Long-Term Orientation and Educational Performance[1]

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Abstract

We use population-level matched administrative data from Florida education and birth records to study the role of Long-Term Orientation on the educational attainment of immigrant students living in the US. Controlling for the quality of schools and individual characteristics, we find that students from countries with long-term oriented attitudes perform better than students from cultures with less emphasis on the importance of delayed gratification. These students perform better in third grade reading and math tests, have larger test score gains over time, have fewer absences and disciplinary incidents, are less likely to repeat grades, and are more likely to graduate from high school in four years. In addition, they are more likely to enroll in advanced high school courses, especially in scientific subjects. Parents from long-term oriented cultures are more likely to secure better educational opportunities for their children. Long-term oriented students perform better when there is a large fraction of immigrants speaking the same language in their school. We validate these results using a sample of immigrant students living in 37 different destination countries.

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Introduction

Several papers find a remarkable correlation between individual educational achievement and family socioeconomic background in the US and around the world (see, e.g., Black, Devereux, and Salvanes, 2005; Chevalier, Denny, and McMahon, 2009; Fryer and Levitt, 2004; Hanushek and Woessmann, 2010; Hertz et al, 2007; Reardon and Galindo, 2009; and Rothstein and Wozny, 2013). To understand the strong persistence in educational achievement across generations, economists have examined the causal effect on education of some specific components of parental socioeconomic background: parental education, income, and wealth.[2] This research has found at most moderately-sized (and often zero) causal effects, suggesting that much of the correlation between parents' and children's educational outcomes must be due to other shared family characteristics, including access to high quality schools (Rouse and Barrow, 2006), or inherited abilities and traits (Krapohl et al., 2014).

Parents transmit to their children not only human capital, income, wealth, and genetic traits but also a specific set of cultural values (Bisin and Verdier, 2001). This paper follows the literature on cultural transmission and explores the importance of a distinct cultural trait transmitted from parents to children as an alternative and complementary determinant of educational achievement: the ability to defer gratification and exert self-control.[3] Older research in psychology indeed suggests that this trait fosters educational attainment and cognitive competence (Mischel and Ebbese, 1970; Mischel et al., 1988; Mischel et al., 1989; Shoda et al., 1990).[4] More recently, Duckworth et al. (2007) have also shown that the tendency to stick with long-term goals and self-control is relevant to complete the demanding training among West Point entrants. Sutter et al. (2013) elicit time preferences of children and adolescents and show that more impatient children and adolescents are more likely to spend money on alcohol and cigarettes, have a higher BMI, are less likely to save money, and commit more

[2] For example, Black, Devereux, and Salvanes (2005) study the effect of an exogenous mandatory change in parental education on their children educational outcomes and cognitive abilities. Similarly, Dahl and Lochner (2012) study the effect of exogenous changes in parental income while Bleakley and Ferrie (2016) investigate the effect of an exogenous change in wealth.

[3] There exists a long sociological literature documenting cross-cultural differences in academic achievement. Important recent examples include Hsin and Xie (2014), who argue that the Asian-American advantage over white students in the United States has more to do with effort differences than with differences in cognitive skills or socio-economic status, and Liu and Xie (2016), who show that there is a stronger relationship between socio-economic status and academic achievement for white students than for Asian-Americans, and that Asian-Americans' beliefs and values are less related to family socio-economic status than are those of whites. Olneck (2009) provides historical and contemporary perspectives on the values that immigrant groups seek from American schools. These strands of research provide important foregrounding for the present paper.

[4] In the famous "marshmallow test", children that were able to resist eating a marshmallow, with the promise of getting an extra one if they waited, had higher SAT scores and earnings, when followed many years later.

violations of the school's code of conduct. Self-control also predicts student grades more strongly than IQ.[5]

In a recent paper, Galor and Ozak (2016) show that geographic differences in preferences for delayed gratification are extremely stable over time, tracing their origin to geographical conditions that affected the return to agricultural investment. Furthermore, Galor and Ozak (2016) show that, across geographical areas, preferences for delayed gratification correlate with technology adoption, savings, and educational achievement. Given that time preferences and delayed gratification correlate with educational attainment at the macro level, in this paper we study whether the transmission of these preferences across generations can explain individual educational attainment and possibly account for at least part of the intergenerational correlation between socioeconomic background and educational achievement observed in the literature.

To investigate this hypothesis, we face several challenges. First, if parents share a culture of high educational attainment, they are likely to be highly educated and, thus, more likely to have high income and live in areas with better schools, therefore hindering our ability to distinguish between a transmission of cultural values and a direct effect of parental education or income. Second, cultural determinants of educational attainment are often indistinguishable from other institutional and economic factors using cross-country aggregate data. For example, a culture that values delayed gratification could foster high quality of schools and other educational institutions. If that is the case, we would not be able to distinguish whether the effect of higher education attainment is due to better institutions or to children's attitudes of delayed gratification.

To address these concerns, we focus on immigrants in the US and in other countries. We attribute to each immigrant student the average willingness to forego immediate utility for future gratification of his/her country of origin, using Hofstede's (2010) measure of Long-Term Orientation (LTO) and other proxies for delayed gratification. Following Carroll et al. (1994), Giuliano (2007), and Fernandez and Fogli (2009), our identification strategy relies on the opportunity to observe immigrant children from different cultures in the same location, thus distinguishing between cultural factors from other institutional and economic factors.

[5] Using evidence from the National Longitudinal Survey of Youth 1979 (NLSY79), Cadena and Keys (2015) find that children identified as impatient or restless during their interview are 55 percent more likely to drop out of high school and earn 13 percent less by middle age, when compared to those that did not appear impatient or restless to the interviewer. Future-oriented individuals are also healthier, richer, less likely to be single parents and less likely to be convicted of a crime as adults (Moffitt et al., 2011).

Our empirical strategy constitutes an improvement with respect to the traditional strategy on several dimensions. For one, whereas other papers on cultural transmission observe immigrants when they are already young adults, ours is the first paper that studies cultural transmission by focusing on children's outcomes. This allows us to shed some light on the mechanisms of cultural transmission and the role of parenting in enforcing it.

Second, the unique microdata that we employ in this paper allows us to control for geography at a much finer level than was possible in related studies of adults. Specifically, we control for school-level fixed effects (which essentially control for residential neighborhoods in our Florida setting), thereby capturing any unmeasured residential sorting – much smaller in geographic scope than, say, counties or US metropolitan areas. For example, schools have, on average, 30 percent lower household income variation than counties in Florida.[6] Even Census Public-Use Microdata Areas, which on average include nearly twenty school zones, have 11 percent lower household income variation than metropolitan areas do, according to our calculations from the public-use 2000 US Census.[7] Capturing geography at as fine a level as possible is essential to help to reduce the likelihood that we are conflating LTO with other unmeasured family variables, such as income or wealth, that are geographically linked in the US. In addition, since people are not randomly assigned to neighborhoods and schools, and high-LTO families might choose more advantaged neighborhoods and schools (as we demonstrate), all else equal, our ability to compare students within the same school means that we are more likely to be generating conservative estimates of the relationship between LTO and educational outcomes.

Third, our matched birth and school records allow us to separately study the relationship between LTO and educational outcomes for first-generation and second-generation immigrants. Furthermore, in addition to attributing to each immigrant the LTO from the country of origin, we also study whether educational performance varies systematically with cultural differences, as proxied by the grammatical structure of language. People who speak languages for which the grammar does not require an explicit coding of the future (see Chen, 2013) are more long-term oriented. Linking educational performance to individual linguistic use allows us to isolate the cultural aspect of LTO embodied in the linguistic structure, because all the other differences at the country level (economic, cultural and institutional) can be further controlled for by the use of country of origin fixed effects.

We study immigrants' educational outcomes in a unique population-level dataset that contain individual-level administrative data from the Florida Department of Education (FLDOE) Warehouse

[6] We calculated this figure using student-level microdata from Florida Department of Education records.
[7] Note that metropolitan areas have larger income variation than counties.

on elementary and secondary (Kindergarten to grade 12, or grade K-12) students, matched to birth certificate data from the Florida Bureau of Vital Statistics for the purposes of this research agenda. Florida is one of the largest immigrant-receiving states in the United States[8] and the FLDOE data allows us to observe the entire population of public school students, and to control for school fixed effects and several socioeconomic characteristics. The link to birth records allows us to identify second-generation students and also to control (in the case of Florida-born children) for variables not typically observed in administrative education data, such as maternal age, marital status, and education, birth order, and the like. And, as mentioned above, the richness of the dataset also allows us to follow students at a very fine level of disaggregation (the school of attendance) therefore improving on the existing literature, which at most compares outcomes of migrants in similar MSAs where heterogeneity is larger. The longitudinal nature of the dataset (we are able to follow students over time during their primary education years, measuring not only their educational achievement at one point in time, but also the change over time) is a further improvement compared to other studies of culture, which only present cross-sectional analysis. Longitudinal data permit the opportunity to explore both levels and trajectories of outcomes. This represents an advance because it helps us to further rule out omitted variable bias in our estimates of the relationship between LTO and student outcomes. Omitted variables potentially associated both with LTO and higher initial test scores (such as income, wealth, and other SES factors) are unlikely to be also associated with higher test score growth over a child's school career, because typically in the education literature we observe that initial test score position is either unrelated to, or negatively related to, test score growth as children age through schooling.[9] We find that LTO is associated with both higher initial test scores and higher test score growth over time, which provides further evidence that our estimated relationship between LTO and student outcomes is genuine.

To study the importance of delayed gratification, we link each student within subgroups of interest (based either on country of origin or language spoken at home) to a measure of LTO developed by Hofstede et al. (2010). Hofstede et al. (2010) define LTO as the cultural value that

[8] Florida has over four million foreign-born individuals, more than all but 15 entire countries on earth. Florida's foreign-born population is also diverse: While the foreign-born population is disproportionately Hispanic (include 23% Cuban and 7% Mexican), it is also 21% from non-Hispanic Caribbean countries, 11% from Asian countries, 10% from European countries, and 2% from African countries. The heterogeneity in countries of origin of foreign-born residents of Florida is dramatically greater than in Texas and California, where the majority of foreign-born residents come from a single country, Mexico.

[9] Indeed, in the Florida data, initial test scores are negatively correlated with test score growth over a child's schooling career.

"stands for the fostering of virtues oriented toward future rewards." Controlling for school and year fixed effects, as well as individual characteristics and measures of family income, we correlate the performance of first and second-generation immigrant students with the LTO of their countries of origin.[10] The results show that immigrants from countries with high LTO score substantially higher in standardized tests than immigrants originating from countries with lower LTO. Furthermore, over time, the scores of immigrant students from high LTO cultures grow more, controlling for their initial third grade score, suggesting that, in comparison with low LTO students, these immigrants not only have higher educational achievement in third grade but also continue to improve in relative terms over time. This result is noteworthy because the education literature shows that it is unusual for students to make large improvements in their relative performance in test scores between third and eighth grade. Our evidence shows that immigrant students instead improve over time and do so more the higher their measure of LTO. Similarly, we find that immigrants from long-term oriented countries have better school attendance records, are less likely to repeat a grade and to be truant, and are more likely to graduate from high school in four years. Students from more long-term oriented countries are also more likely to enroll in advanced college level classes (AP, IB, and AICE classes) during high school and more likely to choose advanced classes in scientific subjects. Since we control for school-by-year fixed effects in all our specifications, our results are not driven by school quality, a potential source of selection for immigrants coming from long-term oriented cultures. They are also robust to including several potential confounding characteristics of the country of origin, including, for instance, differential educational selection of immigrants, economic conditions of the country of origin, and international test scores of the country of origin, as well as several maternal characteristics. In addition, specific groups of immigrants do not drive our results; importantly, we can rule out the possibility that our results are merely comparisons of immigrants from one part of the world (e.g., Asia) versus those from another part of the world (e.g., Latin America). The findings are also confirmed when we use two alternative measures of time preferences. Finally, we rule out that other cultural traits, such as trust and the importance of hard work, as well as other Hofstede's cultural measures are confounding factors in our statistical analysis.

The theoretical literature on intergenerational transmission of preferences and beliefs (Bisin and Verdier, 2000, 2001; Doepke and Zilibotti, 2008, 2017; Guiso et al., 2008) suggests that economic

[10] Some of our control variables (e.g., measures of family income) are arguably endogenous to family LTO. We present results both including and excluding these potentially endogenous control variables to obtain potential bounds of the relationships between LTO and educational outcomes.

conditions, altruistic motives, and social norms induce parents into teaching specific preferences and beliefs to their children. Our results are consistent with a view of parental transmission of time preferences and suggest that, especially in the context of Galor and Ozak (2016), parents from certain regions are more likely to teach values of patience and LTO. Two potentially complementary mechanisms may link LTO and educational attainment. On the one hand, more long-term oriented parents may teach their offspring a culture that value working harder and studying harder to achieve long-term goals. On the other hand, these parents may also lead by example exerting higher effort in securing good education opportunities for their children by prioritizing their kids' education over other personal goals. In turn, children may better absorb the values shared by their parents when they observe them prioritizing education.

To gain further insights regarding these transmission mechanisms, we study some of these potential mechanisms. While we cannot directly measure the transmission of values from parents to children, nor measure students' effort, we can test whether parents originating from countries that share values of delayed gratification take actions that increase the educational attainment of their children. We study whether these parents are more likely to select better schools within the school district of residence and whether they are more likely to advocate for their children's inclusion in gifted programs, conditional on the student's achievement. We find evidence consistent with the hypothesis that parents from countries with higher LTO are more likely to select good educational opportunities for their children. This mechanism can further increase educational outcomes and magnify the cultural transmission of delayed gratification. As an additional channel of cultural transmission, we study whether social learning (Boyd et al., 2011) reinforces the importance of the cultural values transmitted at home. Consistent with a social learning hypothesis, we find that long term oriented students perform better in the schools where there is a large fraction of children speaking their same language.

While our data are unique as they allow us to follow immigrant students over time, we face the potential criticism that an analysis entirely based on Florida data may have limited external validity. For this reason, we repeat our analysis using a large set of countries from the Programme of International Student Assessment (PISA) absorbing the country of destination fixed effect. We find a remarkable qualitative and quantitative similarity with this very different sample of immigrants suggesting that, independently of the formal institutions of the country of destination, the relative performance of immigrants relates to the LTO of the country of origin, thereby indicating that our results have a reasonably high degree of external validity.

Our results suggest the existence of a cultural channel that explains the persistence of educational outcomes across generations, beyond income and educational transmission. Besides being related to a fast-growing literature on cultural transmission (Alesina et al., 2013; Alesina and Giuliano, 2015; Algan and Cahuc, 2010; Becker et al., 2016: Galor and Moav, 2002; Galor and Michalopoulos, 2012; Guiso et al., 2006; Nunn and Wantchekon, 2011; Sacerdote, 2005; Tabellini, 2008; Voigtlander and Voth, 2012), our paper relates to the intergenerational mobility literature and to the research on immigrants' assimilation. Chetty and Hendren (2015) find that local conditions matter less for immigrants consistently with the conjecture that culture, rather than neighborhood's characteristics, can play an important role for immigrants. The literature on immigrants has systematically identified an "advantage" of some immigrant groups but, as far as we know, no paper has identified which cultural factors may be responsible for these findings (Card et al., 2000; Abramitzky, Boustan, and Eriksson, 2014).

The remainder of the paper is organized as follows. The next section describes the main dataset. Section 2 presents the empirical evidence from the FLDOE data. Section 3 discusses at length the issue of migrants' selection. Sections 4 and 5 use alternative measures of LTO and test the robustness of the results to a large set of other cultural variables. Section 6 explores potential mechanisms behind the relationship between LTO and educational performance. Section 7 describes how immigrants perform compared to natives. Finally, the results using PISA are presented in Section 8. We conclude in Section 9.

1. Data and outcome of interests

The main data sources for our analysis are school records obtained from the Florida Department of Education Data Warehouse, and the measure of LTO at the country level based on Hofstede (2010). For external validity, we rely on student level data coming from the Program for International Student Assessment (PISA), described in Section 8.

1.1. Florida Department of Education Data

We use a unique dataset of school records for the state of Florida merged with birth certificates coming from the Florida Bureau of Vital Statistics.

The individual-level administrative data from the Florida Department of Education (FLDOE) Warehouse contain information on K-12 students who attended Florida public schools between 2002-2003 and 2011-2012. The dataset also contains information about the country of origin of the child and the language spoken at home. The dataset is longitudinal in nature, therefore it allows us to follow

students over a decade and study their progress within subgroups of interest (either country of origin or language spoken at home).

Birth certificates contain a larger set of socio-economic controls (such as maternal education, marital status and age of the mother), normally not included in school records. They also contain information on whether the mother was born abroad. Birth certificates and school records were matched using first and last names, date of birth and social security numbers.[11] Since data from birth certificates are available only for children born between 1992 and 2002, we limit our analysis to these cohorts for all immigrant groups (including the first generation for which the birth certificates are not present). The FLDOE dataset merged with birth certificates allows us to study educational outcomes for first, second and higher than second-generation immigrants. To identify the different generations, we use information about the country of origin of the student, information on whether the mother was born abroad,[12] and the language spoken at home.

We identify first generation immigrants using a question present in the FLDOE on the country of birth of the child. We also use a more restricted definition of first generation immigrants, which combines the information regarding the country of birth and the language spoken at home. Using the restricted version, we define as first generation a child born in country A, who also speaks at home one of the main languages spoken in that specific country.[13] This restriction can reduce some measurement error in those cases in which a child is born abroad but he/she is the child of US citizens (for example children born in a US military base); alternatively, it could help us also to capture a stronger cultural attachment to the country of origin through the intention of the family to preserve their cultural identity by speaking their language at home.

We identify two groups of second-generation immigrants. As a first group, we define a maternal second-generation immigrant as a child who was born in the US but whose mother was born abroad. Birth certificates do not contain information about the maternal foreign country of birth (with the exception of the following countries/territories: Canada, Cuba, Guam, Mexico, Puerto Rico, and Virgin Islands); they only indicate whether the mother was born abroad or not. For that reason, we

[11] The sample of birth records consists of 2,047,633 observations. Of these, 1,652,333 were present in Florida public school data. The match rate of 81% is consistent with the percentage of children who are born in Florida, reside there until school age, and attend public school, as calculated from the Census and the American Community survey for the corresponding years. See Figlio et al. (2014) for details about the nature and additional evidence on the quality of the birth-school data merge.

[12] The birth record data provided by the Florida Bureau of Vital Statistics does not include information on father's place of birth.

[13] The list of the main languages spoken in a country is from the 17th version of the *Ethnologue*.

identify as second-generation students those students with a foreign-born mother using the three countries identified in the birth certificate for which we have the LTO data (Canada, Mexico, and Puerto Rico) and the language spoken at home for all the remaining cases.[14] We also use an alternative definition of second-generation students by adding all children born in the US, speaking a language different from English at home, and whose maternal place of birth is either the US or unknown. This group potentially includes a generation higher than the second, but also second-generation immigrants from the paternal side[15] (children with fathers born abroad and mothers born in the United States). We called this group "extended second-generation."

The total sample of student records (immigrants and non-immigrants) consists of 18,734,847 student-year observations. The initial sample of unique individual students for the 1992-2002 cohorts observed during the period between the 2002-2012 school years consists of 3,018,961 students. The sample of first generation immigrants consists of 354,954 unique individual students. The sample of second-generation immigrants (the restricted version) consists of 396,330 unique students identified based on the foreign-born status of the mother. For our extended definition of second-generation students we include additional 269,487 unique students, identified using the language spoken at home. The sample of natives, used only for descriptive comparisons in some figures (individuals born in the US, whose mothers were born in the US and who speak English at home), consists of 1,959,058 unique students.[16] We drop from the sample 39,132 unique unclassifiable students for whom the language and the country of origin of the child are missing and/or were born in Florida but the mother's birthplace is labeled as "missing" in the birth records.

For the first generation, we merge the country of origin with the LTO variable defined at the country level. We have information on LTO for 93 different countries. (The list of countries and the number of observations by country is provided in the Appendix, Table A1, for both the unrestricted and restricted definition).[17]

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[14] Therefore, for second-generation students, we have difficulty differentiating among the approximately 15% of second-generation immigrants who are Spanish-speaking but whose mothers were not born in one of the specified locations. We carry out all analyses both with and without Spanish speakers and demonstrate that this is not driving our findings in any meaningful way.

[15] We cannot identify this group from birth certificates as we have only information regarding maternal country of birth.

[16] We also consider as natives, children speaking English at home, born in the US but outside Florida and for whom the place of birth of the mother is unknown (if a child is born outside Florida, the birth certificate is not available).

[17] Note that for confidentiality reasons with the FLDOE, we cannot report the number of observations for groups whose size is smaller than 30. We refer in the appendix to the sum of all of them as Non-disclosed countries.

For the groups of immigrants identified through language (second-generation) we construct a measure of LTO at the language level. For most languages, there is a one to one association between language and country of origin (for example Norwegian). For languages spoken in multiple countries (for example Portuguese) we calculate the LTO cultural variable as a weighted average of the LTO of all the countries in which Portuguese is the main language spoken in the country. We use as weights the fraction of first generation immigrants in our sample speaking that language and born in a country where that language is one of the spoken languages. For instance, in the case of Portuguese, we allocate 98% of the weight to Brazil and 2% of the weight to Portugal, in accordance with their shares of language-speakers in the Florida school data.[18]

The number of observations by language for the second-generation from the maternal side and for extended definition of children of immigrants are presented in Table A2 of the online Appendix. We have information on 88 different languages.[19]

1.1.1 Outcomes of interest

We study the following five different outcomes, separately for our first generation, second-generation and extended second-generation samples:

i) *Test scores in mathematics and reading*. We look both at differences in the Florida Comprehensive Assessment Test (FCAT), the state's high-stakes criterion-referenced test, in grade 3 (the first grade of statewide testing) as well as the increase in performance from grade 3 to grade 8, after controlling for the initial score reported in grade 3. Studying test score growth is especially important because test score levels might reflect some omitted variable correlated with LTO, but it is highly unusual for students to make large improvements in their relative performance between third and eighth grade in the statewide tests. Because the test changed in 2011 and to aid in interpretation, we standardize the statewide test scores to zero mean and unit variance at the grade/year level based on the sub-sample used in each regression/specification.[20]

[18] As a robustness check, we also run our regressions limiting the sample to countries that can be identified uniquely with a language. Our results (available from the authors) are robust to this specification.

[19] For an analysis of how immigrant students attending public schools compare to student immigrants in Florida, see the on-line Appendix, section A.2.3.

[20] We also estimated models in which we standardize test scores at the grade/year level for the entire immigrant population. The results when using this alternative standardization are highly similar to those reported in the paper.

ii) *Probability of being retained*, calculated for each student/grade and defined as a dummy equal to one if the student repeats the same grade. Retention is calculated for all grades from 3 to 12.[21]

iii) *Absence rates* during academic year defined as the percentage of days in which the student is absent during the academic year. Absence rates are calculated for all grades from 3 to 12.

iv) *Disciplinary incidents:* a dummy for whether the student was involved in a disciplinary incident (serious offences often resulting in suspension). Disciplinary incidents are calculated from grades 6 to 12, as incidents are extremely rare in elementary school.

v) *High school graduation:* a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time. This part of the analysis is conducted only for those students who have the potential to be observed for at least four years after they start high school, so we can only study this outcome for the oldest students in our population.

In addition, in the section devoted to understand the potential mechanisms linking LTO and educational attainment, we study four additional outcomes:

vi) *Enrollment in advanced classes:* we calculate the fraction of advanced classes, including Advanced Placement (AP), International Baccalaureate (IB), and Advanced International Certificate of Education (AICE), over the total of all classes taken by the student in a given year, for grades 9 to 12.[22]

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[21] In Florida there is a mandated third-grade retention for all students who do not meet a Level 2 benchmark or higher (the second lowest of five levels) on the Florida Comprehensive Assessment Test (FCAT) reading exam, though some exceptions to this rule are admitted (LiCalsi, Özek, and Figlio, forthcoming). LiCalsi, Özek, and Figlio (forthcoming) find that family factors are important determinants of differential enforcement of the mandatory retention rule, and that children from high-SES families are comparatively more likely to be promoted despite the mandatory retention rule, indicating some room for parental influence in school decision-making, even in cases when decisions are putatively mandatory. Retention in subsequent grades is not based on a strict score cutoff. As such, retention in third grade is substantially higher than in other grades. In our tables, we will study the retention in every grade. In unreported regressions, we tested retention only in grade 3 and the effects are similar in magnitude.

