers benefits that in and of themselves promote political activism (Brady, Verba, & Schlozman, 1995; Sunshine Hillygus, 2005; Wolfinger & Rosenstone, 1980) or because it is simply a proxy for social status (Kam & Palmer, 2008), educational attainment has been viewed as a key factor behind many aspects of political engagement. In these views, then, there is good reason to expect that more educated parents pass on their educational qualifications to the offspring, and the offspring with higher levels of educational attainment are subsequently more politically engaged.

On the other hand, the social learning theory posits that child outcomes are shaped in part through observational and direct learning experiences within the family; those experiences lead to the formation of internalized cognitive scripts, values, and beliefs that guide behavior over time (e.g. Anderson & Huesmann, 2003). There has been significant evidence in empirical research on political behavior that compared to less educated parents, more educated parents are not only more politically engaged in themselves, but also are more likely to provide politically stimulating home environments for their offspring (e.g. Schlozman et al., 2012). From a slightly different but related perspective, educational researchers have also found that parents with more education are more likely to value autonomy and independence and less likely to value obedience (Kohn, 1989). Based on these perspectives, then, it is possible to expect that children and adolescents with highly educated parents who model political activism and democratic political discussions should develop the guiding belief that political engagement is to be valued, and pursued, and anticipated. This belief should in turn promote higher levels of political engagement in their transcendence into adulthood (Andolina, Jenkins, Zukin, & Keeter, 2003; Verba et al., 2003). In summary, parental education affects the offspring’s political engagement across development, since more educated parents are more likely than less educated parents to be role models in shaping their offspring’s political engagement outcomes.

The present study

Based on data from a sample comprised of 30 countries that participate in 2009 International Civic and Citizenship Education Study (ICCS), this study tests a cross-sectional model of how parental education influences political engagement in early adolescence (see Figure 1 for our conceptual model). Given that intended political engagement in adolescence correlates highly with actual engagement in adulthood (Campbell, 2006) and voting is central to the nature of contemporary democratic rule (Bormann & Golder, 2013), we treat adolescents’ intention to vote as a proxy for political engagement.

Additionally, we use adolescents’ own educational expectations as a proxy that predicts their long-term educational attainments. Not surprisingly, past research has found a positive association between parental educational level and parental expectations for their offspring’s educational success (Davis-Kean, 2005), suggesting that more educated parents actively encourage their offspring to develop high expectations of their own. Thus, for example, adolescents exposed to highly educated parents who model achievement-oriented behaviors (e.g. obtaining advanced degrees) and provide achievement-oriented opportunities (e.g. library and museum trips) may have high expectations for their own educational attainment. Moreover, there has been considerable evidence to suggest that adolescents
with higher educational expectations are also more politically knowledgeable and skilled, more likely to intend to participate in politics in adulthood, and also more likely to support democratic norms and principles (McFarland & Thomas, 2006; Syvertsen, Wray-Lake, Flanagan, Wayne Osgood, & Bridgell, 2011; Torney-Purta, Lehmann, Oswald, & Schulz, 2001; Wiseman, Astiz, Fabrega, & Baker, 2011). This evidence indicates that adolescents already have well-ingrained expectations about their future role in life, and form value patterns that are congruent with such expectations. Taken together, it is thus possible to expect that adolescents of highly educated parents are more optimistic about their educational futures; in turn, adolescents with higher educational expectations are more likely to view themselves as informed voters in adulthood.

Based on the model posited here, we examine whether parental education influences adolescents’ intention to vote indirectly through its impact on adolescents’ educational expectations (through educational expectation) and political socialization at home (through home-based political socialization) in our sample comprised of 30 countries. The present study has two unique contributions to the existing literature: (a) we provide a more nuanced picture of how parental education shapes the offspring’s political engagement by combining the status attainment model and social learning theory; and (b) the sample consists of nations with different political regimes and social traditions, as well as varying levels of economic development.

Data

We use data on 8th grade adolescents in 30 democracies that participated in ICCS 2009. Administered by the International Association for the Evaluation of Educational Achievement (IEA), ICCS 2009 assesses the conceptual understandings about politics, political dispositions, attitudes, and behaviors of 8th graders across a large number of countries. ICCS 2009 also collects a variety of information on adolescents’ background characteristics, such as age, gender, educational expectations, family’s socioeconomic and cultural environments, immigration status, parental structure, and their school characteristics and experiences. ICCS 2009 is the most recent survey that collects information on adolescents’ intention to vote, which is a key variable for our study. It relies on a two-stage stratified sampling strategy; schools are firstly selected within each country using probability proportional to the number of students enrolled in a school, and then individual students are reselected within the schools. More specifically, ICCS 2009’s target population is defined as adolescents in the grade that represents eight years of schooling, which is counted from International Standard Classification of Education (ISCED) level 1. As a consequence, the average age of adolescents in 8th grade is 13.5 years or above at the time of testing in most countries; in countries in which the average age of adolescents in 8th grade is below 13.5 years, 9th grade becomes the target population. To take into account the complex nature of the sampling design implemented in ICCS 2009, we also use appropriate sampling weights in the analyses (Schulz, Ainley, & Fraillon, 2011).
Among the total 38 countries that participate in ICCS 2009, we exclude 8 countries (Hong Kong (SAR), the Netherlands, Lichtenstein, Dominican Republic, Guatemala, Indonesia, Paraguay, and Russian Federation) from the analyses. We exclude Hong Kong (SAR) and the Netherlands, because the two countries do not meet ICCS 2009’s sampling requirements. Liechtenstein, in which only 357 adolescents enrolled in 9 schools are sampled – whereas in most participating countries about 150 schools or more are sampled – is also excluded from the analyses. Additionally, a country’s low net enrollment rates in secondary education indicate that the 8th graders selected for the sample might not be representative of the population of the age group in that country. This concern about potential bias associated with the sample selection leads us to exclude five countries (Dominican Republic, Guatemala, Indonesia, Paraguay, and Russian Federation) from the analyses whose net enrollment rates in secondary education were below 70 percent at the time of the data collection. By adopting these country selection strategies, our final data consist of 100,613 8th graders in 30 countries (see Appendix 1).

**Measures**

**Adolescents’ intention to vote**

In the ICCS 2009 student questionnaire, adolescents are asked whether they will vote upon becoming adults. Specifically, adolescents are asked to indicate whether (a) they will vote in local elections, (b) they will vote in national elections, and (c) they will get information about candidates before voting in an election. ICCS 2009 uses these three items to derive a scale, ELECPART, which has a mean of 50 and standard deviation of 10 among the participating countries. Higher values on the scale correspond to a greater expectation of electoral participation in adulthood.

**Parental education**

ICCS 2009 classifies parents’ educational qualifications into the following categories: (1) ISCED 5A (theoretically oriented tertiary) or ISCED 6 (post-graduate); (2) ISCED 4 (non-tertiary post-secondary) or ISCED 5B (vocational tertiary); (3) ISCED 3 (upper-secondary); (4) ISCED 2 (lower-secondary); (5) ISCED 1 (primary); (6) None. Based on these categories, adolescents are asked to state the highest educational attainment that each of their parents have reached. Because both the status attainment model and social learning theory emphasize the family as the more important unit than an individual parent, we measure parental education by the percentile rank of the average of the two parents’ levels of education. In doing so, we can determine how parents’ educational level compares to the rest of parents within each country (see Appendix 2 for the quartiles of the parents’ average level of education for each country).

**Adolescents’ educational expectations**

Adolescents’ educational expectations are derived from a question that asks students to state the level of education they expect to attain. The resulting index, SISCED, has the following categories: (0) No completion of ISCED 2 (lower-secondary); (1) Completion of ISCED 2; (2) Completion of ISCED 3 (upper-secondary); (3) Completion of ISCED 4 (non-tertiary post-secondary) or ISCED 5B (vocational tertiary); (4) Completion of ISCED 5A (theoretically oriented tertiary) or ISCED 6 (post-graduate). Based on this index, the present study defines adolescents’ educational expectations as the percentile rank of their expected levels of educational attainment. This percentile rank measure provides information about how an individual adolescent’s expected educational level relates to the rest of adolescents within each country.

**Home-based political socialization**

ICCS 2009 asks adolescents how often they talk with parents regarding political issues and international politics, in which responses are grouped into four categories (never of hardly ever, at least once
a month, at least once a week, and daily or almost daily). Adolescents are also asked to indicate their parents’ level of interest in political issues, in which responses have four categories (not interested at all, not very interested, quite interested, and very interested). We measure each adolescent’s home-based political socialization with the average of the four items: (a) the frequency of talking with parents about political issues; (b) the frequency of talking with parents about what is happening in other countries; (c) mother’s interest in political issues; (d) father’s interest in political issues.

**Control variables**

We control for a series of individual characteristics that may explain adolescents’ intention to vote. These include traditional demographic characteristics, such as the respondent’s age, gender, and immigration status. Adolescents’ age is calculated by ICCS 2009 as the difference between the year and month of the testing and the year and month of their birth. Adolescents’ gender and immigration status are 0/1 binary variables that are given ‘1’ if the respondent is a female and immigrant, respectively. More precisely, adolescents’ immigration status distinguishes between adolescents born in the country of testing or who had at least one parent born in the country (coded as 0) and those born outside of the country of testing or whose parents were born in another country (coded as 1).

Given that the family is not the only one avenue by which adolescents are socialized into politics, we also take into account other sources of political socialization: (a) the school; (b) the media; and (c) peer groups. First, adolescents’ socialization experience in the school is gauged with the derived scale, PARTSCHL, which indicates the extent to which they participate in six civic-related activities in the school. Higher values on the scale reflect higher levels of civic participation in the school. Second, adolescents’ exposure to information in the media is measured with the average of the three items which ask adolescents how frequently (never of hardly ever, at least once a month, at least once a week, and daily or almost daily) they use newspapers, television, and the internet to inform themselves about national and international news. Lastly, the influence from peer groups is measured with the average of the two items which asks adolescents to state how frequently (never of hardly ever, at least once a month, at least once a week, and daily or almost daily) they discuss with their friends about political issues and events in other countries. Descriptive statistics for control variables included in the analyses are presented in Appendix 1.

**Analytic strategies**

In examining the process through which parental education influences adolescents’ intention to vote, we use Mplus 7.31 with maximum likelihood estimation with robust standard errors (MLR) to test the models of interest. Although there are various amounts of missing data across the variables in the present study, the largest amount of data missing is less than 10%, which is well within the generally accepted bounds for obtaining accurate estimates with Mplus’ maximum likelihood procedures. We assess the model’s goodness of fit for each country with three indices: the comparative fit index (CFI), the incremental fit index (IFI), and the standardized root-mean-square residual (SRMR). Models are considered a good fit if CFIs and IFIs are greater than .95 and the SRMRs are less than .05. To test the possibility that there might be alternative models that fit the data as well or better, we also compare the model fit indices of the mediation model with those from the total effect model.

Firstly, for an individual $i$ from a country $j$, the total effect of parental education is obtained using the following model:

$$
\text{Intention to vote}_{ij}^{\text{adolescent}} = \beta_0^{(1)} + \beta_1^{(1)} \text{Edu}_{ij}^{\text{parent}} + \phi_i^{(1)} C_j + r_{ij}^{(1)}
$$

where Intention to vote$_{ij}^{\text{adolescent}}$ = adolescents’ intention to vote, Edu$_{ij}^{\text{parent}}$ = parental education, $C_j$ = a vector of control variables, and $r_{ij} = \text{error~term}$. 
Then, the total effect of parental education is decomposed into direct and indirect effects. Note that the present study assumes parental education to be indirectly related to adolescents’ intention to vote through its impact on adolescents’ educational expectations (through educational expectation) and political socialization at home (through home-based political socialization). The direct effect of parental education on adolescents’ intention to vote is estimated using the following model:

\[
\text{Intention to vote}_{ij}^{\text{adolescent}} = \beta_0^{(2)} + \beta_1^{(2)} \text{Edu}_{ij}^{\text{parent}} + \beta_2^{(2)} \text{Edu}_{ij}^{\text{adolescent}} + \beta_3^{(2)} \text{Home politics}_{ij} + \phi_0^{(2)} C_{ij} + \epsilon_{ij}^{(2)} \quad (2)
\]

where \(\text{Edu}_{ij}^{\text{adolescent}}\) = adolescents’ educational expectations and \(\text{Home politics}_{ij}\) = home-based political socialization. \(\beta_1^{(2)}\) is the direct effect of parental education; it is the association between parental education and adolescents’ intention to vote that remains after taking into account the effects of adolescents’ educational expectations and home-based political socialization.

To compute the indirect effects of parental education, we first estimate the effect of parental education on adolescents’ educational expectations and home-based political socialization as follows:

\[
\text{Edu}_{ij}^{\text{adolescent}} = \beta_0^{(3)} + \beta_1^{(3)} \text{Edu}_{ij}^{\text{parent}} + \phi_0^{(3)} C_{ij} + \epsilon_{ij}^{(3)} \quad (3)
\]

and

\[
\text{Home politics}_{ij} = \beta_0^{(4)} + \beta_1^{(4)} \text{Edu}_{ij}^{\text{parent}} + \phi_0^{(4)} C_{ij} + \epsilon_{ij}^{(4)} \quad (4)
\]

Next, the indirect effects of parental education are defined as follows:

\[
\beta_{ij}^{\text{adolescent edu}} = \beta_1^{(2)} \cdot \beta_1^{(3)} \quad (5)
\]

and

\[
\beta_{ij}^{\text{home politics}} = \beta_2^{(2)} \cdot \beta_1^{(4)} \quad (6)
\]

Results

Model fit

As indicated by the fit indices in Table 1, our mediated model fits the data extremely well in all 30 countries. However, to test the possibility that there might be alternative models that fit the data as well or better, we compare the mediated model to the model that does not consider the indirect influences of parental education through adolescents’ educational expectations and home-based political socialization (i.e. non-mediated model). In all countries, the mediated model appears to fit the data better than the non-mediated model, thus lending tentative support to the argument that parental education is related indirectly to adolescents’ intention to vote through adolescents’ expectations of their own education and political stimulation at home in our sample of 30 countries.