[22] These three possible types of advanced classes are offered in Florida public schools and are recognized as college level classes at least by state Universities. Every school varies in its policies for including students in these advanced classes, but in general higher-performing students are more likely to take advanced classes. Nonetheless, many students who are not top-performers take college-level advanced classes. About 20 percent of students scoring between the 50th and 60th percentiles of the tenth grade mathematics distribution take AP math or science courses, for instance.

vii) *Fraction of advanced classes in scientific subjects:* we calculate the fraction of advanced classes in scientific subjects (defined as Math, Computer Science or Natural Sciences) over the total of advanced classes.

viii) *School choice*: the Florida Department of Education reports school scores on a letter scale from A (best) through F (worst).[23] We study school choice by looking at the relationship between LTO and the score assigned to the school in the year before entering kindergarten (as this is the first time in which the student enters the public school system). We also look at the relationship between LTO and school scores for all grades, as families with higher LTO might use the school choice mechanisms at their disposal to select higher-rated public schools.[24]

ix) *Gifted students:* Florida defines gifted students as "students who have superior intellectual development and are capable of high performance." Each district serves gifted students with local plans and a specific track. Eligibility for the program is determined by the parents, the student when appropriate, the teacher, a school system representative, or an evaluation specialist. Family intervention is therefore very relevant to determine the enrollment in a gifted program. To study family intervention, we restrict our sample to children who are top performers[25] in grade 3, the first time a student takes a high-stakes examination in Florida, but not yet enrolled in a gifted program as of that time, and test whether the probability of being enrolled in a gifted program in grade 4 is correlated with LTO.[26] Table 1 describes sample statistics for all outcomes and more details about each variable are contained in the Online Appendix.

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[23] For a description of the school grading process in Florida, see http://schoolgrades.fldoe.org/. We recoded the letter scores on a scale from 1 through 5, where 1 corresponds to an "F" score and 5 corresponds to an "A" score. These scores are highly salient to households when making decisions regarding residential location (Figlio and Lucas, 2004) or voluntary donations to public schools (Figlio and Kenny, 2009).

[24] Florida has county-level school districts, and students are assigned to schools based on their residential location. School districts also provide opportunities for children to attend schools out of their assigned school zones, subject to space availability and with families providing transportation to the new school. What we are referring to as "school choice" in this paper is a combination of family residential location decisions (which, essentially, choose schools in Florida) as well as use of controlled choice mechanisms offered by the school. Because we cannot observe residential location in the statewide administrative data, we cannot know whether this choice is largely due to residential sorting or to differential use of controlled choice mechanisms.

[25] These students reach the highest achievement level (that is, level 5) in either Math or Reading, and either level 4 or 5 in the other subject. Fewer than ten percent of students statewide achieve this distinction.

[26] In Florida, gifted assignment requires both school and family action. The administrative record does not show whether gifted proceedings were initiated by the school or by the family, or whether a family advocated for gifted educational services for its children but were denied; that said, we feel comfortable in assuming that

1.1.2 Individual controls

All our regressions contain a large set of controls, including demographics (age in months and gender), a measure of English proficiency (measured by a dummy equal to one if the student is enrolled in the limited English proficiency program), a measure of low-income status (measured by a dummy equal to one if the student is eligible to receive free or reduced free lunch or attend a "provision 2" school)[27] and a measure for whether the student has some special education needs.[28] Because special education, family income, and limited English proficiency are all potential consequences of parental LTO, we investigate the degree to which our results are driven by the decision of whether or not to control for these variables, and we find that our results are highly robust to their inclusion or exclusion. In our main specifications, we control for these variables, as well as school-by-year fixed effects (themselves a partial control for family background possibly driven by LTO), in order to obtain a more conservative estimate of the association between LTO and educational outcomes, but we show that our fundamental conclusions are not driven by the inclusion or exclusion of these control variables.

For second-generation immigrants (including the extended version) born in Florida we also have information on maternal characteristics (educational attainment, marital status at time of birth and whether the mother had the child when she was younger than 16), the number of older siblings and the zip code of the home address at time of birth. Sample statistics for these controls are shown in Table 1 and more details about each variable are contained in the Online Appendix.

1.2 Long-Term Orientation Data

We obtained our measure of LTO from Hofstede. Hofstede et al. (2010) define Long-Term Orientation as the cultural value that "stands for the fostering of virtues oriented toward future rewards, perseverance and thrift." Hofstede (1991) based his original analysis on data gathered from interviews of IBM employees across the world. These original data were later expanded using the data from the Chinese Values Survey and from the World Values Survey for the period 1995-2004.[29] From

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a child receiving gifted services following very high initial test performance is an indicator of strong family action and advocacy on behalf of the child's education.

[27] To qualify for free or reduced lunch, the family income has to be respectively below 185% and 130% of the federal income poverty. Provision 2 schools establish claiming percentages and serve all meals at no charge for a 4-year period. For details, see http://www.fns.usda.gov/school-meals/provisions-1-2-and-3.

[28] Categories for special education include mentally handicapped, orthopedically, speech, language, or visually impaired, deaf or hard of hearing. It also includes students with emotional or behavioral disabilities, with autistic spectrum disorder and other forms of serious disabilities (such as students with traumatic brain injuries).

[29] For details, see http://www.geerthofstede.nl/

these surveys, Hofstede et al. (2010) created a measure of LTO using a factor analysis model that loads on three questions contained in the WVS.[30] The LTO variable ranges from 0 to 100. In our data, it was rescaled between 0 (short-term orientation) and 1 (long-term orientation). Figure 1 shows the distribution of LTO around the world. In our sample, there is substantial heterogeneity: the country with lowest LTO is Puerto Rico (taking the value of 0), whereas the country with the highest score is South Korea (taking the value of 1). Most Asian and many European countries show high numbers, most African and Latin American countries belong to the lowest part of the distribution, and Canada and Northern European Countries tend to lie somewhere in between. However, even within geographical regions, there exists considerable variation in the LTO measure, and we carry out sensitivity checks in which we exclude portions of the world in order to ensure that we are not simply picking up effects of regional differences across parts of the world.

In Section 4, we also discuss the robustness of our results to different measures of LTO.

2. Evidence from Florida data

Before starting our empirical analysis, we first examine whether there exist systematic differences between each educational outcome and LTO as measured in the country of origin or by language spoken at home in our sample of first and second-generation immigrants in Florida.

These raw correlations are reported in Figures 2 and 3.[31] For all the outcomes, we find that the relationship is in the hypothesized direction. Students from cultures that emphasize the importance of LTO have higher test scores, and show an improvement in educational performance over time and higher probability of graduating on time; immigrants and children of immigrants from long-term

[30] The variables included are: (1) Thrift as a desirable trait for children: percentage of people in a country choosing "thrift" as one of the answers to the question: "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five." (2) National pride: percentage of people in a country choosing "very proud" as answer to the question: "How proud are you to be -name of your nationality-?" (3) Importance of service to others (percentage of people in each country choosing "very important" as an answer to the following question: "For each of the following, indicate how important it is in your life—very important, rather important, not very important, or not at all important… service to others." We downloaded the actual variable from the website www.geerthofstede.nl "Six dimensions for website.xls (version 2015 12 08)" with the addition of the data "Nonofficial VSM08 scores" for Nepal and Sri Lanka, for which we take the value corresponding to "Sri Lanka-General population." Of these three questions, thrift has the highest load in the original factor analysis. In the empirical section, for robustness, we also construct a measure of LTO from the World Value Survey based only on "thrift." In addition, because the Hofstede measure of LTO is only one plausible measure of this variable, we employ multiple alternative measures in the robustness analysis later in the paper.

[31] For purposes of confidentiality, we only show data points for countries of origin/languages where we observe at least 50 individuals. The statistical analyses that follow include all data, including those from countries of origin/language-speakers with fewer than 50 observations.

oriented cultures are also less likely to be retained in school, be absent from school, or have disciplinary problems. The figures also show that the relationship is not driven by a small number of countries. In the Appendix, we also present, in Figure A1 and A2, the plots representing the relative weight of each country using the size of the circle to indicate the number of observations.

These differences could be driven by individual characteristics, school characteristics or systematic differences across countries of origin. Our empirical analysis takes care of all the above-mentioned concerns by estimating the following equation:

$$Y_{icsgt} = \alpha LTO_c + \beta X_i + \theta X_{it} + \gamma_g + \delta_t + \mu_s + \mu_s \cdot \delta_t + \varepsilon_{icsgt}$$

where Y_{icsgt} is an outcome of interest for student *i* coming from country *c,* going to school *s,* in grade *g,* during the academic year *t,* and LTO_c is LTO measured at the country level or by language spoken at home. X_i and X_{it} are time invariant and time variant individual controls including age and gender (X_i), free-lunch eligibility, limited English proficiency and a dummy indicating whether the student has special educational needs (X_{it}). Our specification also includes grade fixed effects (γ_g), in the outcomes for which this is relevant, a full set of academic year fixed effects (δ_t), school dummies (μ_s), and all the non-linear interactions between school and academic year fixed effects ($\mu_s \cdot \delta_t$) to control for cohort specific differences in performance across different schools. The standard errors are adjusted for clustering at the country of origin or language level, respectively, for first and second-generation immigrants.

Using a country level measure for LTO, rather than an individual measure, has advantages and disadvantages. Having variation at the country, and not at the individual level, excludes the possibility of reverse causality, as the individual performance in school cannot affect the country of origin LTO. The disadvantages are that the measure could be confounded with other country of origin characteristics. In Sections 3-5, in addition to controlling for a large set of other economic, institutional, and cultural country of origin characteristics, we also exploit a linguistic proxy of LTO, which allows for the inclusion of country fixed effects.

Table 2 reports the results, for the first generation, for two measures of performance in mathematics: in levels, at grade 3 (the first time standardized tests are administered in Florida), and the change in performance from grade 3 to grade 8, controlling for the initial condition at grade 3 for the students who can be followed for all period. Column 1 presents findings for test scores in mathematics when we control for age, gender, year, school fixed effects, and all their non-linear interactions. Column 2 includes the full set of individual controls (limited English proficiency, special

education status, and free lunch) intended to capture the relevance of socio-economic status in school performance. The estimates show that first generation immigrants coming from countries with a high level of LTO have higher test scores in mathematics. The results remain strong after controlling for all the socioeconomic status variables, although the coefficient size decreases from 0.597 to 0.336.[32]

Educational performance differences could correlate to differences in patterns and speed of assimilation across migrants from different countries of origin. Therefore, LTO could simply pick up in a systematic way some of these unobserved differences in initial conditions. To rule out this confounding effect, we also look at the change in performance in mathematics from grade 3 until grade 8, after controlling for the initial score in grade 3. We report these results in columns 3-4. Coming from a long-term oriented country not only gives students an initial advantage when they first test in grade 3, it is also associated with strong growth over a long time horizon, as the performance of these students continues to improve. From the specification in column 4: a one-standard-deviation increase in LTO (0.236) corresponds to a 0.051 (0.236*0.217) of a standard deviation in change in math performance. To put this in perspective we can compare it to the effect of maternal education. While we do not have this variable for the sample of first generation students, in the population of second-generation students for which the estimated relationship with LTO is similar, the typical child of a mother with a four-year college degree or more experiences a change in math performance of 0.052 of a standard deviation over the same time period.[33] This specification is particularly compelling as we are able to control for the initial condition of the student (measured with the test score in grade 3), therefore further limiting the possibility that the results are driven by initial selection. Note that the inclusion of the socio-economic characteristics in column 4 does not change substantially the size of the coefficient, an indication that the initial test score in grade 3 captures already most differences in socio-economic status.

Columns 5-8 restrict the sample to first generation immigrants who also speak one of the languages spoken in their place of birth. The results are even stronger. The coefficients on LTO is equal to 0.591 and 0.814, with and without the inclusion of socio-economic status characteristics. As explained above, this increase in magnitude could be driven by a reduction of measurement error or because speaking the country of origin language is a manifestation of cultural attachment. When the

[32] In Section 3 below, we demonstrate using the technique suggested by Altonji, Elder, and Taber (2005) that it is highly unlikely that our results are driven by selection on unobservables.

[33] We do not observe maternal education levels for foreign-born children, and therefore cannot control for or stratify by maternal education in the population of first generation students. However, we can do this for second-generation immigrants, and we report the results of these analyses below.

dependent variable is the change in math scores between grade 3 and 8, the coefficient is also larger in magnitude and almost double in size compared to the unrestricted sample.

Not only are the coefficient estimates statistically significant, but they are also economically meaningful. Based on the estimates of column 6, a one-standard-deviation increase in LTO (0.192) is associated with an increase in math score of 11.3% of a standard deviation (0.591*0.192). The estimated impact of the same increase in LTO implies an increase in math performance of 10.4% of a standard deviation.

Table 3 reports the effect of LTO on other educational outcomes.[34] The results show a strong statistically significant relationship between LTO and various measures of school outcomes: A one standard deviation increase in LTO is associated with 8% of a standard deviation increase in reading levels and conditional reading gains, 7% of a standard deviation reduction in truancy, and 7% of a standard deviation reduction in disciplinary problems. When considering the dependent variables that are dichotomous, a one standard deviation increase in LTO is associated with a 0.35 percentage point reduction in grade retention, and a 1.9 percentage point increase in graduation, both large in relation to the 3.8% of students who are retained in any given year and the 20.9% who fail to graduate in the population.

Tables 4 and 5 report the results for all educational outcomes for second-generation immigrants (defined using the foreign-born status of the mother, her country of birth, when available or the language spoken at home) and the extended sample of second-generation immigrants (defined only using the language spoken at home without any restriction on whether the mother is born abroad or not). It is interesting to note that the relative magnitude of the coefficients is very similar for the two groups and almost identical to the magnitude of the results obtained with the sample of first generation immigrants.[35] Note that the similarity of results across generations (instead of a fading effect by generation) is not surprising. Since we are looking at children, our measure of LTO is capturing the effect of the parental transmitted values for children who were born in the United States

[34] We only report the results for the restricted sample of the first generation (where we impose that the child should speak one of the main languages spoken in his/her country of origin). Results on the unrestricted sample are available from the authors. The number of observations change for different outcome variables because in some cases we have information for a limited number of students and in some others the variable can be calculated for a subset of students. Section 1.1.1 describing the outcome variables provides the rationale for each sample size.

[35] This similarity is not the artifact of the standardization. In fact, when we standardize using the overall population of immigrants, the beta coefficients for first, second, and extended second-generation sample are very similar for all the outcomes.

or who arrived very early in the United States and are socialized in a similar environment. The estimated effects for the continuous dependent variables range from a minimum of 5.2% of a standard deviation of the dependent variable (for truancy in the extended definition of second-generation) to a maximum of 11.5% (for differences in math score at grade 3). All the beta coefficients are reported at the bottom of all our Tables.[36]

Figures 4 and 5 present binned scatter-plots of the mean of different educational outcomes for first and second-generation students versus the mean level of LTO. Consistently with our regression results, we do find a significantly strong relationship between LTO and educational outcomes for both generations.

In the analysis presented so far, we could include only a limited number of family control characteristics. For the sample of second-generation immigrants (restricted and extended), we can also include the information about maternal characteristics contained in the birth certificates. In Table 6, we present the results for the extended sample of second-generation immigrants including dummies for maternal education,[37] a dummy for whether the mother was younger than 16 when she gave birth (teen pregnancy), a dummy for whether the mother was married at time of birth, the number of older siblings, the income in the zip code of birth measured in 1999 (columns 1-5), and all controls included together (column 6).[38]

The controls have all the expected sign: A higher level of maternal education, being married at the time of birth and a higher income (proxied by the income in the zip code at birth) are positively related to school performance; on the other hand, a larger family and teen pregnancy both are negatively related to educational performance. The maternal characteristic with the largest relationship is four years of maternal college degree: its coefficient of 0.385 indicates that a child of a mother with a college degree has a math score 40% higher than a child whose mother is a high school dropout. It is useful to compare this magnitude to the magnitude of the LTO coefficient. Moving from Puerto Rico's LTO (lowest) to South Korea's (the highest) the math score increases by 73%. Another way to compare the economic significance of our results is to compare beta coefficients based on column 6

[36] Özek and Figlio (2016) find that the Asian or Hispanic students who speak English at home perform worse than other Asian and Hispanic students who are first or second-generation immigrants. The broader classification based on race, however, could mask large differences in composition because each race shows a large heterogeneity in terms of cultural values.

[37] We define dummies for high school completion, some years of college, and four or more years of college. In the regressions, the excluded group is high school dropout mothers.

[38] Results for the restricted version of the second-generation are virtually identical and available from the authors.

estimates. The beta coefficient of LTO for math score is equal to 0.10, similar in size to the beta coefficient of a four-year college degree dummy (0.12) and much larger than the beta coefficient of other maternal characteristics, such as teen pregnancy (-0.007), marital status (0.049), and the number of older siblings (-0.034). The LTO beta coefficient is also five times larger than the beta coefficient of the income in the zip code of residence at birth and substantially larger than the beta coefficient on the eligibility to free or reduced price lunch (-0.069). Only the beta coefficients of enrollment in a limited English proficiency program (-0.26) and of whether the student has special education needs (-0.22) are substantially larger.

In Table A4, we repeat our regressions on the other educational outcomes by including all maternal controls. The size and the significance of the coefficients on LTO are not affected by this inclusion.

Given the similarity of results for the different generations, we pool together all the generations of immigrants (first and the extended version of the second-generation) and repeat the baseline regressions for this pooled sample (Table 7). The results are similar, in terms of magnitude and significance, to the ones reported in Tables 3-5. To avoid repeating each robustness check for each generation, from now on we run the analysis with the pooled sample.

3. Selection of immigrants

In this section, we look at various aspects of migrants' selection that could threat our identification or interpretation. The first concern is that the LTO measure could capture some omitted country of origin characteristics. To attenuate this concern we control for additional country of origin observable characteristics[39] (Table 8). We first progressively introduce these controls one by one. The first obvious candidate is the level of GDP per capita: if countries with higher LTO are also richer, a better performance of immigrants from these countries could be a reflection of differences in income (not fully captured by our free lunch control). Contrary to the argument above, immigrant students who come from a country with lower GDP per capita perform better than those from countries with higher GDP per capita, suggesting that selected students are more likely to come from poorer countries. Nonetheless, as shown in column 1, the inclusion of this control has little impact on the coefficient of interest.

Distance from the US could be another prominent determinant of differences in educational attainment: perhaps immigrants coming from countries farther away from the United States have

[39] A detailed description of the country controls and their sources are provided in the Appendix.

higher determination and perseverance. Higher distance could be also correlated to a higher amount of initial resources necessary to move to the US. Indeed, distance from the US has a positive and significant effect on educational attainment, but, as shown in column 2, the coefficient of LTO remains robust to the inclusion of this control.

Galor and Ozak (2016) show that a culture emphasizing the future relatively more than the present has a direct positive effect on savings rates. As a result, differences in educational performance could be related to differences in saving rates among immigrant groups and not directly related to differences in LTO, as higher savings may provide more resources for moving. We control for a measure of domestic savings over GDP in the country origin in column 3. Savings in the country of origin is not statistically significant and does not affect the coefficient on LTO.

Although we directly control for maternal education in the regressions, two other aspects of differences in education are worth taking into account in our analysis. The first is a systematic difference in educational attainment between Florida immigrants from specific countries and their fellow citizen who did not migrate. If immigrants in Florida do not reflect a random sample of the population from which they came, LTO could be simply capturing the positive selection in the education of immigrants. To address this issue, we follow Feliciano (2005) and construct an index of selection based on a comparative measure of immigrants' and non-immigrants' educational attainment adjusted for age along all points of the education distribution.[40] For example, an index of 0.15 indicates that an immigrant's educational attainment probabilistically will exceed that of a non-immigrants from the same country 15 percent more often than a non-immigrant's education will exceed the education of an immigrant from the same country. The higher this measure of selectivity, the more educated the immigrants are relative to the non-immigrant population in their home country. On the contrary, if immigrants are more often less educated than non-immigrants, the negative selection of immigrants will be reflected into a negative index. For our purpose, the concern is that LTO may be capturing part of this selection, in case LTO is correlated with Feliciano's selectivity measure. In our sample, the index of selectivity goes from a minimum of 0.10 (Mexico) to a maximum of 0.92 (Tanzania). China has an index of 0.62, very close to Argentina (0.60) whereas South Korea appears in the bottom part of the distribution (0.30). Overall, this measure is relevant in explaining differences in educational performance, but its inclusion increases the size of the coefficient on LTO (column 4 of Table 8). In addition to the Feliciano's measure of immigrant selection, we try an alternative measure of immigrant

[40] We describe the construction of this selection measure in detail in the Online Appendix.

selection constructed by Hanushek et al. (forthcoming). For each country of origin, Hanushek et al. (forthcoming) calculate the selectivity parameter for school attainment at the percentile p of the home country distribution from which the average immigrants to the US is drawn.[41] Although the measure is present for a smaller sample of countries, our results are robust to its inclusion (Table A5 of the Appendix).[42]

In the Appendix (Figures A3 and A4), we also report the relationship between LTO and each of the two measures of selection. LTO is uncorrelated with the Hanushek et al. (forthcoming) measure of selection and even negatively correlated with the measure of educational selection based on Feliciano. This result is reassuring as it helps us to rule out the possibility that long-term oriented countries send their brightest immigrants to the United States, and that this mechanical effect explains the observed relationship between LTO and educational performance.

Quality of education in the country of origin, as reflected in reading and math scores, could be another important determinant of immigrants' educational performance. Higher quality of education received by the parents may reflect later in higher achievement of the children as parents with higher quality of education could help their children doing homework more effectively. In column 5, we control for the average math score in the country of origin constructed from PISA.[43] The coefficient on LTO is still significant, despite the much smaller number of immigrant groups included in the regression due to the availability of the data from PISA.[44]

In column 6, we include all the country controls in one specification. The LTO coefficient remains highly significant and, overall, the estimated impact is robust across the various specifications. The coefficients also remain stable, ranging from 0.40 to 0.70 (for math score). Similar results are

[41] For the exact formula see Hanushek et al. (forthcoming)

[42] Note that the coefficient of LTO is much smaller with the inclusion of the Hanushek et al. (forthcoming) measure of selection. The reduction is not due to the inclusion of this control, but to the different size of the sample. For example, the coefficient of LTO for the score in mathematics in grade 3 is equal to 0.484 for the sample restricted to countries/languages for which the Hanushek et al. measure is not missing. It goes down to 0.372 with its inclusion (see Table A5).

[43] We also test the robustness of our results to the inclusion of a simple measure of human capital in the country of origin, using the number of years of education from Barro-Lee (2013). The results are substantially unchanged.

[44] Note that the lower coefficient on LTO obtained when we include the mathematics score from PISA is partially due to a sample selection. The effect of LTO to those individuals for whom the PISA math score is available is equal to 0.501 (without the inclusion of this variable) and 0.463 when this control is included. Note also that the PISA math score from the country of origin is not significant in the regressions. One potential reason is that this variable measures both institutions and beliefs in the country of origin and when included in a regression with the beliefs component, the variable captures only the institutional variation which should not be relevant for immigrants, since they live now in the US.

obtained for the change in mathematical performance from grade 3 to grade 8 (columns 7-12 of Table 8), where the coefficient varies from 0.34 to 0.44.

In Table 9 we report the robustness to the inclusion of these country controls to the remaining educational outcomes.[45] We also test the robustness of our results to the inclusion of additional country of origin controls, including a set of geographical characteristics[46], the log of the population in 2000, the Gini coefficient in 2000, the type of migrants (share of employed and family-led diversity migrants over the total population of migrants) and a measure of genetic distance from the US. The results, available from the authors, are robust to the inclusions of this larger set of controls.

The point estimates reported so far may be biased due to unobservable factors that correlate with our education outcomes and LTO. How large would this selection on unobservables need to be relative to the selection on observables in order to attribute the entire OLS estimates previously reported to an unobservable selection effect? We use the approach suggested by Altonji et al. (2005) to assess the degree of omitted variables bias by studying the stability of the estimates for α.[47] The Altonji et al. (2005) ratio (going from 2.18 to 8.55 and reported at the bottom of Table 9) suggests that selection on unobservables would have to be substantially stronger than selection on observables for our main result to be overturned. In one case, the coefficient is even negative suggesting that our OLS results are likely to be downward biased.