Total, direct and indirect effects of parental education in 30 countries

Table 2 presents the estimates of the total, direct and indirect effects of parental education on adolescents’ intention to vote in 30 countries. As discussed above, the total effect of parental education (\(\beta_1^{(1)}\)) is the association between parental education and adolescents’ intention to vote, once controlling for demographic characteristics and influences from other socialization agents. The total effect of parental education is decomposed into direct and indirect effects. As hypothesized, parental education indirectly affects adolescents’ intention to vote through adolescents’ educational expectations (\(\beta_{ij}^{\text{adolescent edu}}\) in Equation (5)) and home-based political-socialization (\(\beta_{ij}^{\text{home politics}}\) in Equation (6)). Additionally, the direct effect of parental education (\(\beta_1^{(2)}\)) indicates the association between
parental education and adolescents’ intention to vote that still remains after taking into account the effects of adolescents’ educational expectations, home-based political socialization, and control variables. Results for the total and direct effects of control variables included in the analyses are presented in Appendices 3 and 4, respectively.

In all countries except Colombia and Malta, the total effect of parental education is positive and statistically significant at the 0.05 level. This indicates that adolescents of more educated parents are more likely than those of less educated parents to see themselves as informed voters in adulthood in all countries except Colombia and Malta, even after demographic characteristics and influences from other socialization agents are controlled. However, the strength of this association varies across countries. Switzerland, Norway, and Czech Republic belong to the top three countries showing the largest total effect of parental education on adolescents’ expected voting, whereas the corresponding effect is relatively smaller in such countries as Korea, Bulgaria, Chile, and Thailand. To facilitate interpretations of the coefficients, we provide quartiles of the parents’ average level of education for each country in Appendix 2. For instance, the coefficient of 5.838 (SE = .635, p < .001) in Czech Republic indicates that a difference in adolescents’ intention to vote (i.e. ELECPART) between those whose parents’ average level of education is upper-secondary schooling and those whose parents’ average level of education is non-tertiary, post-secondary schooling is 2.919 points (2.919; 5.838 × .50). Given that ELECPART is a scale with a mean of 50 and a standard deviation of 10, this is an appreciable difference, which is almost three-tenths of the standard deviation. In comparison, the coefficient of 2.331 (SE = .483, p < .001) in Thailand indicates that a difference in ELECPART between those whose parents’ average level of education is primary schooling and those whose parents’ average level of education is upper-secondary schooling is about one-tenth of the standard deviation in ELECPART (1.166; 2.331 × .50), which is a noticeably small difference.

Table 1. Model fit statistics for 30 countries.

| Notes: Countries are sorted in a descending order of CFI in the mediated models. Models are considered a good fit if CFIIs and IFIs are greater than .95 and SRMRs are less than .05. |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Model fit statistics for 30 countries. | CFI | IFI | SRMR |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Mediated | Non-mediated | Mediated | Non-mediated | Mediated | Non-mediated |
| Austria | .996 | .244 | .996 | .244 | .007 | .122 |
| Belgium | .987 | .192 | .988 | .194 | .009 | .108 |
| Bulgaria | .997 | .168 | .997 | .170 | .005 | .107 |
| Chile | .992 | .145 | .992 | .147 | .007 | .102 |
| Colombia | 1.000 | .169 | 1.000 | .171 | .002 | .084 |
| Cyprus | .998 | .175 | .998 | .177 | .004 | .112 |
| Czech Republic | .987 | .203 | .987 | .203 | .011 | .123 |
| Denmark | .990 | .221 | .990 | .222 | .010 | .136 |
| England | .978 | .187 | .979 | .189 | .014 | .132 |
| Estonia | .988 | .129 | .988 | .132 | .009 | .117 |
| Finland | .981 | .170 | .982 | .172 | .012 | .130 |
| Greece | .976 | .122 | .976 | .125 | .013 | .118 |
| Ireland | .981 | .145 | .981 | .147 | .012 | .122 |
| Italy | .979 | .126 | .979 | .128 | .013 | .118 |
| Korea | .992 | .170 | .993 | .171 | .008 | .122 |
| Latvia | .993 | .141 | .993 | .144 | .007 | .111 |
| Lithuania | .989 | .134 | .989 | .136 | .009 | .125 |
| Luxembourg | .979 | .200 | .979 | .201 | .014 | .125 |
| Malta | .987 | .192 | .988 | .194 | .010 | .103 |
| Mexico | .995 | .146 | .995 | .148 | .005 | .094 |
| New Zealand | .996 | .220 | .996 | .221 | .006 | .135 |
| Norway | .985 | .187 | .985 | .188 | .011 | .135 |
| Poland | .995 | .184 | .995 | .185 | .006 | .120 |
| Slovak Republic | .981 | .139 | .981 | .141 | .012 | .117 |
| Slovenia | .988 | .121 | .988 | .123 | .009 | .120 |
| Spain | .983 | .158 | .983 | .159 | .011 | .129 |
| Sweden | .991 | .164 | .991 | .165 | .008 | .139 |
| Switzerland | .996 | .193 | .996 | .195 | .007 | .117 |
| Taiwan | .998 | .149 | .998 | .150 | .004 | .111 |
| Thailand | .993 | .094 | .993 | .096 | .006 | .112 |

Note: Countries are sorted in a descending order of CFI in the mediated models. Models are considered a good fit if CFIIs and IFIs are greater than .95 and SRMRs are less than .05.
Table 2. Total, direct, and indirect effects of parental education on adolescents’ intention to vote in 30 countries.

| Country          | $\beta_{ij}^{(1)}$ | SE  | $\beta_{ij}^{(2)}$ | SE  | $\beta_{ij}^{\text{educational expectations}}$ | SE  | $\beta_{ij}^{\text{home-based political socialization}}$ | SE  |
|------------------|---------------------|-----|---------------------|-----|-----------------------------------------------|-----|-------------------------------------------------|-----|
| Austria          | 4.974***             | .690| 2.406***            | .710| .920***                                        | .203| 1.657***                                        | .234|
| Belgium          | 3.630***             | .667| 1.666*              | .683| .486**                                         | .181| 1.480***                                        | .213|
| Bulgaria         | 1.544*               | .741| .415               | .792| 1.164***                                       | .314| .765***                                         | .196|
| Chile            | 1.903**              | .664| -.324              | .700| .774***                                        | .234| 1.445***                                        | .187|
| Colombia         | .914                 | .501| .198               | .517| .054                                          | .093| .650***                                         | .106|
| Cyprus           | 2.950***             | .764| 1.455              | .771| .353*                                          | .173| 1.086***                                        | .188|
| Czech Republic   | 5.838***             | .635| 1.906**             | .622| 1.516***                                       | .177| 2.401***                                        | .225|
| Denmark          | 4.326***             | .555| 1.393*             | .566| 1.202***                                       | .169| 1.766***                                        | .187|
| England          | 4.432***             | .773| .960               | .761| .975***                                        | .189| 2.357***                                        | .308|
| Estonia          | 3.610***             | .633| 1.469*             | .663| 1.003**                                        | .211| 1.145***                                        | .184|
| Finland          | 5.055***             | .564| 2.120***            | .560| 1.039***                                       | .185| 1.903***                                        | .206|
| Greece           | 3.201***             | .719| .481               | .748| 1.585***                                       | .282| 1.089***                                        | .172|
| Ireland          | 4.665***             | .625| .714               | .700| 1.931***                                       | .235| 1.989***                                        | .233|
| Italy            | 4.017***             | .586| .840               | .609| 2.136***                                       | .237| 1.067***                                        | .151|
| Korea            | 1.523***             | .442| .074               | .446| .831**                                         | .114| .618***                                         | .092|
| Latvia           | 2.846***             | .732| 1.184              | .792| .740**                                         | .269| .923***                                         | .184|
| Lithuania        | 2.519***             | .616| -.140              | .651| 1.657***                                       | .283| 1.006***                                        | .156|
| Luxembourg       | 5.803***             | .700| 2.265**            | .718| 1.668***                                       | .254| 1.883***                                        | .235|
| Malta            | .573                 | .799| -.1333             | .799| 1.047**                                        | .276| .891***                                         | .216|
| Mexico           | 2.659***             | .492| .794               | .503| .960***                                        | .154| .932***                                         | .115|
| New Zealand      | 4.461***             | .709| 1.560*             | .720| 1.516***                                       | .222| 1.334***                                        | .211|
| Norway           | 6.229***             | .757| 1.407               | .805| 2.363**                                        | .298| 2.421***                                        | .288|
| Poland           | 3.025***             | .692| .533               | .711| 1.320**                                        | .255| 1.177***                                        | .183|
| Slovak Republic  | 2.428***             | .765| -.1038             | .770| 2.041**                                        | .267| 1.413***                                        | .223|
| Slovenia         | 4.189***             | .707| 1.031               | .739| 1.818**                                        | .280| 1.342**                                         | .201|
| Spain            | 2.665***             | .643| .355               | .671| 1.226**                                        | .228| 1.086**                                         | .161|
| Sweden           | 3.680***             | .635| .769               | .677| 1.251**                                        | .268| 1.638**                                         | .208|
| Switzerland      | 6.400***             | .914| 2.826**             | .947| 1.892**                                        | .321| 1.648***                                        | .261|
| Taiwan           | 3.315**              | .492| 1.063*             | .500| 1.423**                                        | .165| .826**                                          | .113|
| Thailand         | 2.331***             | .483| .958               | .499| 1.202**                                        | .160| .171***                                         | .051|

Notes: Authors’ estimate using the ICCS 2009 data-set. SE refers to standard error. Countries are sorted in an alphabetical order.
***$p < .001$; **$p < .01$; *$p < .05$.

As shown in the estimates of the indirect effects of parental education, among countries whose total effect of parental education is statistically significant, both adolescents’ educational expectations and home-based political socialization are important mediating factors by which parental education relates to adolescents’ intention to vote, once demographic characteristics and influences from other socialization agents are controlled. That is, in all countries except Colombia and Malta, parental education is related to adolescents’ intention to vote indirectly through adolescents’ educational expectations and home-based political socialization. However, the relative strength of these indirect relations differs across countries. Specifically, the strength of the indirect effect through adolescents’ educational expectations is relatively stronger in such countries as Norway, Italy, and Slovak Republic, whereas parental education has a smaller indirect effect on adolescents’ intention to vote through adolescents’ educational expectations than through home-based political socialization in countries such as Cyprus, Belgium, and Latvia. In the same fashion, countries like Norway, Czech Republic, and England show a stronger indirect effect of parental education through home-based political socialization than through adolescents’ educational expectations; by contrast, Thailand, Korea, and Bulgaria belong to the bottom three-countries having the smallest relative indirect effect of parental education through home-based political socialization.

Turning to the estimates of the direct effect of parental education, in most countries, parental education appears to have a small and statistically insignificant direct effect on adolescents’ intention to vote. This indicates that after taking into account the indirect effects of parental education through
adolescents’ educational expectations and home-based political-socialization, parental education has little additional impact on adolescents’ intention to vote in these countries. However, in some countries (e.g. Switzerland, Austria, Luxembourg, Finland, Czech Republic, Belgium, New Zealand, Estonia, and Taiwan), the direct effect of parental education remains statistically significant even after the effects through adolescents’ educational expectations and home-based political socialization are taken into account. It suggests that factors other than adolescents’ educational expectations and home-based political socialization are likely to mediate the relationship between parental education and adolescents’ intention to vote in these countries. Moreover, in countries such as Luxembourg, Austria, Finland, Switzerland, and Belgium, the size of the direct effect of parental education on adolescents’ intention to vote is even larger than that of the indirect effects.

Conclusions and discussion

More educated parents are more politically engaged than less educated parents, and are also more likely to have offspring with the same kind of political activism. Both researchers and policymakers fear that this may have deleterious implications for contemporary democracies, whose enduring hallmark is the expectation that politics will be accessible and responsive to all citizens on an equal basis. Missing from the literature, however, is how parental educational level influences their offspring’s political engagement outcomes. Furthermore, as the majority of studies on the issue has been conducted in a few developed countries, little has been known about whether the strong, positive influence of parental education on the offspring’s political engagement is applicable to other societies.

Treating intention to vote in early adolescence as a proxy for political engagement, the original contribution of this study is hence twofold. First, building on and extending the status attainment model and social learning theory, we identify the mechanisms by which well-educated parents produce adolescent offspring who view themselves active participants in the political system. Parents with high levels of education pass on their educational advantages to their offspring, which are, in turn, translated into political activism in the next generation. In addition to such dominant assumptions in the social stratification and political behavior literature, this study finds that more educated parents have adolescent offspring with higher expectations of their own education and that such predisposition to attain education (vs. having attained that education) has a strong, positive impact on their intention to vote. This finding suggests that the resource advantages conferred by highly educated parents can have consequences not only for the offspring’s educational expectations, but for their democratic behavior. Adolescents exposed to highly educated parents who provide cognitively stimulating and emotionally supportive environments in the home may develop higher expectations for their own education, and develop participatory orientations that are congruent with such expectations. Additionally, our study also finds that more educated parents provide a politically rich home environment – where parents model high levels of political interest and democratic political discussions – for their adolescent offspring, which in turn increases their likelihood to vote. This finding indicates that the amount of schooling parents receive influences the way they structure home environments in boosting the offspring’s political activism. Parents’ education may provide both skills and knowledge necessary for them to be psychologically engaged in politics and to create a home environment in which there is democratic political discussion, thereby enabling them to act as citizenship role models for their offspring.