The second potential concern with our sample is that our results may be driven by some specific groups of immigrants, in particular Latin American students who are very numerous in Florida and whose LTO is, on average, in the bottom quartile. Similarly, Asian immigrants are in the upper tail of the distribution of LTO and considered a "model minority" for excelling in education. In Table 10, we test the robustness of our results to the exclusion of these groups of immigrants. In Panel A, we exclude the first and second-generation immigrants coming from Latin America and Central

[45] The inclusion of the math score from PISA substantially reduces the sample. For that reason, we report the regressions without the inclusion of this control. In Table A6, we repeat the regressions with the inclusion of this control and the results remain robust.

[46] As geographical characteristics we include latitude, longitude, average temperature and ruggedness.

[47] The underlying idea of Altonji et al. (2005) is that, under the assumption that the selection on observables is proportional to the selection on unobservables, if the coefficient does not change much when we add controls there is little bias. We thus compare the point estimates in Table 9 which include a full set of country controls(α_1), with the point estimates when none of the country controls is included (α_2). The Altonji et al. (2005) ratio is given by: $\alpha_1/(\alpha_2 - \alpha_1)$. The larger α_1 the stronger is the effect that is left after controlling for observables, and the more would unobservables have to explain in order to reduce the coefficient to zero. As for the denominator in the ratio, the smaller is the difference between α_2 and α_1, the less is the estimated coefficient influenced by observables, and the stronger would selection on unobsevables have to be relative to selection on unobservables in order to completely explain away the effect.

America.[48] The results remain robust to the exclusion of this group. In addition, the magnitude of the beta coefficients remains similar (and are sometimes reduced) compared to the baseline specification of Table 7. Panel B shows that our results are also not driven by Asian students. The beta coefficients, not surprisingly, are smaller when we exclude the top performers from our specification.[49]

Overall, examining Figure 1, it is apparent that there exists some geographical clustering in LTO by continent. Thus, we also check that our results do not reflect these differences by adding continent dummies to the whole sample. The estimates are also robust to this procedure (Panel C), with almost no difference in terms of magnitude. [50]

The third important aspect of selection is the possibility of within-country selection along LTO, more specifically that immigrants are systematically selected from the upper tail of the distribution of long-term oriented individuals in countries with higher LTO. Unfortunately, we cannot test directly for this hypothesis because in the FLDOE data we do not have a student-level individual measure of LTO.[51] We nevertheless test for this hypothesis by looking at alternative data taken from the European Social Survey (ESS).[52] We select three different questions measuring LTO from the ESS and show that, while the measures of LTO taken from the ESS are strongly correlated with the LTO measure from the country of origin, it is not the case that immigrants coming from LTO countries are more positively selected based on this measure. The wording of the questions and the analysis are described in details in Section A.4 of the Appendix.

4. Alternative measures of Long-Term Orientation

We now consider the robustness of our results to the use of two alternative proxies for LTO. We first look at linguistic differences in the use of the future tense as a proxy for the relevance of future-oriented versus present oriented actions. Chen (2013) uses the fact that languages differ in the

[48] Note that we define "Latin America" as all countries located in the Americas with the exclusion of Canada and the US.

[49] We also test the robustness of our results to the exclusion of all gifted students to rule out the possibility that this group is driving our results and our results are very similar.

[50] For the first generation, the continent dummy is equal to one if the country belongs to a given continent, 0 otherwise. As for language, we adopted the following rule: a language is assigned to a given continent if among the sample of first generation immigrants who speak that language at least 50% come from that specific continent.

[51] It is important to note that since LTO is important for educational achievement, and since educational selection is negatively related to LTO, it is unlikely that this form of selection could be at play.

[52] The ESS is a biennial cross-sectional survey administered in a large sample of mostly European nations, containing information on individuals' social values, cultural norms and behavioral patterns. The survey has been conducted several times: in 2002/2003, 2004/2005, 2006/2007, 2008/2009, 2010/2011, 2012/2013. The survey contains information about the country of origin of immigrants, which allows us to construct measures of LTO by country of origin for immigrants and compare these measures to the LTO of the country of origin.

way in which they grammatically mark future events and test whether this difference has an effect on savings, health behavior, and retirement assets. His idea is that languages that grammatically separate the future and the present lead speakers to dissociate the future from the present. This would make the future feel more distant, therefore making future-oriented choices harder. On the other hand, if the language makes the present and the future indistinguishable, its speakers will be more willing to take future-oriented actions, because they appear to be closer in time.

Chen (2013) distinguishes languages in two groups: those that have a strong future-time reference and those that do not. The measure has been constructed by the European Science Foundation's Typology of Languages in Europe (EUROTYP) project. According to this criterion, languages are classified as "futureless" if they do not require "obligatory use in prediction-based contexts". To use one of Chen's (2013) examples: "if I wanted to explain to an English-speaking colleague why I can't attend a meeting later today, I could not say 'I go to a seminar'. English grammar would oblige me to say 'I will go,' 'I am going,' or 'I have to go to a seminar.' If on the other hand I were speaking Mandarin, it would be quite natural for me to omit any marker of future time and say the equivalent of I go listen to a seminar, with no reference to future time, since the context leaves little room for misunderstanding. In this way, English forces its speakers to habitually divide time between the present and the future in a way that Mandarin (which has no tenses) does not." According to Chen's hypothesis, in our specification therefore *Futureless language*s should be positively correlated to educational performance.

In Table 11, Panel A, we report the impact of speaking a futureless language on all our measures of educational performance: The similarity with our main results is remarkably strong, in terms of both magnitude and significance. We match all the immigrants with Chen's linguistic measure using the language spoken at home. One big advantage of matching directly on language is the possibility of including (at least for the first generation) country of origin fixed effects, further reducing the possibility that our results are driven by unobservable country of origin characteristics. Performing this very demanding test does not change the nature of our results: linguistic differences that proxy for a different weight to future and present choices are sufficient in explaining differences in educational performance (Table 11, Panel B). Linking educational performance to individual linguistic use is a powerful test because it allows us to isolate the cultural effect of LTO embodied in the linguistic structure. In addition, all the other differences at the country level (economic, cultural and

institutional) are controlled for by the use of country fixed effects, a further confirmation that our results are not driven by unobservable country characteristics correlated with LTO.[53]

Galor and Ozak (2016) study the origins of the distribution of LTO across the world. They establish empirically that these differences can be traced back to geographical variations in the return to agricultural investment in pre-industrial societies: societies whose ancestors experienced a higher crop yield are characterized by higher LTO today. The authors test their hypothesis constructing a measure of the potential caloric yield per hectare for each country. Their historical measure of crop yield is constructed using data from the Global Agro-Ecological Zones (GAEZ) project of the Food and Agriculture Organization (FAO). The GAEZ project supplies global estimates of crop yield for a variety of crops in grids with cell size of 5' X 5'. For each crop, GAEZ also provides estimates for crop yield based on three alternative levels of inputs (high, medium and low) and two source of water supply (rain-fed and irrigation). The authors construct their measure under low level of inputs and rain-fed agriculture to limit concerns of endogeneity due to human intervention.[54]

We use the measure constructed by Galor and Ozak (2016) and test its relevance for the determination of school performance. Table 11, Panel C establishes a positive statistically and economically significant effect of crop yield on school performance. In particular, the OLS effects suggest that the magnitude of the beta coefficients is very similar to the magnitude of Hofstede's LTO measure (for example, the beta coefficients for math score and math change are 0.097 and 0.089).[55] Consistent with Galor and Ozak's (2016) theory, individuals whose ancestors experienced higher crop yields exhibit long-term oriented behavior. [56]

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[53] One potential drawback of the futureless language measure is that the fraction of students speaking a futureless language in our sample is not very large (2%), given the large fraction of Spanish-speaking students (coded as zero). This implies that the relevant variation comes from a very small part of the sample. To limit this issue, we also run our regressions excluding from the sample Spanish-speaking countries from both the pooled sample and the first generation sample and the results do not change (Table A7). Our identification comes from two sources: people coming from countries where multiple languages are spoken, but also people coming from a given country but reporting a different spoken language.

[54] We use the ancestry adjusted measure for the post-1500 CE period. Galor and Ozak (2016) find that this variable is constructed more precisely when the sample excludes the new world, which experienced a large amount of migration. Given the large fraction of migrants speaking Spanish and coming from the new world, where intercontinental migration and population replacement were very high, we limit our attention to the Old World sample. For further details about the construction of this measure, see Galor and Ozak (2016).

[55] We also run an instrumental variable regression that uses crop yields as an instrument for long-term orientation to see whether the component of LTO driven by long-lasting differences between countries also has a positive effect on test scores. The IV regressions show that the component of LTO driven by long-lasting differences between countries has an effect of all the educational outcomes.

[56] Dohmen et al. (2015) construct a measure of patience that should isolate the trade-offs between immediate and delayed monetary rewards. This measure is part of a larger project, the Global Preference Survey, measuring

In constructing the measure of LTO, Hofstede et al. (2010) use the principal components of three questions, related to thrift, national pride and service to others. Of these three questions, the importance to teach thrift to children has the highest load in the original factor analysis performed by Hofstede et al. (2010). As a final robustness check, we also construct a measure of LTO from the World Value Survey only based on thrift as an important value to be transmitted to children, which is the variable most obviously related to delayed gratification. The results, reported in Panel D of Table 11, are very similar to the one obtained when we use the Hofstede measure of LTO.[57]

5. Robustness to other cultural variables

One concern with our analysis is that educational performance could correlate with other cultural traits. In this section, we show that the inclusion of a large set of additional cultural values to our baseline specification does not alter our main results (Table 12). We start by looking at the importance of social capital, as proxied by the fraction of individuals in a country that believe that most people can be trusted.[58] A large literature shows evidence of a persistent correlation between trust and social capital and various economic outcomes (for a survey article, see Algan and Cahuc, 2014). Social capital could affect the educational performance of immigrants through various channels: individuals that are more trustworthy could trust more the educational system in the United States, take more advantage of it, which in turn could improve their educational performance. Also, Guiso et al. (2016) show that in area of high civic and social capital, children have a higher self-efficacy beliefs which have been linked with better educational outcomes. Finally, social capital could relate to the educational performance of immigrants because of its correlation with teaching practices. (Algan et al., 2013) show that horizontal teaching practices, such as working in groups, seem to promote the formation of social capital, while vertical teaching practices, such as teachers lecturing, seem to discourage it. This evidence may imply that migrants coming from countries whose teaching practices are more similar to the ones of the United States could perform better as learning is easier in a similar environment. However, with the exception of absenteeism, trust does not have a significant effect on

time preferences, risk preferences, social preferences and trust from representative populations of 76 countries. The patience measure derives from a combination of responses to two survey measures, one with a quantitative and one with a qualitative format. These two were the best predictors of behavior in experiments involving incentive choices between earlier versus later rewards with a time delay of 12 months, therefore capturing annual discounting. We would like to test the robustness of our results to this measure, when the data will be available from the authors to other scholars.

[57] The number of observations is a bit lower than the ones reported in Table 7. Hofstede (2010) includes measures for LTO for Nepal and Sri-Lanka, two countries not present in the WVS.

[58] In the World Value Survey the respondents is asked whether "Generally speaking, would you say that most people can be trusted" (coded as 1), or that "you need to be very careful in dealing with people" (coded as 0).

educational performance. Moreover, its inclusion does not change the economic and statistical significance of the coefficient of LTO on educational performance.

In Table 12, the second trait we consider as a potential confounding factor is the emphasis given by different cultures to the importance of hard work. In his book, *The Protestant Ethic and the Spirit of Capitalism*, Max Weber argues that the Protestant ethic, which emphasized diligence and hard work, was an important factor for the economic success of Protestants in the early stages of European capitalism. Using the World Values Survey, we constructed a variable for each immigrant group (following our previous methodology) using the answer to the question "In the long run, hard work usually brings a better life" (taking the value of 10) and "Hard work doesn't generally bring success – it's more a matter of luck and connections" (taking value of 1) (a higher value is associated with the importance of hard work). The inclusion of this cultural trait in our baseline regression does not change our results; hard work is also never significantly related to our educational outcomes with the exception of the number of absent days.

Finally, in the remainder of Table 12, we test whether any of the other dimensions of culture studied by Hofstede (2010), including individualism versus collectivism, indulgence/restraint, hierarchy and inequality of power, femininity/masculinity and uncertainty avoidance appear to matter for educational outcomes. The results rule out the possibility that these other societal cultural characteristics are confounding factors in our analysis. Section A.2.2, in the Appendix, describes in details all the cultural variables.

6. Potential mechanisms driving the results: family and peers

So far, our analysis has assumed that LTO has similar effects for all individuals with a similar cultural background. However, the effect of LTO on educational outcomes could have heterogeneous effects, both in terms of family characteristics but also with respect to the interaction with peers of similar cultural background in the school where children study.

We test for these two possibilities separately in Tables 13 and 14. In Table 13, we include interaction terms between LTO and different family characteristics (including free-lunch eligibility, number of older siblings, the zip code median income at birth and all maternal characteristics). We observe some heterogeneous estimated effects with the level of education of the mother. Mother's education, surprisingly, reduces the effect of LTO although in a non-linear way. A possible interpretation is that cultural values that emphasize effort are relatively more important in families with lower educational attainment. Alternatively, if the mother has less education, perhaps she is more likely to stay at home and socialize her children to her values. Finally, mother's own education can be

a substitute for a strong set of cultural values. That is, mothers coming from cultures that do not value education but somehow managed to get an education themselves despite the cultural impediments could pass these skills or values on to their own children. Despite the negative effect on the interaction terms of the mother's educational dummies, the overall effect of LTO remains positive and significant, even when we include as regressors all the interactions in the same specification (Column 6). Table A9 finds similar results for all other educational outcomes.

The fraction of children speaking the same language in a given school may also play an important role in transmitting and preserving the importance of LTO: if cultural transmission is important, the larger the fraction of children speaking the same language in a school, the larger should be the effect of LTO on school performance. Note that this fraction depends on the extent to which a group tends to cluster in a school but also on how large a group speaking a given language is.

We calculate a proxy for cultural density as the proportion of children speaking a given language in each school for every academic year. For each language, the numerator is therefore given by the number of children speaking a given language in the school in a year, whereas the denominator is the number of all students in the school (including non-immigrants) in that year. Although the average fraction of students speaking a given language in a school is fairly low in our sample (lower than one percent), there is a substantial heterogeneity in our sample, with some languages reaching up to 38% in a given school/year. Languages with high percentages other than English, Spanish, and Haitian Creole, the three most commonly spoken languages in Florida, include French, Hebrew, Russian, Vietnamese, Chinese, Serbian, Arabic, and Portuguese.

We attach to each child speaking a given language, his/her own measure of cultural density by school and academic year. To limit the possibility that our results are biased by the languages spoken by a very large fraction of students and in order to capture sufficient variation, we drop from the sample students speaking Spanish, Haitian Creole, or English.[59]

Table 14 reports the results. Across all specifications, a higher fraction of children speaking the same language of the student is significantly negatively related to the student's educational attainment for almost all outcomes.[60] This is not surprising, given that speaking a language different

[59] These observations are dropped only from the numerator (and the regressions), while they will be part of the denominator, which includes the total population of each school.

[60] It is interesting to note that the fraction of students speaking the same language in a school is significant only when the LTO variable is also included. When we run a regression only with the fraction of students speaking the same language as a control, this variable is only significant when the LHS variables are reading scores in grade 3, disciplinary incidents, and retention. In these three cases the cultural density variable has a negative effect on all three educational outcomes.

than English can have some impediment on the learning process and a larger fraction of students speaking a foreign language can reduce a student's incentive to speak English. However, interestingly, the estimated interaction between LTO (based on the language spoken by the student) and the fraction of students speaking the same language in school is positive and significant. In addition, the full marginal effect of LTO remains positive and significant when evaluated at the mean of cultural density: a one standard deviation increase in LTO is associated, for example, with an 11.5% standard deviation increase in math level. The degree to which children cluster in the same school appears to be an important vehicle to explain the effect of LTO on educational outcomes.[61] This finding could be due to having culturally-similar people reinforcing one's culture, or it could be that people who settle in neighborhoods proximate to others with a similar culture feel their culture more strongly; in either case, this interaction points to a strong role of culture in explaining student educational outcomes.

To investigate the mechanisms through which a culture of delayed gratification affect educational performance, we also study some additional outcomes. We begin by studying the probability of being enrolled in advanced classes in high school and, specifically, the probability of choosing advanced scientific classes. Both could be another manifestation of LTO attitudes. Advanced classes require hard work and perseverance today in exchange for future rewards, as measured for instance by access to better colleges which normally reward a more rigorous high school curriculum. In addition, scientific subjects, on average, give access to better paying jobs. Furthermore, we investigate possible ways in which parents with higher LTO may further contribute to their children's success by selecting better schools and successfully enrolling their children in a gifted program. We examine all these outcomes in Table 15. [62]

We start by looking at whether there is a direct link between LTO and being enrolled in advanced placement or equivalent classes in high school and whether this correlation also exists for advanced placement classes in scientific subjects (columns 1-2). We include our standard controls but also add performance in mathematics at grade 8. The effect is statistically and economically significant: LTO has a large estimated effect for both outcomes (the beta coefficients are equal to 0.09 and 0.10 respectively).

[61] When the left hand side variable is the change in scores between 3rd grade and 8th grade we interact LTO with our variable of cultural density either in 3rd grade (the first time the student was tested) or in 8th grade. The results are similar in the two specifications.
[62] The definition of these variables is given in section 1.1.1.

In the previous analysis, we provided evidence that students from cultures that value delayed gratification perform better than other students despite attending the same school. This evidence suggests that long term oriented children are socialized to exert higher effort. There is another potentially complementary channel that connects delayed gratification and academic success. Parents from long term oriented cultures may themselves exert higher effort in securing good education opportunities for their children by prioritizing their kids' education over other personal goals. We study this possibility next. Specifically, we examine whether children coming from long term oriented families also go to better schools, controlling for the district of residence. Starting in 1996 the Florida Department of Education required school districts to design an open enrollment plan that allows parents in every school district to choose among several options including magnet schools, schools-within-schools, alternative schools, year-round schools, dual enrollment, and controlled open enrollment schools. And, of course, families can always engage in "traditional school choice", that is, by choosing their school by selecting a residential location. We study whether parents with high LTO are more likely to either use Florida's school choice programs or otherwise choose neighborhoods served by better schools, as measured by the school quality reported by the Florida Department of Education beginning in 1999. In each district parents have access to the schools' scores before enrollment. These school scores have 5 possible letter grades, from A to F, which we coded from worst (1) to best (5). Since a school's letter scores change frequently and it is unlikely that parents re-optimize every year, in columns 3-5 we regress the state-determined quality of the school chosen the first time the student enters the public school system (in kindergarten or pre-kindergarten) – the time when school choice is most relevant -- on LTO. In column 6-8, we also repeat the analysis by regressing the school score in any grade on LTO.[63] The results are very similar in terms of magnitude and significance: Families coming from long term oriented societies actively choose better schools within their school district.

The school choice results point toward a pattern in which families from high long term oriented backgrounds take active steps to secure good outcomes for their children. There exists one outcome in the administrative data that is especially conducive to studying the likely role of direct parental involvement in school decisions – whether a student is enrolled in a school's gifted program.

[63] For each school choice (the first time they enter the school system either in Kindergarten or pre-Kindergarten) or all grades, we report three different specification, one including district fixed effects, one including zip code at birth fixed effect and one including both. The different specifications allow to control for the locational choice of the family at different time periods.

Though there are differences across school districts in the implementation of gifted programs, the state of Florida mandates that each district is responsible for providing an appropriate program that serves all exceptional students and the State Board of Education provides oversight over district plans. By fourth and fifth grade, most elementary schools in Florida offer separate full-time instruction for gifted students. To qualify for being included in gifted instruction, students have two routes. The first way is to submit an IQ test above the state cutoffs. Students could be tested by either a district psychologist or by a private psychologist and submit the results to the school. Students with IQs above the relevant threshold are eligible for gifted status, with the final determination made in consultation between parents, teachers, and the school's Exceptional Student Education (ESE) specialist. This process often begins when school officials suggest that a student be evaluated for gifted IQ status. Alternatively, seats in the gifted classrooms are filled by non-gifted students -- known as high achievers -- who scored highest among their school/grade cohort in statewide achievement tests in the previous year.

While we do not have information on external tests, we have a mechanism for testing the degree to which immigrant students ultimately receive gifted instruction. Our approach is as follows: We look at the set of students who were *not yet* classified as gifted in third grade, before the first statewide assessment, but then who received the highest performance (level 5) rating on either mathematics or reading and either a level 4 or 5 on the other test, and then see whether, conditional on being in this rarefied group of exceptionally high achievers, the student is enrolled in the gifted program in the following year. Because gifted education assignment requires significant action by both parents and school officials, it is reasonable to interpret new gifted enrollment following an exceptionally high initial test performance as evidence of active parental intervention on behalf of the child's education. We find that children coming from long term oriented cultures are more likely to be enrolled in a gifted program and the effect is again sizeable (a beta coefficient of 0.06).

These last two results are important. First, they confirm that parents from countries with a long-term oriented culture appear to care relatively more about education and, despite the cultural barriers that a foreign school system poses to immigrant families, they are determined to use the rules of the system to secure better educational opportunities for their children. Indeed, part of the higher educational achievement of immigrants coming from countries with high LTO may be the result of a direct intervention of parents selecting better schools and advocating for the inclusion of their children in gifted programs. While our previous analysis suggests that students encultured to delay gratification, are more likely to achieve success independently from the quality of the school, this new evidence,

together with the one presented on the importance of having students speaking the same language attending the same school, is consistent with models of cultural transmission emphasizing the relevance of social learning (Boyd et al., 2011): children are more likely to internalize the value transmitted by their parents if people around them behave in a similar way.

7. Relative performance of immigrants and natives

We now compare the performance of immigrants with the one of natives to see whether their cultural beliefs constitute an advantage or disadvantage in the new country.[64] To perform this exercise, we keep in the sample only students who are observed continuously in our panel from grade 3 to grade 8, we then first collapse math and reading scores by country of origin (or language spoken at home) and then by immigrant group (first and second-generation).

In Figure 6A, we report the performance of natives, first, and second-generation immigrants from grade 3 to grade 8. Not only immigrants start at a higher level compared to natives but their performance also continues to increase over time, whereas the performance of natives stays flat. Given the observed racial difference in educational performance in the United States, in the same figure we also report test scores for native whites only. Although the scores of white students are higher in level when compared to the overall sample, immigrants tend to out-perform white natives over time in both mathematics and reading.[65] Once again, the performance of white natives is flat over time. In comparing the first and the second-generation, it appears that the second-generation tends to be closer to the natives. This result is not surprising as these children are born and raised in the US and, therefore, they are less isolated from the dominant culture.[66]

Since part of the immigrants' school performance could be driven by school quality, to gain further understanding of the differences between immigrants and natives, we also compare the three groups in the best schools (those receiving a score of A). Schools definitely have a strong relationship with educational performance (the scores are higher for the three groups compared to the averages in the overall sample) but the differential patterns between the three groups remain the same. This is an important result. It suggests that immigrants outperform natives, even holding constant the school

[64] While the regression analysis contains only data of immigrant students, for pure comparison, this is the only section of the paper in which we use data of native students.
[65] White natives have slightly higher scores in reading only in grade 3.
[66] Second-generation immigrants in our sample are not the children of the first generation in our sample. The differences compared to the native whites could still be due to differences in the cohort of migration of the first generation.

institutional environment (Figure 6B), and it is consistent with Chetty and Hendren (2015)'s finding that local conditions matter less for immigrants.

In Figure 7 we plot the performance in mathematics and reading by LTO quartiles and for white natives. Note that the LTO for the United States is 0.26, close to the lowest quartile of our immigrants' distribution. [67] We find a remarkably monotonic effect of LTO on math and reading scores: only immigrants with LTO lower than the natives perform worse in both mathematics and reading.

8. External validity from the Program for International Student Assessment (PISA)

For external validity, we use student-level data from the Program for International Student Assessment (PISA), an internationally standardized assessment conducted by the Organization of Economic Cooperation and Development (OECD) and administered to 15-year old students every three years since 2000. We use the 2003, 2006, 2009 and 2012 waves.[68] PISA contains information on the country of origin of children and their parents. The analysis based on this dataset can therefore be more precise for second-generation immigrants, since we classify them based on the parental country of origin and not the language spoken at home. For consistency with the Florida analysis, we define second-generation immigrants based on maternal information.[69] The list of countries of origin for first and second-generation is provided in the appendix (Table A10).[70]

PISA assesses a range of relevant skills in three main domains: mathematics, reading, and science. For these domains, PISA presents the test scores in standardized forms, with mean of 500 test-score points and a standard deviation of 100 test-score points across OECD countries.[71] To make these results comparable with the analysis for Florida we re-standardized all the scores to zero mean and unit variance.

In addition to test scores, PISA also provides information on retention and truancy. We measure retention with a dummy variable equal to 1 if a student repeated at least one year during his/her school career and 0 if she/he did not. We measure truancy with a dummy variable equal to 1

[67] LTO for the bottom 25th percentile is 0.21.

[68] We use these waves because in 2000 the information about the countries of origin of the parents is not provided (the questionnaire only asks if the students and/or their parents were born in the country where the student took the test).

[69] Nonetheless, we present the results based on fathers' country of origin in Table A12 of the Appendix. They show that the effects are very similar. We also run the regressions where both parents come from the same country of origin. Although the sample size is much smaller the magnitude is similar to the maternal and parental specifications.

[70] The 37 countries of destination included in our analysis are reported in Table A11.

[71] For details on how PISA reports student scores see the on-line Appendix.

if the student reported that in the last two full weeks of school he/she skipped a whole school day more than once, and zero otherwise.[72] Descriptive statistics for our sample are provided in Table 16.

Overall, we are able to provide external validity for most of the outcomes present in the FLDOE dataset, the only exception being the changes in mathematics and reading scores over time, which cannot be calculated due to the cross-sectional nature of PISA.

Figures 8 and 9 plot the raw correlations between LTO and the five educational outcomes for both first and second-generation immigrants. Although the data relate to immigrants or children of immigrants in thirty-seven different destination countries, the basic correlation between LTO and educational performance is very similar to the one observed among immigrants in Florida.

The results are confirmed when we run individual level regressions for the two immigrant groups (Tables 17 and 18). Our specification is similar to the Florida dataset. Our controls include gender, age, parental education, grade and country of destination fixed effects (columns 1-5 of Tables 17-18). PISA also contains an index for family wealth, an important control that we did not have in the FLDOE data, as differences in educational performance could correlate to differences in the initial level of resources among different immigrant groups. We control for this index in columns 6-10. The inclusion of wealth, if something, makes our results more precisely estimated. The results are similar between the two groups, though slightly stronger for second-generation immigrants. Despite using a very different set of destination countries from the US, it is remarkable that the magnitudes of the LTO beta coefficients reported at the bottom of each table have a similar order of magnitude to the LTO beta coefficients estimated in the Florida sample.

Finally, Figures 10 and 11 present binned scatter plots of the mean of different educational outcomes for first and second-generation students in PISA versus the mean level of LTO. Consistent with our regression results, we do find a significantly strong relationship between LTO and educational outcomes for both generations.

9. Conclusions

This paper explores the role of teaching delayed gratification and long term orientation on educational attainment and outcomes. It establishes that, controlling for the quality of schools and individual characteristics, immigrant students from countries with long-term oriented attitudes perform better in school than immigrants from countries that do not emphasize the importance of delayed gratification. Coming from a long-term oriented country not only gives students an initial

[72] This variable is present only in the 2012 PISA wave.

advantage when they first test in grade 3 in both math and reading, it also has an additional strong effect over time, as the performance of these students continues to improve relatively to students coming from less long-term oriented cultures. In addition, students from long-term oriented cultures have fewer absences, fewer disciplinary incidents, are less likely to repeat the same grade and are more likely to graduate from high school in four years. Finally, they are more likely to enroll in advanced level classes while in high school and to be more likely to select, among these, scientific subjects.

Parental intervention appears to be an important channel of cultural transmission: we find that parents are more likely to choose highly ranked schools and to advocate for inclusion in gifted programs, controlling for students' achievement level. At the same time, we also find that the composition of the school, in particular the fraction of children speaking the same language, magnifies the effect of LTO on educational performance. Both results are consistent with the idea that social learning (Boyd et al., 2011) is an important channel of cultural transmission: children are more likely to internalize the value transmitted by their parents if people around them (family and peers) behave in a similar way.

Our results also show that, independently from formal institutions (schools and neighborhoods), both first and second-generation immigrants from countries with longer term oriented attitudes than the US perform substantially better than native US (white) students.

We validate these findings outside the US using educational performance of a sample of student immigrants in 37 different countries (PISA) and find a remarkable economic and statistical similarity in the results.

These results shed light on the remarkable persistence found in the educational literature. Besides income, wealth, and education, parents transmit cultural traits to their children. If LTO is an important trait to explain educational outcomes, disentangling its independent effect on educational outcomes is important for policy implications. Our findings can partially explain why the exogenous effect of a sudden shock to income, albeit significant, has a relatively small economic impact on future generations, especially if compared with the limited mobility across generations. Similarly, this analysis may also shed light on why, despite the importance of socioeconomic background for students' achievement, a substantial exogenous shock to wealth has limited or no effect on future generations. Bleakley and Ferrie (2016) find indeed that the children and grandchildren of winners of the 1832 Cherokee Land Lottery did not experience better educational outcomes than non-winners, suggesting that wealth shocks alone are insufficient to have persistent effects in the formation of human capital of future generations. More importantly, it suggests that part of the correlation that we observe across

generations in educational achievement is driven by some other shared family characteristics different from wealth that are transmitted along family lines. In this paper, we have shown evidence consistent with the transmission of LTO values as a driver of better educational attainment.

Beyond finding evidence consistent with parental transmission of values, our results suggest that other channels of cultural transmission affect educational attainment, consistently with Algan et al. (2013). Our findings that the impact of LTO on individual students also depends on school composition could also explain why observed school quality does not fully account for the differences across schools in the number of high-achieving students (Ellison et al., 2016), suggesting that the school's cultural composition may potentially play an important role on each student performance. The full impact of schools' cultural composition on the educational performance of the overall student body is left for future research.

Although long-term orientation is associated with better performance in school, little is known on whether the strong parental encouragement to forego current happiness for future benefits, is associated with increased rates of anxiety and depression among children, either in their youth or at older ages. Some recent evidence (Hsin and Xie, 2014) highlight the potential psychological and social costs associated with Asian-Americans (a group displaying high values of long-term orientation) achievement success. A more comprehensive analysis of these psychological costs is left for future research.

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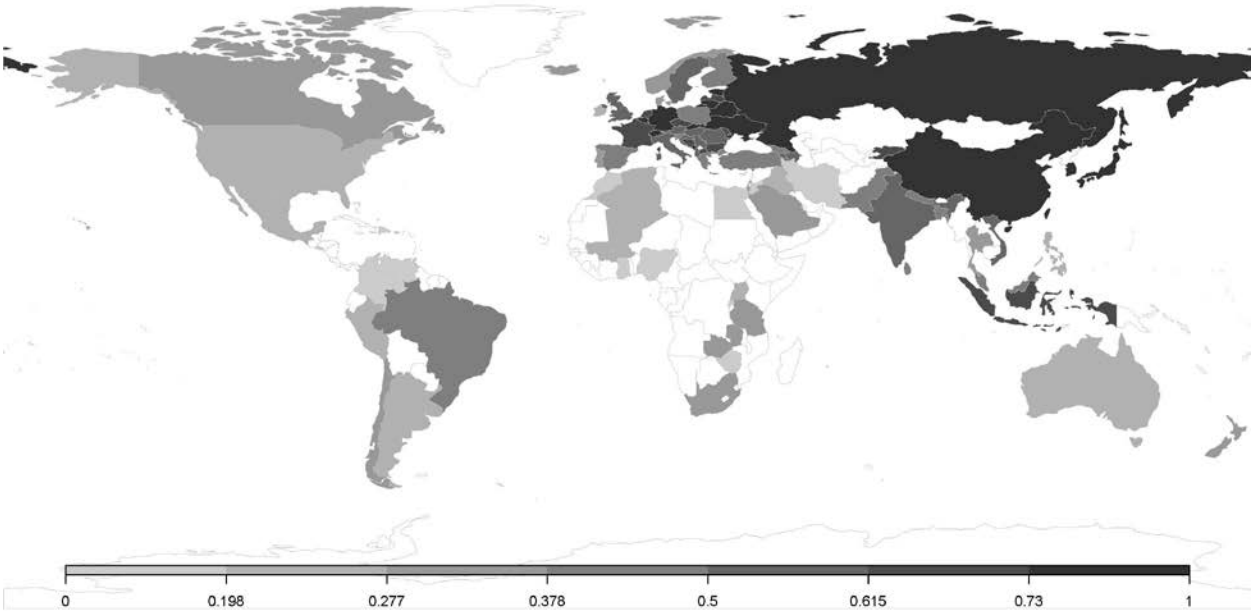
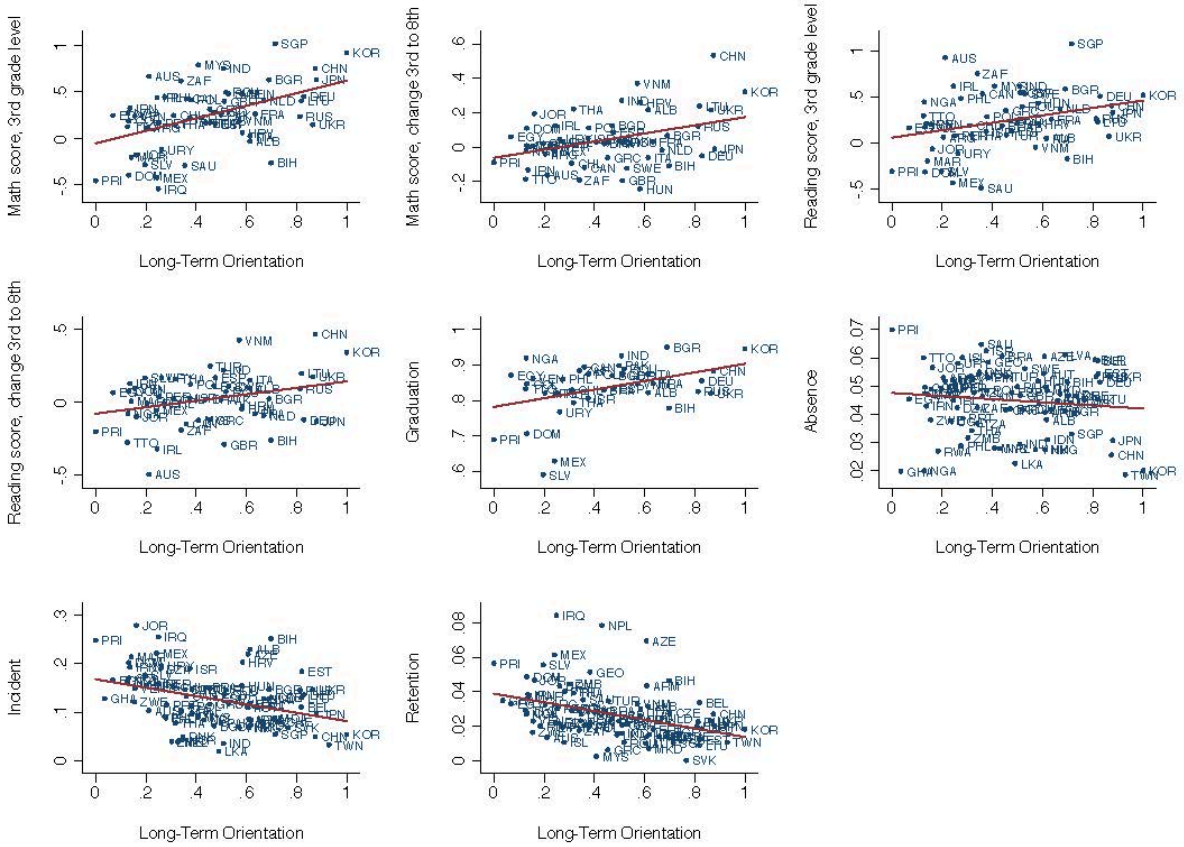
Figure 1
Long-Term Orientation



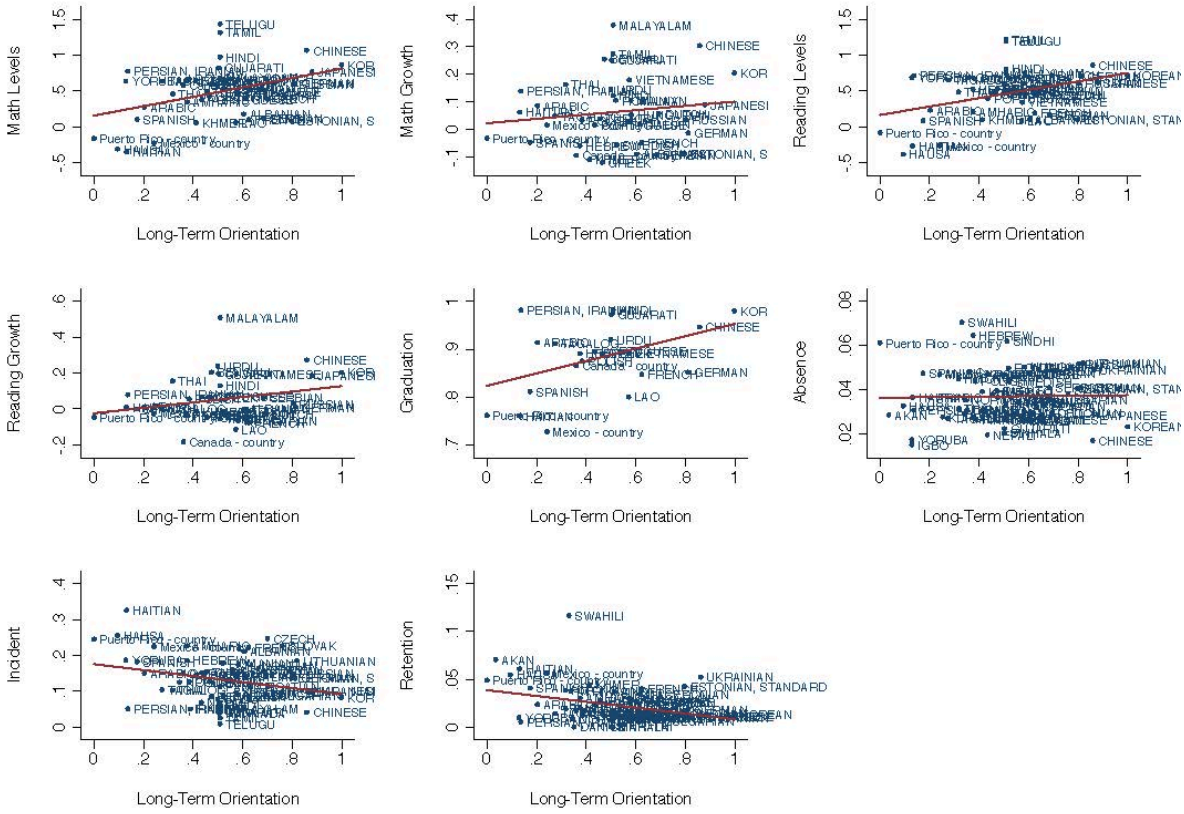
Note: Hofstede et al. (2010) LTO measure rescaled between 0 (short-term orientation) and 1 (long-term orientation). White areas indicate missing values.

Figure 2
Long-Term Orientation and educational outcomes, raw correlation, FLDOE
First generation immigrants



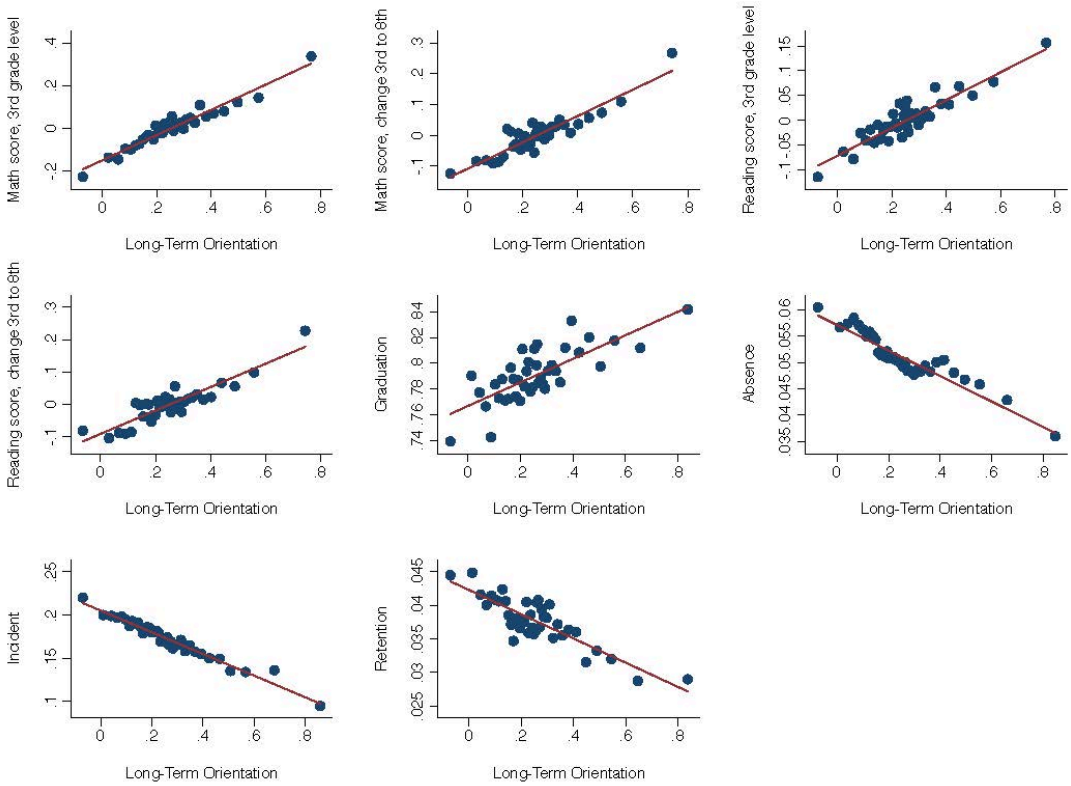
Note: Plots of various educational outcomes averaged by first-generation immigrants groups and LTO. Each educational outcome is described in Section 1.1.1. For purposes of confidentiality, we only show data points for immigrants groups where we observe at least 50 individuals.

Figure 3
Long-Term Orientation and educational outcomes, raw correlation, FLDOE
Second generation immigrants



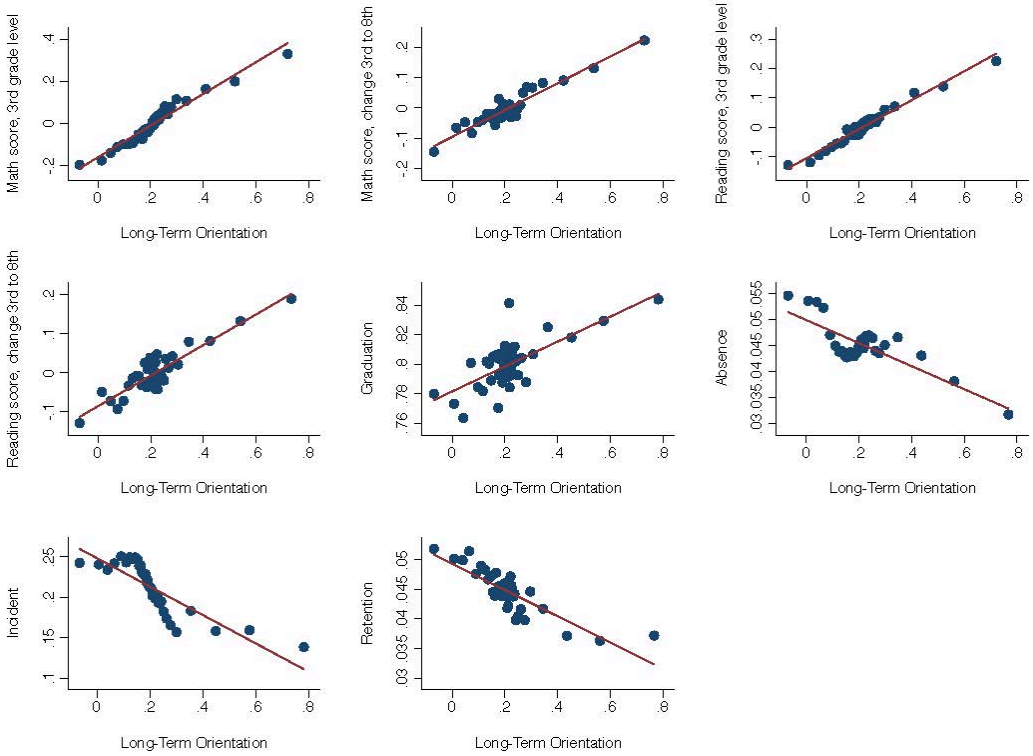
Note: Plots of various educational outcomes averaged by second-generation immigrants groups and LTO. Each educational outcome is described in Section 1.1.1. For purposes of confidentiality, we only show data points for immigrants groups(sharing the same languages) where we observe at least 50 individuals.

Figure 4
Long-Term Orientation and educational outcomes, bin-scatters, FLDOE
First generation immigrants



Note: Binned scatter-plots of the mean of different educational outcomes, described in Section 1.1.1, for first-generation students versus the mean level of LTO. To construct this figure, we divided the horizontal axis into 40 equal-sized (percentile) bins and plotted a given mean education outcome versus the mean level of LTO in each bin. Some bins are larger than others, due to the fact that several countries have a share of the immigrant population that is over 2.5 percent.

Figure 5
Long-Term Orientation and educational outcomes, bin-scatters, FLDOE
Second generation immigrants



Note: Binned scatter-plots of the mean of different educational outcomes, described in Section 1.1.1, for second-generation students versus the mean level of LTO. To construct this figure, we divided the horizontal axis into 40 equal-sized (percentile) bins and plotted a given mean education outcome versus the mean level of LTO in each bin. Some bins are larger than others, due to the fact that several countries have a share of the immigrant population that is over 2.5 percent.