Second, the data we use offer evidence that in countries in which parental education is a robust predictor of adolescents’ intention to vote (i.e. in all countries except Colombia and Malta), adolescents’ expectations of their own education and political stimulation at home are important factors that drive the link between parental education and adolescents’ intention to vote. At the same time, however, the relative strength of these indirect relations varies across countries. While the indirect effect through adolescent’s educational expectations is relatively stronger in countries such as Norway, Italy, and Slovak Republic, parental education indirectly affects adolescents’ intention to vote primarily through home-based political socialization in such countries as Norway, Czech Republic, and England. Furthermore, parental education has both a direct and indirect relation to adolescents’ intention to vote
in a few countries (e.g. Switzerland, Austria, and Luxembourg), indicating that, in these countries, the relationship between parental education and adolescents’ intention to vote is not fully explained by our proposed indirect paths. Taken together, although the exact nature of the indirect process differs across countries, we find that the intergenerational transmission of participatory advantages is rather a universal phenomenon and operates through the same pathway across a range of countries. Future research should investigate what country-level characteristics (e.g. a country’s cultural, political, and economic contexts) can underlie cross-national variation in the specifics of how parents’ educational attainment influences adolescent offspring’s intention to be an informed voter. Another opportunity for future researchers will be to consider what other parental resources and behaviors can mediate the relationship between parental education and adolescents’ intention to vote in countries in which its relationship is not fully accounted for by the indirect relations included in our model.

The empirical findings of the present study should be considered in light of some limitations. One of the strongest limitations is our reliance on cross-sectional data to test the family processes linking parental education with adolescent’s intention to vote. Although ICCS 2009 is the most recently available and internationally comparable data on adolescents’ political engagement outcomes, it only includes information from parents and adolescents at one time point. Thus, we should remind readers that it is only currently possible to examine associations among the family processes included in our study. Causal claims can be made if cross-sectional data like ICCS 2009 are supplemented with longitudinal data that connects early adolescence to late adolescence and adulthood. Second, our analysis is based on a limited number of countries that participate in ICCS 2009. Although our sample consists of countries with varying levels of economic development, low-income economies (i.e. those with a GNI per capita of $975 or less in 2009) are not included. Thus, the results reported herein should be interpreted with a caution when applying to other countries, especially low-income countries. Third, given that voting is central to the nature of contemporary democratic rule, we use adolescents’ intention to vote as a proxy for their political engagement. However, one cannot rule out the possibility that different findings would emerge if other political engagement outcomes are used. Therefore, it will be important in future research to replicate this study’s findings with other measures of adolescents’ political engagement outcomes.

In summation, our results suggest that, with some important cross-national variation in the specifics of the indirect relations, parental education influences adolescents’ intention to vote indirectly through its impact on adolescents’ educational expectations and political socialization at home. In so doing, the current study offers a theoretical and empirical investigation of why parental educational level is so powerful explanatory variable of the offspring’s participatory profile in a range of countries. In this context, this study’s findings have important implications for policymakers and reformers who attempt to address political engagement gaps across generations and among socio-demographic groups. Although by no means a quick intervention, policies designed to improve educational opportunities and outcomes for disadvantaged citizens would be promising strategies to ensure that the next generation has equal access to the political system.

Notes

1. We use the student-level weights TOTWGTS provided in the ICCS data-set in efforts to obtain estimates for a given country that are effectively based on a sample of adolescents that is representative of the population of 8th graders in that country. As outlines in the 2009 ICCS Technical Report (pp. 70–73), these weights are a product of several different weights, including, for a given adolescent, the inverse of the probability of the adolescent’s school being selected for the study, and the inverse of the adolescents’ class being selected for the study.

2. Due to the small number of immigrant adolescents in some countries (e.g. less than 5 percentage of the sample population), we do not further distinguish adolescents based on their generational status.

3. ICCS 2009 derives five school-related items from the student questionnaire, including adolescents’ perceptions of openness in classroom discussions, influence of decisions about the school, student-teacher relations in the school, the value of participation in the school, and adolescents’ participation in civic-related activities in the school. Given that actual participation in civic-related activities can be a better indicator of adolescents’ socialization experiences in the school than their perceptions of the school context, we use their participation in civic-related
activities in the school as a proxy measure for socialization experiences in the school. Originally in the ICCS 2009 student questionnaire, the six civic-related activities in the school include (1) voluntary participation in school-based music or drama activities outside of regular lessons, (2) active participation in a debate, (3) voting for class representative or school parliament, (4) taking part in decision-making about how the school is run, (5) taking part in discussions at a student assembly, and (6) becoming a candidate for class representative or school parliament.

4. Results of missing data analyses are not shown, but available from the authors upon request.
5. The standard errors for the indirect effects of parental education are computed using the Sobel test (1982).
6. Due to space limitation, the coefficients of control variables are not discussed here.
7. Note that in Czech Republic, the average of the two parents’ levels of education at the first quartile (Q1) is upper-secondary schooling; the average of the two parents’ levels of education at the third quartile (Q3) is non-tertiary, post-secondary education.
8. Note that in Thailand, the average of the two parents’ levels of education at the first quartile (Q1) is primary schooling; the average of the two parents’ levels of education at third quartile (Q3) is upper-secondary.

Disclosure statement
No potential conflict of interest was reported by the authors.

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## Appendix 1. Descriptive statistics for variables included in the analyses