Figure 6A
Long-Term Orientation and educational outcomes, FLDOE
Native, First and Second Generation immigrants

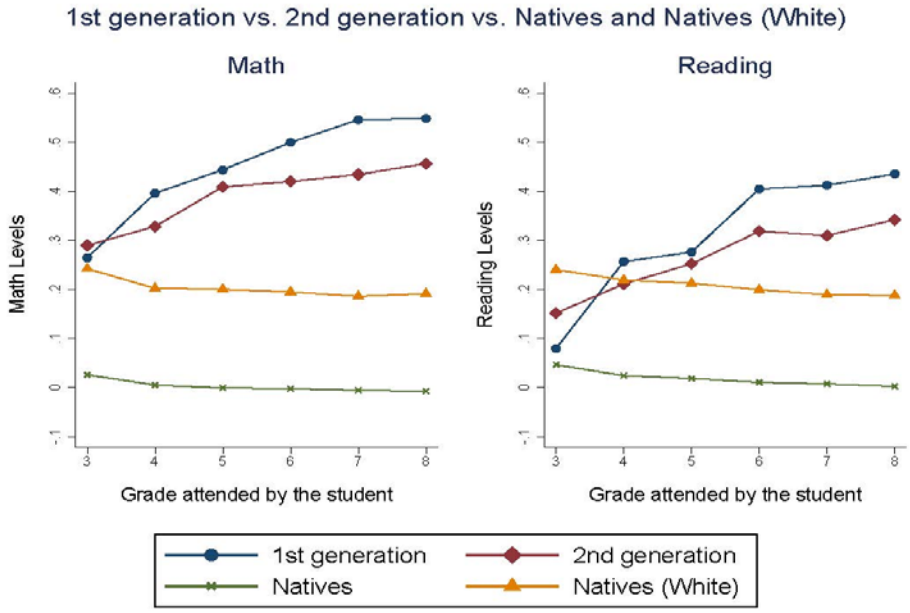
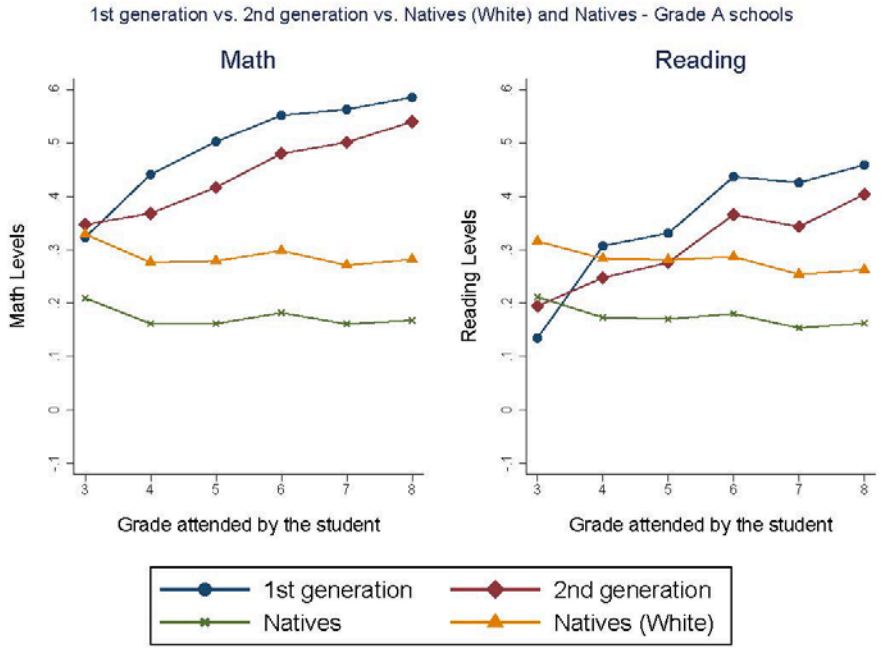
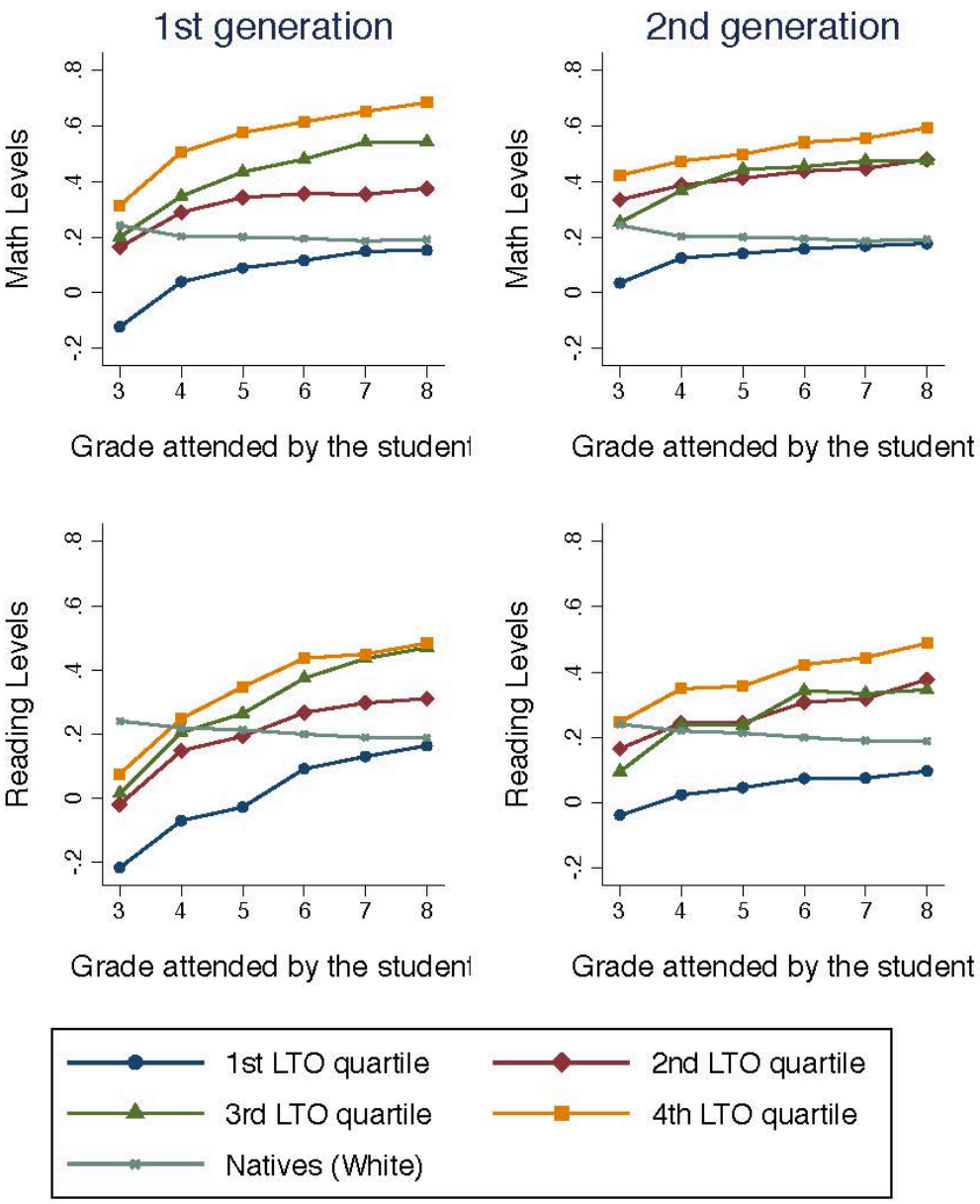


Figure 6B
Long-Term Orientation and educational outcomes, FLDOE
Native, First and Second generation immigrants, Grade A Schools



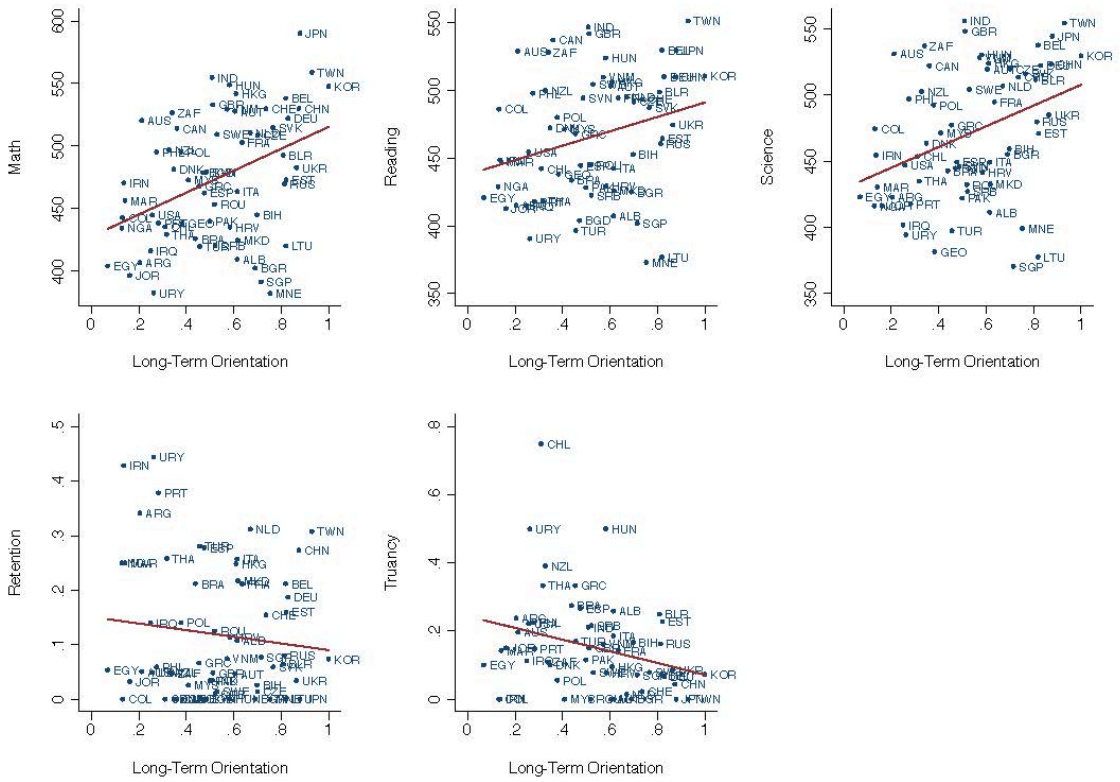
Note: Sub-sample of native, first-generation, and second-generation students observed in the data continuously from grade 3 to grade 8. In 6A, for each group (natives, natives-white, first-generation, and second-generation), math and reading scores are first averaged by grade and by country of origin (natives, natives-white, first-generation) or by grade and language spoken at home (second-generation). Then, for first and second-generation students, data are averaged again, so each subgroup of immigrants is weighted equally. In 6B, the analysis is repeated for grade A schools only.

Figure 7
Long-Term Orientation and educational outcomes, FLDOE
by Long-Term Orientation quartiles



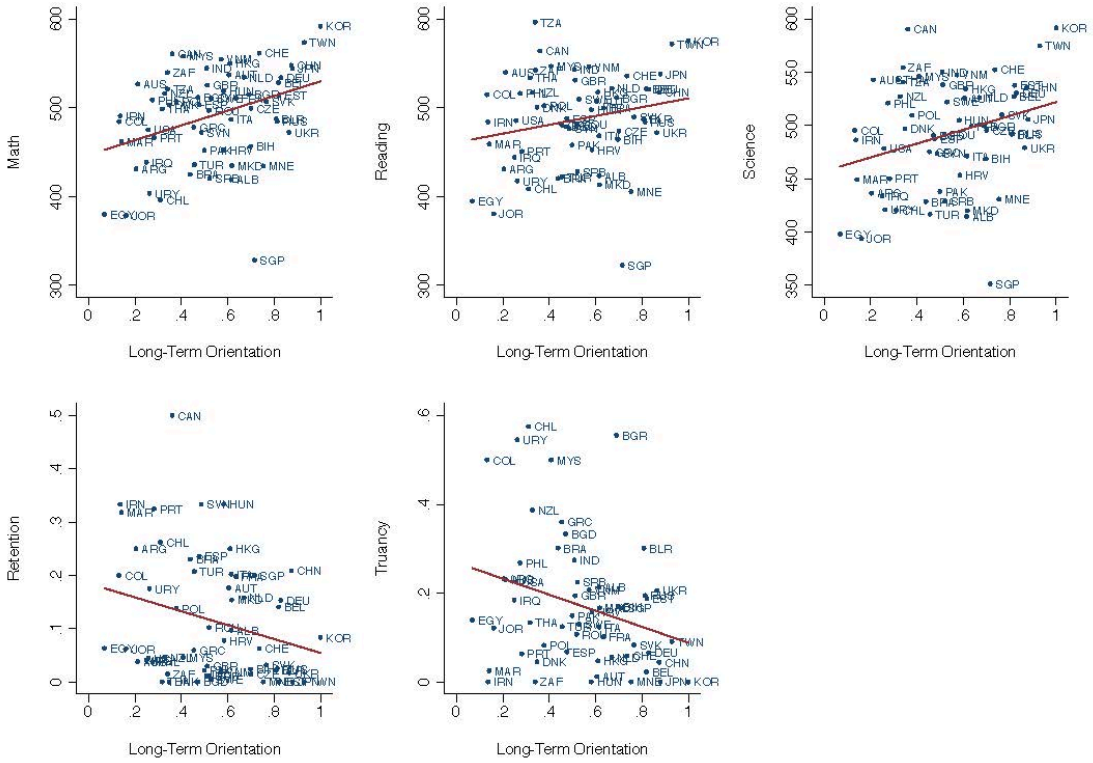
Note: Sub-sample of native-white, first-generation, and second-generation students observed in the data continuously from grade 3 to grade 8. For each group (natives-white, first-generation, and second-generation), math and reading scores are first averaged by grade and by country of origin (natives-white and first-generation) or by grade and language spoken at home (second-generation). Then, for first and second-generation students, data are averaged again by LTO quartile, so each subgroup of immigrants is weighted equally.

Figure 8
Long-Term Orientation and educational outcomes, raw correlations, PISA
First generation immigrants



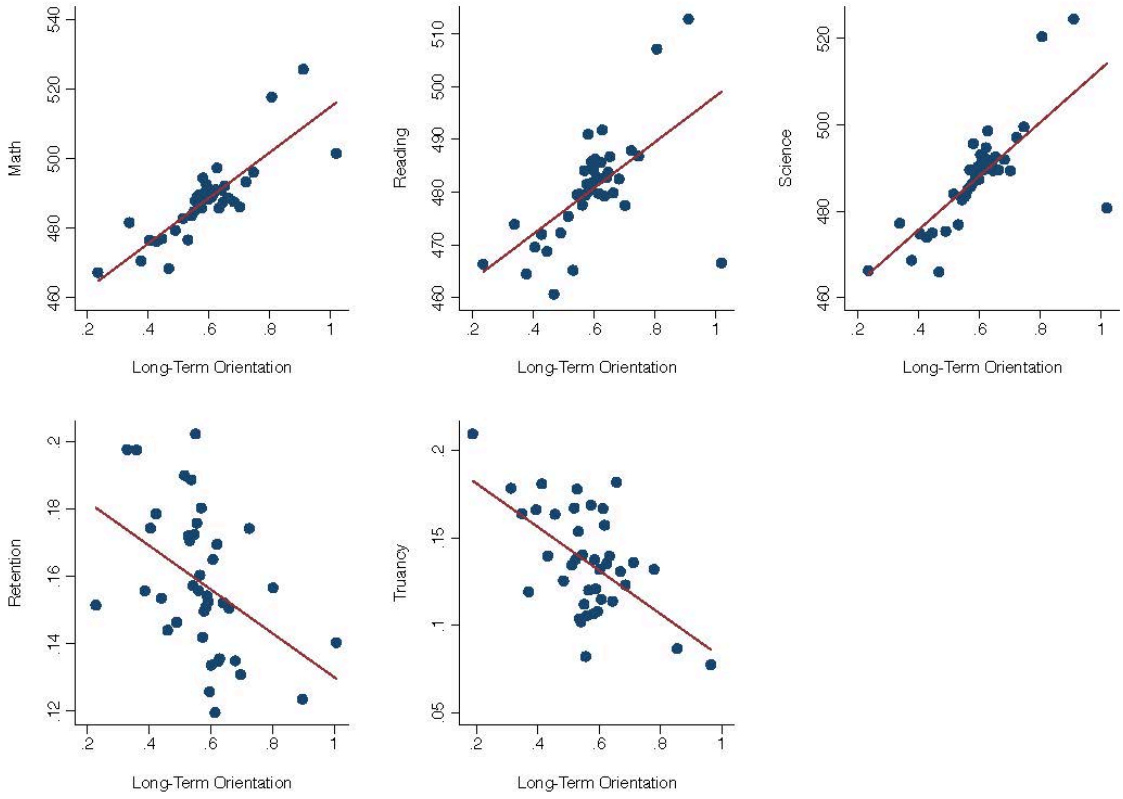
Note: Plots of various educational outcomes averaged by first-generation immigrants groups and LTO in PISA. Educational outcomes variables are described in Section 8.

Figure 9
Long-Term Orientation and educational outcomes, raw correlations, PISA
Second generation immigrants (maternal side)



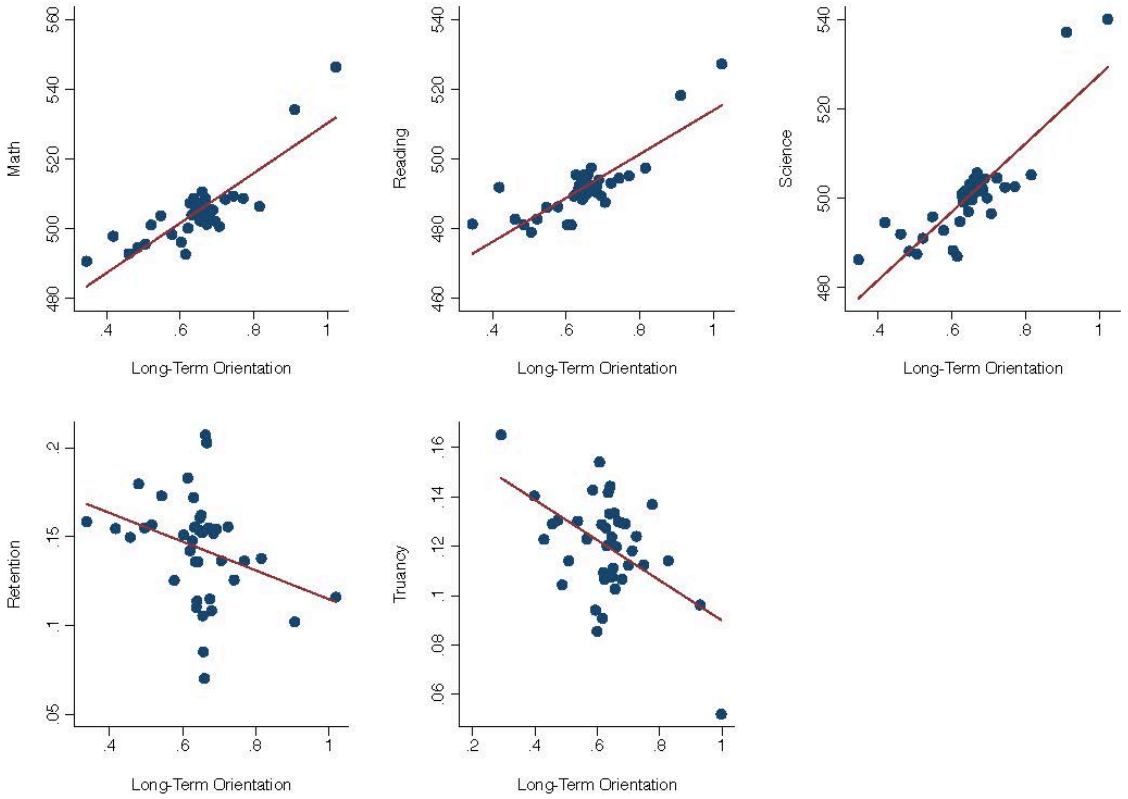
Note: Plots of various educational outcomes averaged by second-generation immigrants groups (defined using maternal place of birth) and LTO in PISA. Educational outcomes variables are described in Section 8.

Figure 10
Long-Term Orientation and educational outcomes, bin-scatters, PISA
First generation immigrants



Note: Binned scatter-plots of the mean of different educational outcomes (described in section 8) for first-generation students versus the mean level of LTO. To construct this figure, we divided the horizontal axis into 40 equal-sized (percentile) bins and plotted a given mean education outcome versus the mean level of LTO in each bin (using OLS regressions on the microdata).

Figure 11
Long-Term Orientation and educational outcomes, bin-scatters, PISA
Second generation immigrants (maternal side)



Note: Binned scatter-plots of the mean of different educational outcomes (described in Section 8) for second-generation students (using the place of birth of the mother) versus the mean level of LTO. To construct this figure, we divided the horizontal axis into 40 equal-sized (percentile) bins and plotted a given mean education outcome versus the mean level of LTO in each bin (using OLS regressions on the microdata).

Table 1
Descriptive statistics, Florida Department of Education Dataset

PANEL A

	1st generation			2nd generation (extended definition)			2nd generation		
	Obs.	Mean	St. dev.	Obs.	Mean	St. dev.	Obs.	Mean	St. dev.
Long-Term Orientation*	724,946	0.257	0.200	2,166,731	0.207	0.141	1,023,304	0.213	0.154
Math score, 3rd grade	69,652	0.000	1.000	305,382	0.000	1.000	160,763	0.000	1.000
Math score, change 3rd to 8th	28,046	0.000	0.783	107,053	0.000	0.775	55,880	0.000	0.773
Reading score, 3rd grade	69,600	0.000	1.000	305,358	0.000	1.000	160,756	0.000	1.000
Reading score, change 3rd to 8th	27,931	0.000	0.843	106,543	0.000	0.813	55,586	0.000	0.803
Graduation	24,067	0.791	0.407	57,130	0.769	0.421	25,684	0.800	0.400
% Absent Days	724,946	0.051	0.070	2,166,731	0.053	0.071	1,023,304	0.045	0.063
Disciplinary Incident	451,227	0.173	0.378	1,163,755	0.227	0.419	524,262	0.211	0.408
Retention	579,293	0.038	0.190	1,771,660	0.046	0.210	844,819	0.045	0.206
Male*	724,946	0.512	0.500	2,166,731	0.510	0.500	1,023,304	0.505	0.500
Age in months*	724,946	148.449	31.452	2,166,731	142.709	30.895	1,023,304	141.271	30.739
Special education*	724,946	0.080	0.271	2,166,731	0.143	0.350	1,023,304	0.136	0.343
Free or Reduced Priced Lunch*	724,946	0.610	0.488	2,166,731	0.709	0.454	1,023,304	0.725	0.446
Enrolled in Limited English proficiency program*	724,946	0.333	0.471	2,166,731	0.159	0.366	1,023,304	0.127	0.333
Enrolled in Limited English proficiency in grade 3	28,046	0.417	0.493	107,053	0.217	0.412	55,880	0.211	0.408
Mother high school graduate	-	-	-	184,331	0.340	0.474	-	-	-
Mother attended some college	-	-	-	184,331	0.173	0.378	-	-	-
Mother 4yr college graduate	-	-	-	184,331	0.136	0.342	-	-	-
Mother teen pregnancy	-	-	-	184,331	0.010	0.099	-	-	-
Mother married at time of birth	-	-	-	184,331	0.630	0.483	-	-	-
Number of older siblings	-	-	-	184,331	1.050	1.221	-	-	-
Median income in zipcode of birth (100,000 of $)	-	-	-	184,331	42,199	13,764	-	-	-

PANEL B

	1st generation + 2nd generation (extended definition)						
	Obs.	Mean	St. dev.		Obs.	Mean	St. dev.
Long-Term Orientation*	2,891,677	0.219	0.160	Education selection to Florida (Feliciano)*	2,813,769	0.432	0.186
Math score, 3rd grade	375,034	0	1	Education selection (Hanushek et al.)*	700,940	0.813	0.106
Math score, change 3rd to 8th	135,100	0	0.778	Mean PISA score in Math*	889,490	4.208	0.521
Reading score, 3rd grade	374,958	0	1	Trust*	2,807,150	0.193	0.086
Reading score, change 3rd to 8th	134,475	0	0.83	Hard work*	2,787,641	6.771	0.412
Graduation	81,197	0.776	0.417	Individualism/collectivism*	964,622	0.321	0.194
% Absent Days	2,891,677	0.052	0.071	Uncertainty avoidance*	964,622	0.718	0.184
Disciplinary Incident	1,614,982	0.212	0.409	Masculinity/femininity*	964,622	0.601	0.122
Retention	2,350,953	0.044	0.205	Indulgence/restraint*	2,801,558	0.758	0.189
Male*	2,891,677	0.511	0.500	Power distance	964,622	0.700	0.155
Age in months*	2,891,677	144.148	31.135	Fraction speaking the same language (log)*	384,139	-0.709	1.255
Special education*	2,891,677	0.127	0.333	Fraction of advanced classes	512,070	0.058	0.145
Free or Reduced Priced Lunch*	2,891,677	0.684	0.465	Fraction of advanced classes (scientific subjects)	512,070	0.013	0.054
Enrolled in Limited English proficiency program*	2,891,677	0.203	0.402	Math score, 8th grade	512,070	0.042	0.982
Enrolled in Limited English proficiency in grade 3	135,100	0.259	0.438	School Letter Score (from A to F) at t-1, (pre-) kindergarten	241,492	4.097	1.000
Log GDP pc year 2000 ppp*	2,813,769	3.138	0.504	School Letter Score (from A to F) at t-1, all grades	3,478,527	4.125	1.013
Distance from the US (log)*	2,813,769	8.274	0.467	Gifted in grade 4	26,308	0.112	0.316
Savings over GDP/100*	2,813,769	0.211	0.052	Futureless Language (Chen)*	2,780,956	0.021	0.145
				Maximum Crop Yield (Galor)*	373,220	8.593	2.298

Notes. The table reports sample statistics for the FLDOE sample and various country of origin level controls. All the variables, as well as the definitions of first and second generation immigrants are described in details in the text and the Online Appendix. The statistics marked with an asterisk (*) are calculated based on the sample used to run the regressions with the dependent variable "% Absent Days" (i.e., the specification where the largest sample is used). The statistics for the variable "Enrolled in Limited English proficiency in grade 3" are calculated based on the sample used to run the regression on the variable "Math score, change 3rd to 8th".

Table 2
Long-Term Orientation and school performance in mathematics, FLDOE
First generation immigrants

	Sample: 1st generation							
	Whole sample				Language restriction			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Math score, 3rd grade		Math score, change 3rd to 8th		Math score, 3rd grade		Math score, change 3rd to 8th	
Long-Term Orientation	**0.597*** **	**0.336*** **	**0.217** **	**0.217** **	**0.814*** **	**0.591*** **	**0.454*** **	**0.427*** **
	(0.136)	**(0.123)**	**(0.100)**	**(0.091)**	**(0.145)**	**(0.135)**	**(0.119)**	**(0.111)**
Male	0.081***	0.121***	-0.015	-0.003	0.078***	0.116***	-0.006	0.007
	(0.009)	(0.006)	(0.010)	(0.010)	(0.011)	(0.007)	(0.008)	(0.008)
Age in months	-0.016***	-0.005***	-0.020***	-0.017***	-0.014***	-0.004***	-0.020***	-0.017***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
Free or Reduced Priced Lunch		-0.202***		-0.069***		-0.191***		-0.068***
		(0.019)		(0.013)		(0.017)		(0.014)
Special education		-0.674***		-0.353***		-0.654***		-0.352***
		(0.029)		(0.022)		(0.030)		(0.023)
Enrolled in Limited English proficiency program		-0.660***				-0.671***		
		(0.026)				(0.026)		
Enrolled in Limited English proficiency in grade 3				0.120***				0.099***
				(0.020)				(0.019)
Math score, 3rd grade			-0.348***	-0.357***			-0.360***	-0.370***
			(0.015)	(0.017)			(0.014)	(0.016)
Observations	81,986	81,977	32,895	32,895	69,659	69,652	28,046	28,046
R-squared	0.337	0.441	0.386	0.399	0.353	0.458	0.405	0.417
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dependent Variable (sd)	1.000	1.000	0.779	0.779	1.000	1.000	0.783	0.783
Long-Term Orientation (mean)	0.307	0.307	0.304	0.304	0.255	0.255	0.254	0.254
Long-Term Orientation (sd)	0.241	0.241	0.236	0.236	0.192	0.192	0.190	0.190
Long-Term Orientation (beta)	0.144	0.081	0.066	0.066	0.156	0.113	0.110	0.103
N_clust	93	93	90	90	89	89	84	84

Notes. The table reports OLS estimates, with standard errors clustered at the country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. In columns 1-4, the sample includes first generation immigrants defined using the information on the country of origin. In columns 5-8, the sample includes first generation immigrants defined using both the information on the country of origin and the language spoken at home (see online Appendix for details). The dependent variables are: students' Florida Comprehensive Assessment Test math score in grade 3 (standardized with mean 0 and variance 1) and the change in math score from grade 3 to grade 8. Individual controls are: age in months, a male dummy, an indicator variable for free or reduced free lunch eligibility, a dummy indicating if the student is enrolled in a limited English proficiency program and indicator for special education needs. Columns 3-4, 7-8 also control for the math score in grade 3. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 3
Long-Term Orientation and additional educational outcomes, FLDOE
First generation immigrants

VARIABLES	(1) Reading score, 3rd grade	(2) Reading score, change 3rd to 8th	(3) Graduation	(4) % Absent Days	(5) Disciplinary Incident	(6) Retention
Long-Term Orientation	**0.281*** **	**0.362*** **	**0.092*** **	**-0.024*** **	**-0.125*** **	**-0.018*** **
	(0.086)	**(0.116)**	**(0.031)**	**(0.008)**	**(0.023)**	**(0.006)**
Male	-0.055***	-0.042***	-0.033***	-0.002***	0.090***	0.011***
	(0.007)	(0.011)	(0.004)	(0.000)	(0.006)	(0.001)
Age in months	-0.005***	-0.012***	-0.004***	0.001***	0.005***	-0.000***
	(0.001)	(0.002)	(0.001)	(0.000)	(0.000)	(0.000)
Free or Reduced Priced Lunch	-0.200***	-0.109***	0.002	-0.003	0.039***	0.005***
	(0.016)	(0.017)	(0.009)	(0.002)	(0.005)	(0.001)
Special education	-0.676***	-0.436***	-0.203***	0.009***	0.059***	0.032***
	(0.018)	(0.029)	(0.023)	(0.002)	(0.003)	(0.005)
Enrolled in Limited English proficiency program	-0.839***		-0.393***	0.007***	0.010**	0.035***
	(0.022)		(0.015)	(0.001)	(0.005)	(0.003)
Enrolled in Limited English proficiency in grade 3		0.035				
		(0.023)				
Reading score, 3rd grade		-0.446***				
		(0.016)				
Observations	69,600	27,931	24,067	724,946	451,227	579,293
R-squared	0.473	0.426	0.383	0.185	0.123	0.114
Year*school FE	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.791	0.051	0.173	0.038
Dependent Variable (sd)	1.000	0.843	0.407	0.070	0.378	0.190
Long-Term Orientation (mean)	0.255	0.254	0.262	0.257	0.259	0.256
Long-Term Orientation (sd)	0.192	0.189	0.203	0.200	0.202	0.197
Long-Term Orientation (beta)	0.054	0.081	0.046	-0.069	-0.067	-0.019
N_clust	89	84	88	92	92	92

Notes. The table reports OLS estimates, with standard errors clustered at the country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes first generation immigrants defined using the information on the country of origin and the language spoken at home. The dependent variables are: students' Florida Comprehensive Assessment Test reading score in grade 3 (standardized with mean 0 and variance 1), the change in reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year) and retention (an indicator for whether the student repeats the same grade at least once) measured in grades 3-12, and disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident defined as serious offences often leading to suspension) measured in grades 6-12. Individual controls are the same as in Table 2. In column 2 we also control for the reading score in grade 3. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 4
Long-Term Orientation and educational performance, FLDOE
Second generation immigrants

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Long-Term Orientation	**0.752*** **	**0.441*** **	**0.494*** **	**0.390*** **	**0.084*** **	**-0.022** **	**-0.175*** **	**-0.022*** **
	(0.131)	**(0.109)**	**(0.078)**	**(0.090)**	**(0.009)**	**(0.009)**	**(0.046)**	**(0.005)**
Male	0.127***	-0.031***	-0.068***	-0.051***	-0.049***	-0.000	0.093***	0.014***
	(0.024)	(0.008)	(0.017)	(0.010)	(0.004)	(0.000)	(0.006)	(0.002)
Age in months	-0.012***	-0.018***	-0.014***	-0.013***	-0.006***	0.001***	0.007***	-0.001***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Free or Reduced Priced Lunch	-0.241***	-0.056***	-0.245***	-0.090***	-0.008	0.001	0.048***	0.009***
	(0.014)	(0.013)	(0.014)	(0.013)	(0.007)	(0.002)	(0.006)	(0.001)
Special education	-0.650***	-0.234***	-0.739***	-0.183***	-0.161***	0.006***	0.027***	0.033***
	(0.027)	(0.009)	(0.023)	(0.012)	(0.003)	(0.000)	(0.003)	(0.001)
Enrolled in Limited English proficiency program	-0.657***		-0.727***		-0.304***	0.004***	0.043***	0.069***
	(0.019)		(0.029)		(0.019)	(0.001)	(0.006)	(0.004)
Enrolled in Limited English proficiency in grade 3		-0.029**		-0.127***				
		(0.014)		(0.015)				
Math score, 3rd grade		-0.364***						
		(0.010)						
Reading score, 3rd grade				-0.414***				
				(0.009)				
Observations	160,763	55,880	160,756	55,586	25,684	1,023,304	524,262	844,819
R-squared	0.372	0.344	0.386	0.325	0.345	0.224	0.140	0.116
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.800	0.045	0.211	0.045
Dependent Variable (sd)	1.000	0.773	1.000	0.803	0.400	0.063	0.408	0.206
Long-Term Orientation (mean)	0.215	0.218	0.215	0.218	0.216	0.213	0.213	0.213
Long-Term Orientation (sd)	0.153	0.160	0.153	0.160	0.159	0.154	0.156	0.154
Long-Term Orientation (beta)	0.115	0.091	0.076	0.078	0.034	-0.054	-0.067	-0.017
N_clust	88	79	88	79	65	88	82	88

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. See details in the text and the appendix for how the matching between language and countries has been implemented. The dependent variables are: students' Florida Comprehensive Assessment Test math score in grade 3 (standardized with mean 0 and variance 1), change in math score from grade 3 to grade 8, reading score in grade 3 (standardized with mean 0 and variance 1), change in reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering 9th grade for the first time), high school graduation (a dummy for whether the student received a standard diploma within four years after entering 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year) disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident defined as serious offences often leading to suspension) measured in grades 6-12, and retention (an indicator for whether the student repeats the same grade at least once) measured in grades 3-12,. Individual controls are the same as in Table 2. Columns 2 and 4 also control for the math score and reading score in grade 3, respectively. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 5
Long-Term Orientation and educational performance, FLDOE
Second generation immigrants, extended definition

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Long-Term Orientation	**0.769*** **	**0.494*** **	**0.502*** **	**0.447*** **	**0.127*** **	**-0.026*** **	**-0.178*** **	**-0.025*** **
	(0.120)	**(0.100)**	**(0.059)**	**(0.087)**	**(0.019)**	**(0.008)**	**(0.037)**	**(0.003)**
Male	0.134***	-0.024***	-0.062***	-0.048***	-0.043***	-0.001***	0.096***	0.014***
	(0.017)	(0.007)	(0.013)	(0.004)	(0.001)	(0.000)	(0.002)	(0.001)
Age in months	-0.012***	-0.019***	-0.013***	-0.014***	-0.006***	0.001***	0.007***	-0.000***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Free or Reduced Priced Lunch	-0.240***	-0.064***	-0.250***	-0.094***	-0.014***	0.002	0.056***	0.010***
	(0.010)	(0.009)	(0.008)	(0.008)	(0.005)	(0.002)	(0.004)	(0.001)
Special education	-0.662***	-0.265***	-0.753***	-0.207***	-0.188***	0.007***	0.035***	0.032***
	(0.017)	(0.008)	(0.020)	(0.007)	(0.006)	(0.000)	(0.002)	(0.001)
Enrolled in Limited English proficiency program	-0.633***		-0.709***		-0.322***	0.007***	0.038***	0.052***
	(0.005)		(0.013)		(0.005)	(0.001)	(0.004)	(0.003)
Enrolled in Limited English proficiency in grade 3		0.017		-0.076***				
		(0.018)		(0.018)				
Math score, 3rd grade		-0.370***						
		(0.007)						
Reading score, 3rd grade				-0.422***				
				(0.005)				
Observations	305,382	107,053	305,358	106,543	57,130	2,166,731	1,163,755	1,771,660
R-squared	0.342	0.310	0.354	0.292	0.344	0.204	0.129	0.094
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.769	0.053	0.227	0.046
Dependent Variable (sd)	1.000	0.775	1.000	0.813	0.421	0.071	0.419	0.210
Long-Term Orientation (mean)	0.209	0.211	0.209	0.211	0.208	0.207	0.206	0.206
Long-Term Orientation (sd)	0.144	0.147	0.144	0.147	0.142	0.141	0.141	0.141
Long-Term Orientation (beta)	0.111	0.094	0.072	0.081	0.043	-0.052	-0.060	-0.017
N_clust	93	85	93	85	83	96	92	95

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. See details in the text and the appendix for how the matching between language and countries has been implemented. The dependent variables measure students' Florida Comprehensive Assessment Test math score in grade 3 (standardized with mean 0 and variance 1), the change in math score from grade 3 to grade 8, reading score in grade 3 (standardized with mean 0 and variance 1), change in reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year), disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident, defined as serious offences often leading to suspension), and retention (an indicator for whether the student repeats the same grade at least once). Individual controls are the same as in Table 2. Columns 2 and 4 also control for the math score and reading score in grade 3, respectively. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 6
Long-Term Orientation and educational performance, controlling for maternal characteristics, FLDOE
Second generation immigrants, extended definition

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES			Math score, 3rd grade			
Long-Term Orientation	**0.734*** **	**0.757*** **	**0.720*** **	**0.757*** **	**0.750*** **	**0.697*** **
	(0.128)	**(0.125)**	**(0.123)**	**(0.123)**	**(0.122)**	**(0.124)**
Mother high school graduate	0.107***					0.083***
	(0.021)					(0.020)
Mother attended some college	0.206***					0.170***
	(0.022)					(0.020)
Mother 4yr college graduate	0.385***					0.337***
	(0.017)					(0.015)
Mother teen pregnancy		-0.132***				-0.070***
		(0.019)				(0.024)
Mother married at time of birth			0.128***			0.102***
			(0.011)			(0.007)
Number of older siblings				-0.027***		-0.028***
				(0.003)		(0.004)
Median income in zipcode of birth (100,000 of $)					0.297***	0.173***
					(0.028)	(0.026)
Observations	206,143	207,509	207,531	204,971	185,595	184,331
R-squared	0.361	0.352	0.355	0.353	0.357	0.368
Year*school FE	YES	YES	YES	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.000	0.000
Dependent Variable (sd)	1.000	1.000	1.000	1.000	1.000	1.000
Long-Term Orientation (mean)	0.207	0.207	0.207	0.207	0.207	0.207
Long-Term Orientation (sd)	0.141	0.141	0.141	0.141	0.143	0.143
Long-Term Orientation (beta)	0.104	0.107	0.102	0.107	0.107	0.100
N_clust	91	91	91	91	90	90

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. See details in the text and the appendix for how the matching between language and countries has been implemented. The dependent variable measures students' Florida Comprehensive Assessment Test math score in grade 3 (standardized with mean 0 and variance 1). All the regressions include the same individual controls described in Table 2 (coefficients not reported). Maternal controls include education dummies (high school, some college and college graduate; the excluded group is college drop-out), whether the mother was younger than 16 when she gave birth, the mother's marital status at time of birth, the number of older siblings, and the median income in the zip code of the place of residence at time of birth (measured in 1999). The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 7
Long-Term Orientation and educational performance, FLDOE
First and second generation immigrants (extended definition) pooled

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Long-Term Orientation	**0.747*** **	**0.485*** **	**0.455*** **	**0.451*** **	**0.115*** **	**-0.026*** **	**-0.170*** **	**-0.024*** **
	(0.094)	**(0.087)**	**(0.051)**	**(0.087)**	**(0.019)**	**(0.006)**	**(0.027)**	**(0.004)**
Male	0.132***	-0.017***	-0.059***	-0.046***	-0.040***	-0.001***	0.094***	0.013***
	(0.013)	(0.006)	(0.010)	(0.005)	(0.003)	(0.000)	(0.002)	(0.001)
Age in months	-0.010***	-0.018***	-0.012***	-0.013***	-0.006***	0.001***	0.006***	-0.000***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Free or Reduced Priced Lunch	-0.233***	-0.068***	-0.242***	-0.105***	-0.010*	0.001	0.053***	0.009***
	(0.009)	(0.009)	(0.007)	(0.010)	(0.005)	(0.002)	(0.004)	(0.001)
Special education	-0.669***	-0.294***	-0.738***	-0.278***	-0.193***	0.008***	0.046***	0.034***
	(0.014)	(0.016)	(0.016)	(0.039)	(0.006)	(0.000)	(0.005)	(0.001)
Enrolled in Limited English proficiency program	-0.623***		-0.736***		-0.349***	0.006***	0.009	0.043***
	(0.013)		(0.027)		(0.018)	(0.001)	(0.010)	(0.003)
Enrolled in Limited English proficiency in grade 3		0.081***		0.015				
		(0.023)		(0.034)				
Math score, 3rd grade		-0.371***						
		(0.007)						
Reading score, 3rd grade				-0.433***				
				(0.014)				
Observations	375,034	135,100	374,958	134,475	81,197	2,891,677	1,614,982	2,350,953
R-squared	0.340	0.304	0.352	0.295	0.338	0.189	0.122	0.086
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.776	0.052	0.212	0.044
Dependent Variable (sd)	1.000	0.778	1.000	0.828	0.417	0.071	0.409	0.205
Long-Term Orientation (mean)	0.218	0.220	0.218	0.220	0.224	0.219	0.221	0.218
Long-Term Orientation (sd)	0.155	0.158	0.155	0.158	0.164	0.160	0.162	0.158
Long-Term Orientation (beta)	0.116	0.098	0.070	0.086	0.045	-0.058	-0.067	-0.019
N_clust	181	169	181	169	171	187	183	186

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes the pooled sample of first generation (defined using both the information on the country of origin and the language spoken at home) and second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. The dependent variables measure students' Florida Comprehensive Assessment Test math score in grade 3 (standardized with mean 0 and variance 1), the change in math score from grade 3 to grade 8, reading score in grade 3 (standardized with mean 0 and variance 1), change in reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year), disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident, defined as serious offences often leading to suspension), and retention (an indicator for whether the student repeats the same grade at least once). Individual controls are the same as in Table 2. Columns 2 and 4 also control for the math score and reading score in grade 3, respectively. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 8
Long-Term Orientation and performance in mathematics, controlling for other country of origin characteristics, FLDOE
First and second generation immigrants (extended definition) pooled

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	Math score, 3rd grade						Math score, change 3rd to 8th					
Long-Term Orientation	**0.702*** **	**0.570*** **	**0.733*** **	**0.827*** **	**0.463*** **	**0.401*** **	**0.444*** **	**0.380*** **	**0.475*** **	**0.547*** **	**0.382*** **	**0.340*** **
	(0.093)	**(0.129)**	**(0.086)**	**(0.095)**	**(0.132)**	**(0.138)**	**(0.081)**	**(0.093)**	**(0.082)**	**(0.084)**	**(0.126)**	**(0.111)**
Log GDP pc year 2000 ppp	-0.095***					-0.091***	-0.087***					-0.131***
	(0.028)					(0.023)	(0.021)					(0.026)
Distance from the US (log)		0.111**				-0.041*		0.067***				-0.030
		(0.056)				(0.021)		(0.021)				(0.019)
Savings over GDP/100			0.280			-0.151			0.173			0.174
			(0.327)			(0.192)			(0.256)			(0.143)
Education selection to Florida				0.168*		0.324***				0.145**		0.111
				(0.091)		(0.064)				(0.069)		(0.075)
Mean PISA score in Math					-0.026	0.071					-0.050	0.027
					(0.043)	(0.044)					(0.042)	(0.046)
Observations	374,098	375,034	374,159	364,150	109,334	108,379	134,879	135,100	134,736	131,125	40,560	40,214
R-squared	0.342	0.342	0.340	0.342	0.417	0.422	0.307	0.305	0.304	0.308	0.385	0.392
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dependent Variable (sd)	1.000	1.000	1.000	1.000	1.000	1.000	0.778	0.778	0.778	0.779	0.773	0.773
Long-Term Orientation (mean)	0.216	0.218	0.217	0.209	0.313	0.309	0.219	0.220	0.219	0.211	0.309	0.305
Long-Term Orientation (sd)	0.153	0.155	0.154	0.144	0.169	0.164	0.157	0.158	0.157	0.147	0.174	0.169
Long-Term Orientation (beta)	0.108	0.088	0.113	0.119	0.078	0.066	0.090	0.077	0.096	0.103	0.086	0.074
N_clust	178	181	178	147	109	95	167	169	166	139	103	93

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes the pooled sample of first generation (defined using both the information on the country of origin and the language spoken at home) and second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. See details in the text and the appendix for how the matching between language and countries has been implemented. The dependent variable measures students' Florida Comprehensive Assessment Test math score in grade 3 (standardized with mean 0 and variance 1) and the change in math score from grade 3 to grade 8. All the regressions include the same individual controls described in Table 2 (coefficients not reported). The additional country-controls are described in the online Appendix. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables on the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 9
Long-Term Orientation and educational outcomes, controlling for other country of origin characteristics, FLDOE
First and second generation immigrants (extended definition) pooled

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to	(3) Reading score, 3rd	(4) Reading score, change 3rd to	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Long-Term Orientation	**0.670*** **	**0.468*** **	**0.430*** **	**0.436*** **	**0.106*** **	**-0.035*** **	**-0.132*** **	**-0.020*** **
	(0.112)	**(0.081)**	**(0.084)**	**(0.095)**	**(0.025)**	**(0.008)**	**(0.031)**	**(0.005)**
Log GDP pc year 2000 ppp	-0.067***	-0.088***	-0.007	-0.079***	-0.001	0.010***	0.025***	0.001
	(0.024)	(0.023)	(0.017)	(0.028)	(0.005)	(0.002)	(0.006)	(0.001)
Distance from the US (log)	0.048	-0.000	0.012	-0.001	-0.004	0.008**	-0.024	-0.002
	(0.059)	(0.024)	(0.044)	(0.030)	(0.007)	(0.004)	(0.019)	(0.002)
Savings over GDP/100	0.651**	0.474*	0.280	0.301	0.028	0.021	-0.175*	-0.012
	(0.314)	(0.254)	(0.209)	(0.412)	(0.052)	(0.020)	(0.092)	(0.021)
Education selection to Florida	0.077	0.032	0.197***	0.084	0.093***	0.005	0.044	-0.015***
	(0.084)	(0.060)	(0.061)	(0.107)	(0.019)	(0.007)	(0.034)	(0.005)
Observations	364,147	131,125	364,079	130,516	79,075	2,813,769	1,572,767	2,287,683
R-squared	0.343	0.310	0.353	0.301	0.339	0.194	0.124	0.087
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.773	0.053	0.213	0.044
Dependent Variable (sd)	1.000	0.779	1.000	0.830	0.419	0.071	0.409	0.206
Long-Term Orientation (mean)	0.209	0.211	0.209	0.211	0.217	0.212	0.213	0.211
Long-Term Orientation (sd)	0.144	0.147	0.144	0.147	0.156	0.150	0.153	0.149
Long-Term Orientation (beta)	0.096	0.088	0.062	0.077	0.040	-0.075	-0.050	-0.014
Altonjii ratio	3.53	4.39	5.42	4.41	8.55	-5.04	2.18	2.97
N_clust	146	139	146	139	140	148	145	147

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes the pooled sample of first generation (defined using both the information on the country of origin and the language spoken at home) and second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. The dependent variables include: students' Florida Comprehensive Assessment Test math and reading score in grade 3 (standardized with mean 0 and variance 1), the change in math and reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year) and retention (an indicator for whether the student repeats the same grade at least once) measured in grades 3-12, and disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident defined as serious offences often leading to suspension) measured in grades 6-12. All the regressions include the same individual controls described in Table 2 (coefficients not reported). The country controls are described in the appendix. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. The additional country-controls and all the remaining variables are described in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 10
Long-Term Orientation and educational performance, robustness to sample selection, FLDOE

PANEL A: 1st generation + 2ndplus generation (extended definition), exclusion of Latin America

	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Long-Term Orientation	**0.458*** **	**0.385*** **	**0.243* **	**0.367*** **	**0.036** **	**-0.014**	**-0.067* **	**-0.003**
	(0.169)	**(0.133)**	**(0.124)**	**(0.122)**	**(0.016)**	**(0.010)**	**(0.036)**	**(0.003)**
Observations	50,814	19,459	50,786	19,397	13,287	420,633	244,772	338,169
R-squared	0.448	0.463	0.455	0.458	0.365	0.169	0.127	0.134
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.883	0.039	0.123	0.022
Dependent Variable (sd)	1.000	0.766	1.000	0.837	0.322	0.063	0.328	0.146
Long-Term Orientation (mean)	0.518	0.518	0.518	0.518	0.513	0.517	0.517	0.516
Long-Term Orientation (sd)	0.210	0.209	0.210	0.209	0.206	0.211	0.210	0.209
Long-Term Orientation (beta)	0.096	0.105	0.051	0.092	0.023	-0.046	-0.043	-0.005
N_clust	82	77	82	77	79	84	84	84

PANEL B: 1st generation + 2ndplus generation (extended definition), exclusion of Asia

	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Long-Term Orientation	**0.532*** **	**0.247*** **	**0.385*** **	**0.267*** **	**0.079*** **	**-0.012**	**-0.114*** **	**-0.022*** **
	(0.103)	**(0.075)**	**(0.064)**	**(0.091)**	**(0.020)**	**(0.008)**	**(0.035)**	**(0.004)**
Observations	347,049	124,578	346,991	123,998	74,356	2,666,557	1,485,783	2,170,681
R-squared	0.325	0.300	0.345	0.292	0.338	0.192	0.121	0.088
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.765	0.054	0.222	0.046
Dependent Variable (sd)	1.000	0.792	1.000	0.835	0.424	0.072	0.416	0.209
Long-Term Orientation (mean)	0.194	0.195	0.194	0.195	0.197	0.194	0.195	0.194
Long-Term Orientation (sd)	0.119	0.121	0.119	0.121	0.126	0.123	0.125	0.122
Long-Term Orientation (beta)	0.063	0.038	0.046	0.039	0.024	-0.021	-0.034	-0.013
N_clust	68	63	68	63	65	70	70	70