|                       | Adolescents’ intention to vote (ELECPART) | Parental education | Home-based political socialization | Civic participation at school (PARTSCHL) | Media attention | Peer group influence | Sample N |
|------------------------|-------------------------------------------|--------------------|------------------------------------|------------------------------------------|-----------------|---------------------|----------|
|                       | N(a)                                       | Father’s education | Age                               | Female (%)                              | Imigrant (%)    |                     |          |
| Austria                | 50.68 (9.45)                              | 3.26 (.94)         | 2.62 (1.01)                        | 1.99 (.63)                              | 14.35 (.53)     | 48.4                | 18.2     |
| Belgium                | 45.77 (9.24)                              | 3.65 (1.08)        | 3.10 (.81)                         | 1.70 (.58)                              | 13.94 (.56)     | 49.4                | 11.2     |
| Bulgaria               | 47.58 (10.66)                             | 3.52 (1.13)        | 3.19 (1.07)                        | 1.83 (.62)                              | 14.69 (.47)     | 50.4                | 0.7      |
| Chile                  | 49.97 (12.40)                             | 3.15 (1.22)        | 3.35 (.87)                         | 1.84 (.66)                              | 14.18 (.60)     | 51.1                | 0.8      |
| Colombia               | 53.64 (8.97)                              | 2.63 (1.67)        | 3.58 (.83)                         | 1.84 (.67)                              | 14.38 (1.01)    | 53.4                | 0.5      |
| Cyprus                 | 48.44 (10.95)                             | 3.36 (1.24)        | 3.33 (1.11)                        | 1.88 (.63)                              | 13.86 (.41)     | 48.2                | 7.2      |
| Czech Republic         | 43.70 (10.70)                             | 3.41 (.82)         | 2.79 (1.01)                        | 1.67 (.56)                              | 14.39 (.48)     | 46.0                | 2.4      |
| Denmark                | 48.97 (9.03)                              | 3.65 (.99)         | 3.09 (.72)                         | 1.93 (.60)                              | 14.89 (.39)     | 50.4                | 9.2      |
| England                | 47.36 (10.13)                             | 3.52 (1.09)        | 3.26 (.93)                         | 1.76 (.65)                              | 14.03 (.30)     | 51.3                | 14.0     |
| Estonia                | 46.58 (8.99)                              | 3.59 (1.00)        | 2.99 (1.12)                        | 1.73 (.58)                              | 15.02 (.46)     | 50.3                | 7.1      |
| Finland                | 49.27 (8.75)                              | 3.40 (1.11)        | 2.80 (1.00)                        | 1.70 (.54)                              | 14.73 (.34)     | 51.2                | 2.4      |
| Greece                 | 49.95 (10.51)                             | 3.39 (1.24)        | 3.42 (.87)                         | 1.93 (.64)                              | 13.68 (.39)     | 50.9                | 10.6     |
| Ireland                | 52.29 (9.78)                              | 3.40 (1.15)        | 3.05 (1.07)                        | 1.95 (.64)                              | 14.28 (.44)     | 48.5                | 11.5     |
| Italy                  | 54.24 (9.15)                              | 2.86 (1.15)        | 2.94 (1.06)                        | 2.11 (.61)                              | 13.81 (.50)     | 47.9                | 6.9      |
| Korea                  | 48.52 (8.94)                              | 3.80 (1.09)        | 2.06 (5.56)                        | 14.73 (.31)                             | 43.3             | 0.1                 | 45.4     |
| Latvia                 | 50.06 (9.79)                              | 3.65 (1.08)        | 2.91 (.98)                         | 2.04 (.57)                              | 14.79 (.49)     | 51.1                | 5.1      |
| Lithuania              | 50.94 (9.40)                              | 3.65 (1.02)        | 1.91 (.97)                         | 1.99 (.55)                              | 14.69 (.47)     | 49.2                | 4.6      |
| Luxembourg             | 47.75 (9.98)                              | 2.88 (1.41)        | 2.98 (1.05)                        | 1.93 (.62)                              | 14.49 (.66)     | 51.1                | 38.5     |
| Malta                  | 49.48 (9.18)                              | 3.19 (1.27)        | 3.09 (1.25)                        | 2.20 (.47)                              | 13.91 (.44)     | 47.2                | 1.7      |
| Mexico                 | 53.16 (9.31)                              | 2.56 (1.53)        | 3.44 (1.07)                        | 1.67 (.61)                              | 14.08 (.59)     | 52.1                | 1.5      |
| New Zealand            | 48.87 (9.72)                              | 3.69 (1.12)        | 3.20 (.95)                         | 1.96 (.64)                              | 14.06 (.35)     | 49.0                | 21.9     |
| Norway                 | 52.03 (10.41)                             | 3.97 (1.03)        | 2.94 (1.09)                        | 1.92 (.60)                              | 13.83 (.31)     | 49.8                | 9.8      |
| Poland                 | 48.22 (9.88)                              | 3.40 (1.81)        | 3.23 (1.99)                        | 2.00 (.58)                              | 14.88 (.37)     | 50.3                | 1.4      |
| Slovak Republic        | 47.82 (9.90)                              | 3.45 (1.84)        | 3.06 (1.02)                        | 1.73 (.55)                              | 14.36 (.46)     | 50.3                | 0.6      |
| Slovenia               | 49.61 (10.44)                             | 3.65 (9.11)        | 3.09 (.90)                         | 1.71 (.55)                              | 13.80 (.33)     | 49.4                | 1.8      |
| Spain                  | 51.20 (9.93)                              | 2.95 (1.51)        | 3.04 (1.49)                        | 1.80 (.61)                              | 14.08 (.70)     | 50.3                | 10.8     |
| Switzerland            | 48.62 (10.21)                             | 3.14 (1.15)        | 2.32 (1.08)                        | 1.96 (.60)                              | 14.59 (.64)     | 49.7                | 24.9     |
| Sweden                 | 49.12 (9.65)                              | 3.76 (1.13)        | 3.13 (.98)                         | 1.76 (.62)                              | 14.75 (.35)     | 49.5                | 17.8     |
| Taiwan                 | 50.94 (9.71)                              | 3.22 (1.13)        | 3.15 (1.02)                        | 1.71 (.59)                              | 14.21 (.31)     | 47.9                | 0.8      |
| Thailand               | 53.33 (8.86)                              | 2.25 (1.52)        | 3.31 (1.02)                        | 2.15 (.54)                              | 14.35 (4.8)     | 53.4                | 1.1      |

Note: Values in parentheses are standard deviations.
### Appendix 2. Quartiles of the parents’ average level of education, by country

| Country          | Q1  | Q2  | Q3  |
|------------------|-----|-----|-----|
| Austria          | 3.0 | 3.0 | 2.5 |
| Belgium          | 3.0 | 2.0 | 1.5 |
| Bulgaria         | 3.0 | 3.0 | 1.5 |
| Chile            | 4.0 | 3.0 | 2.5 |
| Colombia         | 5.0 | 3.5 | 2.0 |
| Cyprus           | 3.0 | 3.0 | 2.0 |
| Czech Republic   | 3.0 | 3.0 | 2.0 |
| England          | 3.0 | 2.5 | 2.0 |
| Denmark          | 3.0 | 2.5 | 2.0 |
| Estonia          | 3.0 | 2.5 | 1.5 |
| Finland          | 3.0 | 2.5 | 2.0 |
| Greece           | 3.0 | 3.0 | 2.0 |
| Ireland          | 3.0 | 2.5 | 2.0 |
| Italy            | 4.0 | 3.5 | 2.5 |
| Korea            | 3.0 | 2.5 | 1.5 |
| Latvia           | 3.0 | 2.5 | 1.5 |
| Lithuania        | 3.0 | 2.5 | 2.0 |
| Luxembourg       | 4.0 | 3.0 | 2.0 |
| Malta            | 4.0 | 3.5 | 2.5 |
| Mexico           | 4.5 | 4.0 | 2.5 |
| New Zealand      | 3.0 | 2.0 | 1.5 |
| Norway           | 2.5 | 2.0 | 1.0 |
| Poland           | 3.0 | 3.0 | 2.0 |
| Slovak Republic  | 3.0 | 3.0 | 2.0 |
| Slovenia         | 3.0 | 2.5 | 1.5 |
| Spain            | 4.0 | 3.0 | 2.0 |
| Sweden           | 3.0 | 2.0 | 1.5 |
| Switzerland      | 3.5 | 3.0 | 2.5 |
| Taiwan           | 3.5 | 3.0 | 2.0 |
| Thailand         | 5.0 | 4.5 | 3.0 |

Notes: Q1 = first quartile; Q2 = second quartile; Q3 = third quartile. Parents’ educational qualifications are classified into the following categories: (1) ISCED 5A (theoretically oriented tertiary) or ISCED 6 (post-graduate); (2) ISCED 4 (non-tertiary post-secondary) or ISCED 5B (vocational tertiary); (3) ISCED 3 (upper-secondary); (4) ISCED 2 (lower-secondary); (5) ISCED 1 (primary); (6) None.
### Appendix 3. Total effects of control variables and parental education

| Country          | Intercept | Age      | Gender | Immigrant | Peer group influence | Civic participation at school | Media attention | Parental education |
|------------------|-----------|----------|--------|-----------|----------------------|-------------------------------|----------------|--------------------|
| Austria          | 41.89 (5.39)*** | -0.45 (36) | -0.34 (36) | -3.58 (4.6)** | 2.35 (2.8)** | 1.24 (2.9)** | .13 (0.02)** | 4.97 (6.9)** |
| Belgium          | 38.60 (5.05)*** | -0.60 (35) | -0.13 (37) | -0.38 (67) | 2.54 (2.8)** | 0.98 (3.2)** | .15 (0.02)** | 3.63 (6.7)** |
| Bulgaria         | 27.17 (6.59)*** | 0.40 (44) | 0.85 (41)* | -1.99 (2.16) | 2.31 (2.8)** | 0.59 (2.9)* | .14 (0.02)** | 1.54 (7.4)* |
| Chile            | 42.46 (5.24)**  | -0.92 (35)** | -0.46 (39) | -2.99 (2.46) | 2.49 (3.2)** | 1.32 (3.8)** | .23 (0.02)** | 1.90 (6.6)** |
| Colombia         | 44.86 (2.41)**  | -0.30 (14)* | -0.88 (28)** | -3.38 (2.39) | 1.32 (2.3)** | 0.58 (1.9)** | .17 (0.02)** | 0.91 (5)** |
| Cyprus           | 37.24 (7.81)*** | -0.45 (56) | -0.05 (42) | -1.72 (9.1)  | 2.64 (3.3)** | 0.08 (3.1)  | .21 (0.02)** | 2.95 (7.6)** |
| Czech Republic   | 37.24 (8.46)*** | -1.10 (33)** | -0.32 (32) | -2.53 (9.0)** | 2.92 (2.2)** | 0.93 (2.7)** | .23 (0.02)** | 5.84 (6.4)** |
| Denmark          | 37.43 (6.54)*** | -0.53 (43) | 1.59 (30)** | -1.49 (58)*  | 2.29 (2.4)** | 1.70 (2.4)** | .18 (0.02)** | 4.33 (5.6)** |
| England          | 24.03 (9.82)*  | .23 (70)   | -0.72 (44) | 1.49 (64)*   | 2.18 (3.0)** | 0.69 (37)   | .25 (0.03)** | 4.34 (7.7)** |
| Estonia          | 58.81 (7.15)**  | -1.82 (47)** | -0.69 (37) | -0.82 (8.2)  | 1.95 (2.6)** | 0.83 (28)** | .14 (0.02)** | 3.61 (6.3)** |
| Finland          | 41.07 (6.55)**  | -0.62 (44) | 1.14 (31)** | -1.12 (1.38) | 1.77 (2.1)** | 1.71 (2.8)** | .16 (0.02)** | 5.06 (5.6)** |
| Greece           | 59.77 (7.62)**  | -1.85 (54)** | 1.28 (40)** | -3.29 (72)** | 2.20 (3.0)** | 0.48 (28)   | .16 (0.02)** | 3.20 (7.2)** |
| Ireland          | 38.32 (6.34)**  | -0.09 (44) | 1.37 (38)** | -3.60 (68)** | 2.19 (2.5)** | 0.07 (28)   | .17 (0.02)** | 4.67 (6.8)** |
| Italy            | 60.83 (5.04)**  | -1.31 (36)** | -0.51 (32) | -5.17 (77)** | 1.85 (2.5)** | 0.34 (24)   | .10 (0.02)** | 4.02 (5.9)** |
| Korea            | 23.96 (5.53)**  | .74 (37)*  | .92 (24)** | -4.11 (1.2)** | 2.39 (1.9)** | 0.46 (20)*  | .14 (0.01)** | 1.52 (4.4)** |
| Lithuania        | 38.92 (6.00)**  | -0.20 (40) | 1.03 (35)** | -2.63 (11.3)** | 2.71 (2.5)** | .13 (26)   | .14 (0.02)** | 2.52 (6.2)** |
| Luxembourg       | 45.51 (4.19)**  | -0.96 (28)** | -0.42 (33) | -1.56 (39)** | 2.47 (2.5)** | 1.09 (2.7)** | .15 (0.02)** | 5.80 (7.0)** |
| Latvia           | 42.04 (6.86)**  | -0.48 (45) | .41 (43) | -3.97 (88)** | 2.33 (3.3)** | .42 (30)   | .15 (0.02)** | 2.85 (7.3)** |
| Mexico           | 42.59 (3.55)**  | -0.14 (24) | .56 (27)*  | -2.79 (1.03)** | 1.85 (2.1)** | -.14 (21)  | .15 (0.02)** | 2.66 (4.9)** |
| Malta            | 31.65 (7.92)*** | .14 (57)   | .85 (45) | -1.93 (1.59) | 2.50 (3.1)** | 0.37 (32)  | .19 (0.03)** | 0.57 (8.0)** |
| Norway           | 17.64 (10.1)    | .89 (74)   | 1.67 (42)** | -2.67 (79)** | 2.27 (3.1)** | .99 (33)**  | .21 (0.03)** | 6.23 (7.6)** |
| New Zealand      | 41.69 (7.71)*** | -0.90 (54) | 1.11 (38)** | .16 (44)    | 2.73 (2.9)** | .71 (28)*   | .21 (0.02)** | 4.46 (7.1)** |
| Poland           | 22.81 (7.34)**  | -.12 (48)  | .64 (36) | -.89 (63)    | 2.54 (2.7)** | .34 (26)   | .27 (0.02)** | 3.03 (6.9)** |
| Slovak Republic  | 43.53 (7.04)**  | -1.02 (47)* | .09 (40) | .87 (20)    | 2.26 (2.9)** | 1.02 (28)** | .20 (0.02)** | 2.43 (7.7)** |
| Slovenia         | 31.87 (8.70)**  | .11 (63)   | .47 (41) | -.94 (70)   | 2.12 (2.8)** | 1.01 (33)** | .16 (0.02)** | 4.19 (7.1)** |
| Spain            | 50.65 (4.54)**  | -1.18 (30)** | .15 (36) | -0.28 (23)** | 3.08 (2.8)** | .27 (29)   | .17 (0.02)** | 2.67 (6.4)** |
| Switzerland      | 58.01 (5.39)**  | -1.74 (35)** | -0.12 (46) | -2.67 (39)** | 2.59 (3.6)** | .63 (33)   | .12 (0.03)** | 6.40 (9.1)** |
| Sweden           | 35.69 (7.74)**  | -0.27 (52) | 1.24 (35)** | -1.62 (58)** | 1.96 (2.5)** | 2.11 (29)** | .16 (0.02)** | 3.68 (6.4)** |
| Thailand         | 47.67 (4.34)**  | -0.38 (30) | 1.13 (28)** | -1.34 (49)  | 2.41 (2.5)** | .07 (21)   | .08 (0.02)** | 2.33 (4.8)** |
| Taiwan           | 24.49 (6.23)**  | .55 (43)   | .09 (27) | -.16 (206)  | 2.07 (2.1)** | .35 (20)   | .22 (0.02)** | 3.32 (4.9)** |