Table 10-continued
Long-Term Orientation and educational performance, robustness to sample selection, FLDOE

	PANEL C: 1st generation + 2ndplus generation (extended definition), inclusion of continent FE							
	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Long-Term Orientation	**0.700*** **	**0.434*** **	**0.419*** **	**0.433*** **	**0.053** **	**-0.020** **	**-0.148*** **	**-0.014** **
	(0.096)	**(0.081)**	**(0.084)**	**(0.086)**	**(0.022)**	**(0.009)**	**(0.038)**	**(0.005)**
Observations	375,034	135,100	374,958	134,475	81,197	2,891,677	1,614,982	2,350,953
R-squared	0.343	0.307	0.352	0.296	0.339	0.190	0.124	0.086
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Continent FE	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.776	0.052	0.212	0.044
Dependent Variable (sd)	1.000	0.778	1.000	0.828	0.417	0.071	0.409	0.205
Long-Term Orientation (mean)	0.218	0.220	0.218	0.220	0.224	0.219	0.221	0.218
Long-Term Orientation (sd)	0.155	0.158	0.155	0.158	0.164	0.160	0.162	0.158
Long-Term Orientation (beta)	0.108	0.088	0.065	0.083	0.021	-0.045	-0.059	-0.011
N_clust	95	90	95	90	92	97	97	97

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample pools together first generation immigrants defined using the information on both the country of origin and the language spoken at home, and second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. See details in the text and the appendix for how the matching between language and countries has been implemented. Panel A and Panel D include the overall sample. Panel B excludes immigrants from Central and Latin America. Panel C excludes immigrants from Asia. The dependent variables are: students' Florida Comprehensive Assessment Test math score in grade 3 (standardized with mean 0 and variance 1), the change in math score from grade 3 to grade 8, reading score in grade 3 (standardized with mean 0 and variance 1), change in reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year), disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident, defined as serious offences often leading to suspension), and retention (an indicator for whether the student repeats the same grade at least once). All regressions include the same individual controls described in Table 2 (coefficients not reported). Panel D also includes continent fixed effects. Columns 2 and 4 also control for the math score and reading score in grade 3, respectively. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 11
Educational performance and alternative measures of Long-Term Orientation, FLDOE

PANEL A: 1st generation + 2nd generation (extended definition)

	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Futureless Language (Chen)	**0.443*** **	**0.327*** **	**0.271*** **	**0.279*** **	**0.058*** **	**-0.017*** **	**-0.081*** **	**-0.010*** **
	(0.116)	**(0.105)**	**(0.054)**	**(0.092)**	**(0.016)**	**(0.006)**	**(0.024)**	**(0.002)**
Observations	354,502	128,372	354,419	127,793	79,456	2,780,956	1,566,300	2,253,450
R-squared	0.340	0.302	0.357	0.295	0.337	0.183	0.117	0.084
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.783	0.053	0.201	0.042
Dependent Variable (sd)	1.000	0.774	1.000	0.826	0.412	0.071	0.401	0.200
Futureless Language (mean)	0.021	0.022	0.021	0.022	0.022	0.021	0.022	0.021
Futureless Language (sd)	0.142	0.147	0.142	0.147	0.146	0.145	0.146	0.143
Futureless Language (beta)	0.063	0.062	0.039	0.050	0.020	-0.035	-0.030	-0.007
N_clust	81	74	81	74	71	86	84	85

PANEL B: 1st generation

	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Futureless Language (Chen)	**0.310*** **	**0.264*** **	**0.130*** **	**0.193*** **	**0.001**	**-0.005* **	**-0.042*** **	**-0.003** **
	(0.045)	**(0.098)**	**(0.024)**	**(0.061)**	**(0.018)**	**(0.003)**	**(0.008)**	**(0.002)**
Observations	81,369	32,670	81,319	32,553	27,980	838,059	521,296	668,646
R-squared	0.458	0.413	0.473	0.422	0.384	0.188	0.125	0.108
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.803	0.050	0.169	0.036
Dependent Variable (sd)	1.000	0.779	1.000	0.842	0.398	0.070	0.375	0.185
Futureless Language (mean)	0.025	0.023	0.025	0.023	0.027	0.028	0.029	0.026
Futureless Language (sd)	0.156	0.151	0.156	0.150	0.161	0.164	0.167	0.159
Futureless Language (beta)	0.048	0.051	0.020	0.034	0.000	-0.012	-0.019	-0.003
N_clust	78	71	78	71	69	85	82	83

Table 11-continued
Educational performance and alternative measures of Long-Term Orientation, FLDOE

PANEL C: 1st generation + 2nd generation (extended definition), excluding the Americas								
	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Maximum Crop Yield (Galor)	**0.042*** **	**0.030*** **	**0.025*** **	**0.031*** **	**0.004** **	**-0.002*** **	**-0.010*** **	**-0.000**
	(0.010)	**(0.008)**	**(0.008)**	**(0.008)**	**(0.002)**	**(0.001)**	**(0.002)**	**(0.000)**
Observations	45,262	17,062	45,238	17,001	11,552	373,220	216,428	298,977
R-squared	0.464	0.474	0.470	0.469	0.375	0.178	0.131	0.141
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.883	0.038	0.120	0.022
Dependent Variable (sd)	1.000	0.764	1.000	0.834	0.321	0.062	0.325	0.147
Maximum Crop Yield (mean)	8.601	8.610	8.602	8.607	8.593	8.593	8.588	8.592
Maximum Crop Yield (sd)	2.298	2.261	2.298	2.263	2.262	2.298	2.283	2.281
Maximum Crop Yield (beta)	0.097	0.089	0.058	0.085	0.029	-0.089	-0.067	-0.004
N_clust	81	76	81	76	78	83	83	83

PANEL D: 1st generation + 2nd generation (extended definition)								
	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Thrift (WVS)	**0.657*** **	**0.388*** **	**0.351*** **	**0.381*** **	**0.062*** **	**-0.006**	**-0.187*** **	**-0.019*** **
	(0.066)	**(0.085)**	**(0.045)**	**(0.082)**	**(0.021)**	**(0.014)**	**(0.030)**	**(0.004)**
Observations	374,044	134,779	373,969	134,154	81,027	2,885,058	1,611,511	2,345,697
R-squared	0.339	0.303	0.350	0.294	0.337	0.186	0.124	0.086
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.775	0.052	0.212	0.044
Dependent Variable (sd)	1.000	0.778	1.000	0.829	0.417	0.071	0.409	0.205
Thrift (mean)	0.388	0.390	0.388	0.390	0.393	0.390	0.391	0.389
Thrift (sd)	0.180	0.182	0.180	0.182	0.187	0.183	0.185	0.183
Thrift (beta)	0.118	0.091	0.063	0.084	0.028	-0.017	-0.084	-0.017
N_clust	175	163	175	163	165	181	177	180

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. In Panel A and Panel D the sample pools together first generation immigrants defined using the information on both the country of origin and the language spoken at home and second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. See details in the text and the appendix for how the matching between language and countries has been implemented. In Panel B the sample includes first generation immigrants defined using the information on the country of origin. Panel C is equal to the sample in Panel A with the exclusion of the immigrants from the American continent. The dependent variables measure students' Florida Comprehensive Assessment Test math score in grade 3 (standardized with mean 0 and variance 1), the change in math score from grade 3 to grade 8, reading score in grade 3 (standardized with mean 0 and variance 1), change in reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year), disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident, defined as serious offences often leading to suspension), and retention (an indicator for whether the student repeats the same grade at least once). All the regressions include the same individual controls described in Table 2 (coefficients not reported). In Panel A and Panel B futureless language is a dummy variable equal to 1 for "futureless" languages (languages that do not require "obligatory future time reference use in prediction-based contexts") from Chen (2013). The specification in Panel B includes country of origin fixed effects. In Panel C maximum crop yield is a historical measure of crop yield constructed based on data from the Global Agro-Ecological Zones (GAEZ) project of the Food and Agriculture Organization (FAO) and taken from Galor and Ozak (2016). In Panel D, thrift is the answer to the question from the WVS asking "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? " The variable has been normalized between 0 and 1. We describe in details all the variables in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 12
Long-Term Orientation and educational performance, robustness to other cultural variables
First and Second Generation immigrants (extended definition)

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
			Trust					
Long-Term Orientation	**0.785*** **	**0.405*** **	**0.537*** **	**0.479*** **	**0.083*** **	**-0.009**	**-0.205*** **	**-0.029*** **
	(0.153)	**(0.085)**	**(0.103)**	**(0.108)**	**(0.024)**	**(0.009)**	**(0.049)**	**(0.007)**
Trust	-0.234	0.130	-0.217	-0.084	0.045	-0.054***	0.111	0.018
	(0.237)	(0.137)	(0.153)	(0.188)	(0.040)	(0.018)	(0.098)	(0.012)
Observations	363,157	130,804	363,090	130,195	78,905	2,807,150	1,569,296	2,282,427
R-squared	0.342	0.310	0.352	0.301	0.338	0.196	0.124	0.087
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.773	0.053	0.213	0.045
Dependent Variable (sd)	1.000	0.780	1.000	0.830	0.419	0.071	0.410	0.206
Long-Term Orientation (mean)	0.208	0.211	0.208	0.211	0.216	0.211	0.213	0.210
Long-Term Orientation (sd)	0.143	0.147	0.143	0.147	0.156	0.150	0.153	0.148
Long-Term Orientation (beta)	0.112	0.076	0.077	0.085	0.031	-0.019	-0.077	-0.021
N_clust	140	133	140	133	134	142	139	141
			Hard work					
Long-Term Orientation	**0.701*** **	**0.463*** **	**0.444*** **	**0.449*** **	**0.103*** **	**-0.030*** **	**-0.159*** **	**-0.021*** **
	(0.117)	**(0.074)**	**(0.087)**	**(0.091)**	**(0.022)**	**(0.005)**	**(0.021)**	**(0.005)**
Hard work bring success	-0.074	0.016	-0.046	-0.024	0.006	-0.012***	0.027	0.003
	(0.054)	(0.043)	(0.038)	(0.056)	(0.012)	(0.003)	(0.020)	(0.003)
Observations	360,722	129,909	360,656	129,299	78,347	2,787,641	1,558,233	2,266,907
R-squared	0.342	0.310	0.353	0.301	0.338	0.197	0.124	0.087
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.772	0.053	0.213	0.045
Dependent Variable (sd)	1.000	0.780	1.000	0.830	0.419	0.071	0.410	0.207
Long-Term Orientation (mean)	0.207	0.209	0.207	0.209	0.215	0.210	0.211	0.209
Long-Term Orientation (sd)	0.142	0.146	0.142	0.146	0.156	0.149	0.152	0.148
Long-Term Orientation (beta)	0.100	0.087	0.063	0.079	0.038	-0.064	-0.059	-0.015
N_clust	129	123	129	123	123	131	128	130
			Individualism					
Long-Term Orientation	**0.531*** **	**0.405*** **	**0.301*** **	**0.331*** **	**0.098*** **	**-0.023*** **	**-0.103*** **	**-0.013*** **
	(0.099)	**(0.066)**	**(0.076)**	**(0.070)**	**(0.024)**	**(0.005)**	**(0.013)**	**(0.004)**
Individualism	0.022	-0.072	0.066	-0.168*	-0.006	-0.000	-0.034**	-0.000
	(0.124)	(0.087)	(0.105)	(0.090)	(0.031)	(0.005)	(0.016)	(0.005)
Observations	118,432	44,057	118,391	43,918	28,472	964,622	554,107	778,760
R-squared	0.429	0.385	0.443	0.394	0.367	0.187	0.123	0.110
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.812	0.046	0.163	0.036
Dependent Variable (sd)	1.000	0.762	1.000	0.828	0.391	0.067	0.369	0.186
Long-Term Orientation (mean)	0.326	0.324	0.326	0.324	0.328	0.326	0.326	0.324
Long-Term Orientation (sd)	0.184	0.190	0.184	0.190	0.199	0.192	0.195	0.190
Long-Term Orientation (beta)	0.098	0.101	0.055	0.076	0.050	-0.065	-0.054	-0.013
N_clust	114	111	114	111	109	115	113	114
			Indulgence/restraint					
Long-Term Orientation	**0.750*** **	**0.404*** **	**0.469*** **	**0.437*** **	**0.075*** **	**-0.022** **	**-0.203*** **	**-0.020*** **
	(0.146)	**(0.092)**	**(0.105)**	**(0.120)**	**(0.026)**	**(0.009)**	**(0.056)**	**(0.007)**
Indulgence	0.122	-0.090	0.062	-0.000	-0.044	0.020*	-0.053	-0.000
	(0.151)	(0.110)	(0.103)	(0.151)	(0.029)	(0.012)	(0.057)	(0.009)
Observations	362,627	130,582	362,560	129,973	78,744	2,801,558	1,565,824	2,277,991
R-squared	0.343	0.310	0.353	0.301	0.338	0.195	0.124	0.087
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.773	0.053	0.213	0.045
Dependent Variable (sd)	1.000	0.779	1.000	0.830	0.419	0.071	0.409	0.206
Long-Term Orientation (mean)	0.208	0.211	0.208	0.211	0.216	0.211	0.213	0.210
Long-Term Orientation (sd)	0.143	0.147	0.143	0.147	0.156	0.150	0.153	0.148
Long-Term Orientation (beta)	0.107	0.076	0.067	0.077	0.028	-0.047	-0.076	-0.015
N_clust	141	134	141	134	135	143	140	142

Table 12-continued
Long-Term Orientation and educational performance, robustness to other cultural variables
First and Second Generation immigrants (extended definition)

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
				Masculinity/feminity				
Long-Term Orientation	**0.541*** **	**0.391*** **	**0.326*** **	**0.287*** **	**0.094*** **	**-0.024*** **	**-0.109*** **	**-0.011*** **
	(0.090)	**(0.059)**	**(0.067)**	**(0.065)**	**(0.021)**	**(0.004)**	**(0.010)**	**(0.003)**
Masculinity	0.010	0.048	0.011	0.069	-0.007	-0.005	0.016	0.006
	(0.107)	(0.072)	(0.073)	(0.089)	(0.028)	(0.005)	(0.017)	(0.005)
Observations	118,432	44,057	118,391	43,918	28,472	964,622	554,107	778,760
R-squared	0.429	0.385	0.443	0.394	0.367	0.187	0.123	0.110
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.812	0.046	0.163	0.036
Dependent Variable (sd)	1.000	0.762	1.000	0.828	0.391	0.067	0.369	0.186
Long-Term Orientation (mean)	0.326	0.324	0.326	0.324	0.328	0.326	0.326	0.324
Long-Term Orientation (sd)	0.184	0.190	0.184	0.190	0.199	0.192	0.195	0.190
Long-Term Orientation (beta)	0.100	0.098	0.060	0.066	0.048	-0.069	-0.058	-0.011
N_clust	114	111	114	111	109	115	113	114
				Power Distance				
Long-Term Orientation	**0.508*** **	**0.366*** **	**0.324*** **	**0.273*** **	**0.081*** **	**-0.024*** **	**-0.108*** **	**-0.011*** **
	(0.090)	**(0.060)**	**(0.067)**	**(0.074)**	**(0.023)**	**(0.004)**	**(0.011)**	**(0.004)**
Power Distance	-0.138	-0.049	0.001	0.022	-0.063**	-0.004	0.029	0.005
	(0.131)	(0.092)	(0.102)	(0.127)	(0.031)	(0.007)	(0.026)	(0.007)
Observations	118,432	44,057	118,391	43,918	28,472	964,622	554,107	778,760
R-squared	0.429	0.385	0.443	0.394	0.368	0.187	0.123	0.110
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.812	0.046	0.163	0.036
Dependent Variable (sd)	1.000	0.762	1.000	0.828	0.391	0.067	0.369	0.186
Long-Term Orientation (mean)	0.326	0.324	0.326	0.324	0.328	0.326	0.326	0.324
Long-Term Orientation (sd)	0.184	0.190	0.184	0.190	0.199	0.192	0.195	0.190
Long-Term Orientation (beta)	0.094	0.092	0.060	0.063	0.041	-0.068	-0.057	-0.012
N_clust	114	111	114	111	109	115	113	114
				Uncertainty Avoidance				
Long-Term Orientation	**0.481*** **	**0.362*** **	**0.263*** **	**0.299*** **	**0.080*** **	**-0.016*** **	**-0.097*** **	**-0.012*** **
	(0.096)	**(0.061)**	**(0.077)**	**(0.074)**	**(0.025)**	**(0.005)**	**(0.011)**	**(0.005)**
Uncertainty Avoidance Index	-0.126	-0.033	-0.135	0.065	-0.035	0.015***	0.053***	0.001
	(0.092)	(0.058)	(0.087)	(0.065)	(0.022)	(0.005)	(0.016)	(0.005)
Observations	118,432	44,057	118,391	43,918	28,472	964,622	554,107	778,760
R-squared	0.429	0.385	0.443	0.394	0.368	0.188	0.123	0.110
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.812	0.046	0.163	0.036
Dependent Variable (sd)	1.000	0.762	1.000	0.828	0.391	0.067	0.369	0.186
Long-Term Orientation (mean)	0.326	0.324	0.326	0.324	0.328	0.326	0.326	0.324
Long-Term Orientation (sd)	0.184	0.190	0.184	0.190	0.199	0.192	0.195	0.190
Long-Term Orientation (beta)	0.089	0.090	0.048	0.069	0.041	-0.046	-0.051	-0.013
N_clust	114	111	114	111	109	115	113	114

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes the pooled sample of first generation (defined using both the information on the country of origin and the language spoken at home) and second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. The dependent variables include: students' Florida Comprehensive Assessment Test math and reading score in grade 3 (standardized with mean 0 and variance 1), the change in math and reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year) and retention (an indicator for whether the student repeats the same grade at least once) measured in grades 3-12, and disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident defined as serious offences often leading to suspension) measured in grades 6-12. All the regressions include the same individual and country controls described in Table 9 (coefficients not reported). The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 13
Long-Term Orientation and educational performance, heterogeneity in family characteristics, FLDOE
Second Generation immigrants, extended definition

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES			Math score, 3rd grade				
Long-Term Orientation (LTO)	**0.891*** **	**0.699*** **	**0.637*** **	**0.696*** **	**0.752*** **	**0.666*** **	**0.818*** **
	(0.147)	**(0.124)**	**(0.171)**	**(0.124)**	**(0.211)**	**(0.106)**	**(0.202)**
Mother high school graduate*LTO	-0.173*						-0.209**
	(0.093)						(0.087)
Mother attended some college*LTO	-0.319***						-0.358***
	(0.106)						(0.093)
Mother 4yr college graduate*LTO	-0.224**						-0.268***
	(0.108)						(0.099)
Mother teen pregnancy*LTO		-0.534					-0.679**
		(0.329)					(0.341)
Mother married at time of birth*LTO			0.074				0.145*
			(0.110)				(0.081)
Number of older siblings*LTO				0.001			-0.020
				(0.025)			(0.023)
Median income in zipcode of birth (100,000 of $)*LTO					-0.113		-0.022
					(0.277)		(0.204)
Free or Reduced Priced Lunch*LTO						0.068	0.039
						(0.092)	(0.073)
Mother high school graduate	0.116***	0.083***	0.083***	0.083***	0.083***	0.083***	0.122***
	(0.028)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.027)
Mother attended some college	0.232***	0.170***	0.170***	0.170***	0.170***	0.170***	0.240***
	(0.023)	(0.019)	(0.020)	(0.020)	(0.020)	(0.019)	(0.020)
Mother 4yr college graduate	0.381***	0.337***	0.337***	0.337***	0.337***	0.338***	0.390***
	(0.021)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.017)
Mother teen pregnancy	-0.065***	0.020	-0.071***	-0.070***	-0.070***	-0.069***	0.048
	(0.023)	(0.058)	(0.024)	(0.024)	(0.024)	(0.024)	(0.057)
Mother married at time of birth	0.101***	0.102***	0.088***	0.102***	0.102***	0.102***	0.074***
	(0.007)	(0.007)	(0.019)	(0.007)	(0.007)	(0.007)	(0.014)
Number of older siblings	-0.027***	-0.028***	-0.028***	-0.028***	-0.028***	-0.028***	-0.024***
	(0.004)	(0.004)	(0.004)	(0.008)	(0.004)	(0.004)	(0.007)
Median income in zipcode of birth (100,000 of $)	0.172***	0.173***	0.172***	0.173***	0.198***	0.173***	0.177***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.062)	(0.026)	(0.048)
Free or Reduced Priced Lunch	-0.155***	-0.154***	-0.154***	-0.154***	-0.154***	-0.169***	-0.163***
	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)	(0.017)	(0.014)
Observations	184,331	184,331	184,331	184,331	184,331	184,331	184,331
R-squared	0.368	0.368	0.368	0.368	0.368	0.368	0.369
Year*school FE	YES	YES	YES	YES	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dependent Variable (sd)	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Long-Term Orientation (mean)	0.207	0.207	0.207	0.207	0.207	0.207	0.207
Long-Term Orientation (sd)	0.143	0.143	0.143	0.143	0.143	0.143	0.143
Long-Term Orientation (beta)	0.127	0.100	0.091	0.100	0.108	0.095	0.117
N_clust	90	90	90	90	90	90	90

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. See details in the text and the appendix for how the matching between language and countries has been implemented. See details in the text and the appendix for how the matching between languages and countries has been implemented. The dependent variable measure students' Florida Comprehensive Assessment Test math score in grade 3 (standardized with mean 0 and variance 1). All the regressions include the same individual controls described in Table 2 (coefficients not reported). Maternal controls are the same as in Table 6. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 14
Long-Term Orientation and school composition, First and second generation (extended definition) immigrants

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3)	(4) Reading score, 3rd grade	(5) Reading score, change 3rd to 8th	(6)	(7) Graduation	(8) % Absent Days	(9) Disciplinary Incident	(10) Retention
Long-Term Orientation (LTO)	**0.662*** **	**0.478*** **	**0.522*** **	**0.378** **	**0.490*** **	**0.509*** **	**0.069*** **	**-0.025** **	**-0.108** **	**-0.006* **
	(0.197)	**(0.132)**	**(0.161)**	**(0.147)**	**(0.128)**	**(0.161)**	**(0.022)**	**(0.012)**	**(0.047)**	**(0.003)**
Fraction speaking the same language (log)*LTO	0.169***		0.159**	0.070		0.133	0.023	-0.009***	-0.029**	-0.002
	(0.057)		(0.064)	(0.046)		(0.081)	(0.014)	(0.003)	(0.012)	(0.001)
Fraction speaking the same language (log)	-0.101***		-0.088***	-0.063***		-0.071*	-0.013	0.005***	0.020***	0.002**
	(0.028)		(0.031)	(0.019)		(0.037)	(0.008)	(0.002)	(0.006)	(0.001)
Fraction speaking the same language (log) in grade 3*		0.142***			0.147**					
		(0.048)			(0.061)					
Fraction speaking the same language (log) in grade 3		-0.079***			-0.093***					
		(0.024)			(0.028)					
Observations	47,992	17,945	17,945	47,963	17,876	17,876	11,369	384,139	219,673	307,507
R-squared	0.453	0.458	0.458	0.460	0.451	0.451	0.377	0.180	0.129	0.136
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.000	0.000	0.878	0.040	0.126	0.023
Dependent Variable (sd)	1.000	0.766	0.766	1.000	0.840	0.840	0.328	0.063	0.332	0.151
Long-Term Orientation (mean)	0.528	0.531	0.531	0.528	0.532	0.532	0.535	0.531	0.532	0.530
Long-Term Orientation (sd)	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.206	0.206	0.205
Long-Term Orientation (beta)	0.135	0.128	0.139	0.077	0.119	0.124	0.043	-0.082	-0.067	-0.008
N_clust	91	83	83	91	83	83	83	95	93	94

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample pools together first generation immigrants defined using the information on both the country of origin and the language spoken at home and second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. See details in the text and the appendix for how the matching between language and countries has been implemented. The dependent variables measure students' Florida Comprehensive Assessment Test math score in grade 3 (standardized with mean 0 and variance 1), the change in math score from grade 3 to grade 8, reading score in grade 3 (standardized with mean 0 and variance 1), change in reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year), disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident, defined as serious offences often leading to suspension), and retention (an indicator for whether the student repeats the same grade at least once). Fraction of students speaking the same language is the ratio of students speaking a given language in a given year in a given school divided by the school population (including natives). Students speaking English, Spanish, or Haitian are not included in our regressions (but are still part of the denominator). All the regressions include the same individual controls described in Table 2 (coefficients not reported). Columns 2 and 4 also control for the math score and reading score in grade 3, respectively. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables on the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 15
Enrollment in advanced classes, school choice and participation in gifted program