Note: Authors’ estimate using the ICCS 2009 data set. Values in parentheses are standard error.

***p < .001; **p < .01; *p < .05.
### Appendix 4. Direct effects of control variables, parental education, home-based political socialization, and educational expectations

| Country             | Intercept | Age | Gender | Immigrant | Peer group influence | Civic participation at school | Media influence | Parental education | Home-based political socialization | Educational expectations |
|---------------------|-----------|-----|--------|-----------|----------------------|-------------------------------|----------------|-------------------|-------------------------------|-------------------------------|
| Austria             | 36.20     | .18 | −.75   | −.45      | 1.18                 | .31                           | .08            | 3.99              | 3.71                          |                               |
| Belgium             | 37.37     | .62 | −.66   | −.10      | 1.69                 | −.35                          | .12            | 4.20              | 1.92                          |                               |
| Bulgaria            | 29.36     | .08 | −.35   | −.72      | 1.46                 | −.53                          | .11            | 4.30              | 3.24                          |                               |
| Chile               | 36.49     | .62 | −.83   | −.26      | 1.49                 | .26                           | .19            | 3.41              | 2.78                          |                               |
| Colombia            | 43.70     | −.25 | −1.05  | −.33      | .94                  | .03                           | .14            | 2.13              | .41                          |                               |
| Cyprus              | 31.47     | −.24 | −.45   | −1.17     | 1.62                 | −.89                          | .18            | 4.05              | 2.08                          |                               |
| Czech Republic      | 33.74     | −.92 | 1.22   | −.34      | 1.43                 | −.89                          | .15            | 6.24              | 6.45                          |                               |
| Denmark             | 31.55     | −.30 | 1.28   | −.99      | 1.17                 | .23                           | .15            | 4.26              | 5.07                          |                               |
| England             | 25.88     | .01 | −.99   | .04       | .83                  | −.78                          | .17            | 5.67              | 5.54                          |                               |
| Estonia             | 45.98     | −1.07 | .20    | −1.16     | 1.37                 | −.35                          | .11            | 3.32              | 4.01                          |                               |
| Finland             | 37.24     | −.54 | 1.11   | −.24      | 1.01                 | −.29                          | .12            | 5.29              | 3.63                          |                               |
| Greece              | 54.71     | −1.62 | .65    | −.24      | 1.27                 | −.34                          | .11            | 3.88              | 5.37                          |                               |
| Ireland             | 38.16     | −.25 | .67    | −.31      | .71                  | −.73                          | .11            | 4.26              | 6.37                          |                               |
| Italy               | 49.73     | −.72 | −.07   | −.43      | .92                  | −.40                          | .07            | 2.95              | 6.61                          |                               |
| Korea               | 22.50     | .66 | .65    | −2.39     | 1.41                 | −0.12                         | .12            | 2.65              | 5.00                          |                               |
| Lithuania           | 35.63     | −.09 | .58    | −.24      | 1.87                 | −.75                          | .10            | 3.41              | 4.53                          |                               |
| Luxembourg          | 34.12     | −.34 | −.99   | −1.73     | 1.35                 | −.20                          | .11            | 4.39              | 4.98                          |                               |
| Latvia              | 36.65     | −.23 | .13    | −.38      | 1.65                 | −15                           | .13            | 2.65              | 2.36                          |                               |
| Mexico              | 38.21     | .05 | .12    | −.27      | 1.26                 | −.84                          | .12            | 2.80              | 4.17                          |                               |
| Malta               | 25.71     | .33 | .22    | −.50      | .58                  | −.67                          | .16            | 2.46              | 3.85                          |                               |
| Norway              | 16.39     | .80 | .72    | −.08      | 1.05                 | −.76                          | .17            | 4.78              | 7.46                          |                               |
| New Zealand         | 41.07     | .10 | .31    | −.28      | 1.57                 | −.32                          | .16            | 3.84              | 7.12                          |                               |
| Poland              | 18.21     | .31 | .43    | −.17      | 1.39                 | −.54                          | .23            | 3.95              | 4.10                          |                               |
| Slovak Republic     | 32.55     | −.40 | .61    | −.66      | 1.44                 | −.48                          | .15            | 4.76              | 6.67                          |                               |
| Slovenia            | 32.19     | −.01 | .60    | −.71      | 1.18                 | −.42                          | .09            | 4.76              | 5.53                          |                               |
| Spain               | 38.10     | .43 | .25    | −.60      | 2.20                 | −.64                          | .14            | 3.21              | 4.79                          |                               |
| Switzerland         | 50.87     | −1.48 | −.68  | −.33      | 1.35                 | −.86                          | .07            | 5.06              | 6.37                          |                               |
| Sweden              | 34.80     | .29 | .83    | −2.86     | 1.15                 | .41                           | .12            | 4.25              | 3.62                          |                               |
| Thailand            | 44.85     | −.32 | .37    | −1.00     | 1.82                 | −.34                          | .07            | 1.45              | 5.29                          |                               |
| Taiwan              | 24.99     | .40 | .22    | −1.23     | 1.22                 | −.49                          | .17            | 3.47              | 5.69                          |                               |

Note: Authors’ estimate using the ICCS 2009 data set. Values in parentheses are standard error.

***p < .001; **p < .01; *p < .05.