VARIABLES	(1) Fraction of advanced classes	(2) Fraction of advanced classes (scientific subjects)	(3) School Letter Score (from A to F) at t-1, (pre-) kindergarten	(4) School Letter Score (from A to F) at t-1, (pre-) kindergarten	(5) School Letter Score (from A to F) at t-1, (pre-) kindergarten	(6) School Letter Score (from A to F)	(7) School Letter Score (from A to F)	(8) School Letter Score (from A to F)	(9) Gifted in grade 4
Long-Term Orientation	**0.081*** **	**0.032*** **	**0.374*** **	**0.319*** **	**0.284*** **	**0.330*** **	**0.296*** **	**0.263*** **	**0.095*** **
	(0.018)	**(0.007)**	**(0.125)**	**(0.088)**	**(0.090)**	**(0.110)**	**(0.077)**	**(0.078)**	**(0.017)**
Male	-0.016***	-0.002***	0.002	0.003	0.003	-0.003	-0.009***	-0.009***	0.002
	(0.001)	(0.000)	(0.002)	(0.005)	(0.004)	(0.002)	(0.003)	(0.002)	(0.004)
Age in months	0.000	0.000***	0.010***	0.010***	0.010***	-0.005***	-0.002**	-0.002***	-0.003***
	(0.000)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Free or Reduced Priced Lunch	-0.017***	-0.004***	-0.436***	-0.265***	-0.258***	-0.385***	-0.255***	-0.239***	0.025***
	(0.002)	(0.001)	(0.041)	(0.013)	(0.013)	(0.037)	(0.013)	(0.013)	(0.007)
Special education	0.010***	0.005***	0.061***	0.045***	0.039***	0.009	0.028***	0.020***	
	(0.002)	(0.001)	(0.011)	(0.012)	(0.010)	(0.016)	(0.007)	(0.006)	
Enrolled in Limited English proficiency prog	0.012***	0.007***	-0.053***	-0.039***	-0.031***	-0.092***	-0.080***	-0.082***	0.005
	(0.002)	(0.001)	(0.015)	(0.009)	(0.009)	(0.018)	(0.009)	(0.007)	(0.011)
Math score, 8th grade	0.046***	0.013***							
	(0.005)	(0.002)							
Observations	512,070	512,070	241,492	140,511	140,511	3,478,527	1,401,802	1,401,802	26,308
R-squared	0.336	0.215	0.215	0.324	0.338	0.248	0.279	0.296	0.419
Year*school FE	YES	YES	-			-			YES
District FE	-	-	YES	NO	YES	YES	NO	YES	-
Zipcode at birth FE			NO	YES	YES	NO	YES	YES	-
Year FE	-	-	YES	YES	YES	YES	YES	YES	-
Grade FE	YES	YES	-	-	-	YES	YES	YES	-
Dependent Variable (mean)	0.058	0.013	4.097	4.076	4.076	4.125	4.210	4.210	0.112
Dependent Variable (sd)	0.145	0.054	1.000	1.012	1.012	1.013	0.977	0.977	0.316
Long-Term Orientation (mean)	0.222	0.222	0.217	0.208	0.208	0.220	0.208	0.208	0.276
Long-Term Orientation (sd)	0.162	0.162	0.152	0.140	0.140	0.160	0.143	0.143	0.205
Long-Term Orientation (beta)	0.090	0.096	0.057	0.044	0.039	0.052	0.043	0.039	0.062
N_clust	93	93	92	69	69	96	76	76	88

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample pools together first generation immigrants defined using the information on both the country of origin and the language spoken at home and second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. See details in the text and the appendix for how the matching between language and countries has been implemented. In columns (1) and (2) the sample is restricted to the students enrolled in grades 9th to 12th and the dependent variables are respectively the fraction of advanced classes (AP, IB, and/or AICE) taken by the student over the total number of classes taken by the student during a given academic year, the fraction of advanced classes in scientific or math subjects (AP, IB, and/or AICE) taken by the student over the total number of classes taken by the student during a given academic year. In columns 3-5 the sample includes students enrolled the first time they enter the school system either in Kindergarten or pre-Kindergarten class and the dependent variables is the score earned by their school in year t-1. In column 6-8 the sample includes students in all grades and the dependent variable is the score earned by their school in year t-1. These school scores are calculated by the Florida Department of Education to measure schools' quality. In column (9) the sample includes all students who were present in the data both in grade 3rd and 4th, were not enrolled in a gifted program in 3rd grade, and were top performers in FCAT math and reading in third grade. The dependent variable is equal to one if the student is enrolled in a gifted program in grade 4 and equal to zero otherwise. All the regressions include the same individual controls described in Table 2. Columns 1 and 2 also control for the math score in grade 8. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables on the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 16
Program for International Student Assessment (PISA): sample statistics

	1st generation			2nd generation (mother)			2nd generation (father)		
	Obs.	Mean	St. dev.	Obs.	Mean	St. dev.	Obs.	Mean	St. dev.
Math	27,649	0.000	1.000	45,884	0.000	1.000	45,340	0.000	1.000
Reading	27,649	0.000	1.000	45,884	0.000	1.000	45,340	0.000	1.000
Science	27,649	0.000	1.000	45,884	0.000	1.000	45,340	0.000	1.000
Retention	17,229	0.158	0.365	30,135	0.144	0.351	29,735	0.143	0.350
Truancy	7,918	0.136	0.343	13,810	0.120	0.325	13,346	0.120	0.325
Male	27,649	0.505	0.500	45,884	0.495	0.500	45,340	0.496	0.500
Age of student (in years)	27,649	15.775	0.288	45,884	15.778	0.289	45,340	15.781	0.288
Grade 7	27,649	0.034	0.181	45,884	0.018	0.132	45,340	0.017	0.130
Grade 8	27,649	0.140	0.347	45,884	0.091	0.288	45,340	0.092	0.288
Grade 9	27,649	0.376	0.484	45,884	0.423	0.494	45,340	0.419	0.493
Grade 10	27,649	0.344	0.475	45,884	0.404	0.491	45,340	0.410	0.492
Grade 11	27,649	0.102	0.302	45,884	0.062	0.242	45,340	0.059	0.236
Grade 12	27,649	0.004	0.065	45,884	0.002	0.048	45,340	0.003	0.050
Grade 13	27,649	0.000	0.006	45,884	0.000	0.000	45,340	0.000	0.000
Parents' education level: none	27,649	0.033	0.178	45,884	0.035	0.184	45,340	0.035	0.183
Parents' education level: primary	27,649	0.081	0.272	45,884	0.084	0.277	45,340	0.084	0.277
Parents' education level: lower secondary	27,649	0.157	0.364	45,884	0.186	0.389	45,340	0.187	0.390
Parents' education level: upper secondary	27,649	0.083	0.275	45,884	0.105	0.306	45,340	0.110	0.313
Parents' education level: post-secondary non-tertiary	27,649	0.200	0.400	45,884	0.231	0.421	45,340	0.229	0.420
Parents' education level: first stage of tertiary	27,649	0.128	0.334	45,884	0.137	0.343	45,340	0.139	0.346
Parents' education level: second stage of tertiary	27,649	0.319	0.466	45,884	0.223	0.416	45,340	0.216	0.412
Wealth	22,734	-0.319	1.049	39,041	-0.241	0.940	38,033	-0.233	0.934

Notes. The table reports the sample statistics of the PISA sample (waves 2003, 2006, 2009 and 2012). Math, Reading and Science scores are respectively the averages of the 5 plausible values for math, reading and science tests. Retention is a dummy variable equal to 1 if a student repeated at least one year during his/her school career (PISA waves 2003, 2009 and 2012). Truancy is a dummy variable equal to 1 if the student, when asked "In the last two full weeks of school, how many times did you skip a whole school day?" ticked one of the following answers: "one or two times", "three or four times", "five or more times"; equal to 0 if s/he ticked the answer "none" (PISA wave 2012). Male is a dummy equal to one if the student is a boy. Age is the age of the student expressed in years. Grades= 7-13 are dummy variables equal to 1 if the student is in the corresponding grade. Parents' education variables are dummy variables for different level of educations (more details in the online Appendix). Wealth is an index of family wealth possessions built by OECD – PISA based on the student's responses to several questions regarding specific items in the student's home (PISA waves 2006, 2009 and 2012). More details on these variables are contained in the online Appendix.

Table 17
Long-Term Orientation and educational outcomes, PISA
First generation immigrants

VARIABLES	(1) Math	(2) Reading	(3) Science	(4) Retention	(5) Truancy	(6) Math	(7) Reading	(8) Science	(9) Retention	(10) Truancy
Long-Term Orientation	**0.655*** **	**0.434** **	**0.616*** **	**-0.065** **	**-0.124*** **	**0.709*** **	**0.505** **	**0.676*** **	**-0.061** **	**-0.124*** **
	(0.155)	**(0.213)**	**(0.219)**	**(0.027)**	**(0.034)**	**(0.136)**	**(0.204)**	**(0.216)**	**(0.025)**	**(0.034)**
Male	0.142***	-0.343***	0.030	0.017***	0.010	0.143***	-0.349***	0.028	0.013**	0.010
	(0.011)	(0.026)	(0.019)	(0.004)	(0.009)	(0.013)	(0.026)	(0.023)	(0.006)	(0.010)
Age of student	-0.144***	-0.126***	-0.125***	0.190***	0.021	-0.163***	-0.154***	-0.155***	0.193***	0.021
	(0.036)	(0.028)	(0.031)	(0.024)	(0.015)	(0.033)	(0.030)	(0.033)	(0.028)	(0.015)
Wealth						0.048***	0.031**	0.027**	-0.000	0.004
						(0.017)	(0.014)	(0.012)	(0.004)	(0.004)
Observations	27,649	27,649	27,649	17,229	7,918	22,734	22,734	22,734	13,371	7,899
R-squared	0.371	0.341	0.341	0.314	0.080	0.380	0.344	0.348	0.337	0.081
Year FE	YES	YES	YES	YES	-	YES	YES	YES	YES	-
Grade FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Parents' education FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country of destination FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.158	0.136	0.000	0.000	0.000	0.159	0.136
Dependent Variable (sd)	1.000	1.000	1.000	0.365	0.343	1.000	1.000	1.000	0.366	0.343
Long-Term Orientation (mean)	0.590	0.590	0.590	0.570	0.561	0.591	0.591	0.591	0.566	0.561
Long-Term Orientation (sd)	0.253	0.253	0.253	0.259	0.267	0.258	0.258	0.258	0.268	0.266
Long-Term Orientation (beta)	0.166	0.110	0.156	-0.046	-0.097	0.183	0.131	0.175	-0.045	-0.097
N_clust	63	63	63	63	54	58	58	58	52	54

Notes. The table reports OLS estimates, with standard errors clustered at the country of origin level. The unit of observation is a first generation immigrant student from one of the 63 countries residing in one of the 37 countries surveyed in PISA for which information about country of origin of the respondent is available (4 waves from 2003 to 2012 depending on whether the variables used in the regression are all available – details are in the online Appendix). The dependent variables are Math, Reading, and Science scores calculated according to the description on the online appendix, retention (a dummy variable equal to 1 if a student repeated at least one year during his/her school career), and truancy (a dummy variable equal to 1 if the student skipped at least one full day of school in the previous two weeks). The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. Individual controls are: male (a dummy equal to one if the student is a boy), age (the age of the student expressed in years), dummies for student grade and for parents' education, wealth (an index of family wealth possessions built by OECD – PISA). We describe in details all the variables (and their availability in different PISA waves) in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table 18
Long-Term Orientation and educational outcomes, PISA
Second generation immigrants (maternal side)

VARIABLES	(1) Math	(2) Reading	(3) Science	(4) Retention	(5) Truancy	(6) Math	(7) Reading	(8) Science	(9) Retention	(10) Truancy
Long-Term Orientation	**0.745*** **	**0.680*** **	**0.808*** **	**-0.081*** **	**-0.081** **	**0.787*** **	**0.725*** **	**0.855*** **	**-0.080*** **	**-0.082** **
	(0.201)	**(0.193)**	**(0.206)**	**(0.024)**	**(0.036)**	**(0.195)**	**(0.192)**	**(0.203)**	**(0.023)**	**(0.035)**
Male	0.193***	-0.322***	0.079***	0.007	-0.009	0.197***	-0.323***	0.078***	0.006	-0.009
	(0.017)	(0.036)	(0.019)	(0.007)	(0.010)	(0.018)	(0.036)	(0.021)	(0.007)	(0.010)
Age of student	-0.216***	-0.196***	-0.172***	0.272***	0.030**	-0.220***	-0.200***	-0.180***	0.293***	0.030**
	(0.033)	(0.036)	(0.034)	(0.035)	(0.014)	(0.035)	(0.040)	(0.039)	(0.032)	(0.014)
Wealth						0.006	-0.008	-0.018	0.001	0.005
						(0.014)	(0.012)	(0.012)	(0.004)	(0.006)
Observations	45,884	45,884	45,884	30,135	13,810	39,041	39,041	39,041	24,292	13,775
R-squared	0.382	0.348	0.354	0.483	0.108	0.393	0.356	0.362	0.492	0.108
Year FE	YES	YES	YES	YES	-	YES	YES	YES	YES	-
Grade FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Parents' education FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country of destination FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.144	0.120	0.000	0.000	0.000	0.154	0.120
Dependent Variable (sd)	1.000	1.000	1.000	0.351	0.325	1.000	1.000	1.000	0.361	0.325
Long-Term Orientation (mean)	0.646	0.646	0.646	0.643	0.631	0.647	0.647	0.647	0.642	0.631
Long-Term Orientation (sd)	0.227	0.227	0.227	0.227	0.231	0.231	0.231	0.231	0.233	0.231
Long-Term Orientation (beta)	0.169	0.155	0.184	-0.052	-0.058	0.182	0.168	0.198	-0.052	-0.059
N_clust	60	60	60	58	56	58	58	58	53	56

Notes. The table reports OLS estimates, with standard errors clustered at the country of origin level. The unit of observation is a second generation immigrant student on the maternal side from one of the 63 countries residing in one of the 37 countries surveyed in PISA for which information about the country of origin of the parents is available (4 waves from 2003 to 2012 depending on whether the variables used in the regression are all available – details are on the online Appendix). The dependent variables are Math, Reading, Science scores calculated according to the description on the online appendix, retention (a dummy variable equal to 1 if a student repeated at least one year during his/her school career), and truancy (a dummy variable equal to 1 if the student skipped at least one full day of school in the previous two weeks). The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. Individual controls are: male (a dummy equal to one if the student is a boy), age (the age of the student expressed in years), dummies for student grade and for parents' education, wealth (an index of family wealth possessions built by OECD – PISA). We describe in details all the variables (and their availability in different PISA waves) on the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Web Appendix for

Long-Term Orientation and Educational Performance

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A1. Introduction

This appendix accompanies "Long Term Orientation and Educational Performance" by David Figlio, Paola Giuliano, Umut Ozek, and Paola Sapienza. Section A2 provides further details of the data used in the paper, as well as the definition of variables. Section A3 reports additional figures and tables that were discussed in the body of the paper, but not reported there explicitly. Section A4 discusses the existence of within-country selection along Long-Term Orientation.

A2. Data and their sources

In this section we describe in more details of some of the variables used in the analysis. We also describe some additional technical details to understand the construction of the data and the regression analysis.

A.2.1. Long-Term Orientation

Hofstede et al. (2010) constructed the measure of Long-Term Orientation through a factor analysis of the following variables, taken from the WVS (latest data available for each country in the 1995-2004 period): 1. Thrift as a desirable trait for children (percentage of people in a country choosing "thrift" as one of the answers to the question: "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five." The list included: independence, hard work, feeling of responsibility, imagination, tolerance and respect for other people, thrift (saving money and things), determination (perseverance), religious faith, unselfishness, obedience.) 2. National pride (percentage of people in a country choosing "very proud" as answer to the following question: "How proud are you to be -name of your nationality-?" Possible answers included: "very proud," "quite proud," "not very proud," "not at all proud") 3. Importance of service to others (percentage of people in each country choosing "very important" as answer to the following question: "For each of the following, indicate how important it is in your life—very important, rather important, not very important, or not at all important: family, friends, leisure time, politics, work, religion, service to others."[1] We downloaded the actual variable from the website www.geerthofstede.nl/dimension-data-matrix in the spreadsheet "Six dimensions for website.xls (version 2015 12 08)" with the addition of the data "NonOfficial VSM08 scores" for Nepal and Sri Lanka, for which we take the value corresponding to "Sri Lanka-

[1] Because service to others had some missing values, linear regression on the two other variables was used to predict the missing factor scores.

General population." The Long-Term Orientation variable ranges from 0 to 100. In our data it was rescaled as a 0-1 variable.

A.2.2. Description of variables for the Florida analysis

Dependent variables		
Name of the variable	*Description*	*Source (and when possible and useful name of the raw variable)*
Math score	Development scale score in the Mathematics section of the FCAT. We standardize the statewide test scores to zero mean and unit variance at the grade/year level based on the sub-sample used in each regression/specification.	Source: FLDOE Created using raw variables: DEV_SCALE_SCORE, SUBTEST_ID, TEST_GRADE_LEVEL, CURRENT_ACADEMIC_YEAR
Math score, change 3rd to 8th	Difference between the standardized math score in grade 8 and the standardized math score in grade 3. The standardization is done within each sample by subtracting the mean test score in the sample (for each grade) and by dividing them by the sample standard deviation.	Source: FLDOE Created using raw variables: DEV_SCALE_SCORE, SUBTEST_ID, TEST_GRADE_LEVEL, CURRENT_ACADEMIC_YEAR
Reading score	Development scale score in the Reading section of the FCAT. We standardize the statewide test scores to zero mean and unit variance at the grade/year level based on the sub-sample used in each regression/specification.	Source: FLDOE Created using raw variables: DEV_SCALE_SCORE, SUBTEST_ID, TEST_GRADE_LEVEL, CURRENT_ACADEMIC_YEAR
Reading score, change 3rd to 8th	Difference between the standardized reading score in grade 8 and the standardized reading score in grade 3. The standardization is done within each sample by subtracting the mean test score in the sample (for each grade) and by dividing them by the sample standard deviation.	Source: FLDOE Created using raw variables: DEV_SCALE_SCORE, SUBTEST_ID, TEST_GRADE_LEVEL, CURRENT_ACADEMIC_YEAR
Graduation	Dummy variable equal to 1 if a student obtained a standard diploma within 4 years after entering grade 9 for the first time.	Source: FLDOE Created using raw variables: ENROLLMENT_YEAR, WITHDRAWAL_REASON_CD, GRADE_LVL_ID
% Absent Days	Percentage of absent days during the year calculated as a fraction of absent days over the sum of absent and present days.	Source: FLDOE Created using raw variables: ABSENT_DAYS_NBR, PRESENT_DAYS_NBR
Disciplinary Incident	Dummy variable equal to 1 if the student was involved in a disciplinary incident during the year, equal to 0 if s/he was not involved in any disciplinary incident. A disciplinary incident is a serious offense that usually results in suspension.	Source: FLDOE Created using raw variables: STUDENT_REFERRAL_ACTION_CD

Retention	Dummy variable equal to 1 in year *t* if the student attends the same grade in year *t* and in year *t+1*, and equal to 0 if the student attends a higher grade in year *t+1*.	Source: FLDOE Created using raw variables: ENROLLMENT_YEAR, GRADE_LVL_ID
Gifted in grade 4	Dummy variable equal to 1 if the student is classified as gifted in grade 4 and zero otherwise.	Source: FLDOE Created using raw variables: PRIMARY_EXCPT_IND
School letter score at year *t-1*	School letter scores are recoded into a numerical scale ranging from 1 to 5, where a letter grade of "F" corresponds to 1, "D" corresponds to 2, "C" corresponds to 3, "B" corresponds to 4, "A" corresponds to 5. We assign to each school the score it earned in year *t-1*, that is the year before the student attends the school. Source: http://schoolgrades.fldoe.org (we took the information from the 2013-2014 School Grades spreadsheet)	Source: FLDOE Created using raw variables: School grade variable in the 2013-14 school grades spreadsheet.
Fraction of advanced classes	Number of IB, AICE or AP classes taken during the academic year over the total number of classes taken. Advanced classes are identified using FLDOE's course code directory for each school year (http://www.fldoe.org/policy/articulation/ccd).	Source: FLDOE Created using raw variables: COURSE_NUMBER
Fraction of advanced classes (scientific subjects)	Number of IB, AICE or AP classes taken during the academic year in Math, Computer Science, or Natural Sciences over the total number of classes taken. More specifically, "Scientific advanced classes" are all those classes whose course numbers are between 200000-300000 (Computer Science), 1200000-1300000 (Mathematics) or 2000000-2100000 (Sciences: Biology, Environmental Sciences, Chemistry, Physics and Design Technology). Source: http://www.fldoe.org/policy/articulation/ccd/archive/2005-2006-course-directory.stml	Source: FLDOE Created using raw variables: COURSE_NUMBER
Individual controls		
Name of the variable	*Description*	*Source*
Age in months	Assuming the school year starts on Sep 1st, the variable is calculated as: Academic year*12+8-Student year of birth*12-student month of birth.	Source: FLDOE Created using raw variables: STUDENT_BIRTH_MONTH, STUDENT_BIRTH_YEAR, ENROLLMENT_YEAR
Male	A dummy for whether the student is a boy.	Source: FLDOE Created using raw variables: GENDER_CD
Free or Reduced Priced Lunch	A dummy equal to 1 if the student/year is eligible for free lunch, reduced-price lunch or attends a "provision 2" school and zero otherwise (either	Source: FLDOE Created using raw variables: LUNCH_STATUS

	the student did not apply or he/she applied but she/he was not eligible).	
Enrolled in Limited English proficiency program	A dummy variable equal to 1 if the student is enrolled in a limited English proficiency program and zero otherwise.	Source: FLDOE Created using raw variables: LIMITED_ENGLISH_PROFIENCY_CD
Special Education	A dummy variable equal to 1 if the variable if the student has special education needs and zero otherwise. Gifted students are classified as zero.	Source: FLDOE Created using raw variables: PRIMARY_EXCPT_IND
Mother's educational dummies	We define three dummies for the maternal level of education: high school graduate (years of education is equal to 12), some college (years of education greater than 12 and strictly smaller than 16) and college graduate (years of education greater or equal than 16). The mother's years of education variable is taken from the birth certificates.	Source: birth certificate
Mother teen pregnancy	A dummy equal to 1 if mother's age at time of birth is smaller or equal than 16 years, equal to 0 if it is greater than 16 years. Mother's age at time of birth is constructed starting from mother's month and year of birth (both provided in the birth certificate) and children's month and year of birth (provided by FLDOE). Mother's age is set to missing if it is less than 12 or greater than 50. This variable is obtained from the birth certificates.	Source: birth certificate
Mother married at time of birth	A dummy variable equal to 1 if the mother is married at time of giving birth.	Source: birth certificate
Number of older siblings	The number of older siblings. This variable is obtained from the birth certificates.	Source: birth certificate
Median income in zip code of birth, (100,000 of $)	We match the zip code at time of birth (provided by the birth certificates) with zip code income in 1999, obtained from the Census bureau.	Source: birth certificate and Census
Fraction speaking the same language (log)	Number of students who speak the same language of the student over total number of students in the school she/he attends, in the given year, multiplied by 100, of which we then computed the logarithm.	Source: FLDOE Created using raw variables: LANGUAGE_HAVE_PARENTS_SPEAKING, INSTITUTION_ID, ENROLLMENT_YEAR
Continent dummies	In Table 10 we pooled together first and extended version of second generation immigrants and test the robustness of the results to the exclusion of the Latin American continent and the Asian continent. Since we merge immigrants using both a definition based on the country of origin and definition based on the language, the continent dummy needs to combine both elements. For first generation the dummy is equal to one if the country belongs to a given continent. As for language, we adopted the following rule: a language is assigned to a given continent	Source: FLDOE Created using raw variables: LANGUAGE_HAVE_PARENTS_SPEAKING COUNTRY_CD_BORNED_IN

	if among the sample of 1st generation migrants who speak that language (and from which we built the weights), at least 50% come from that specific continent. For instance, in the case of Portuguese, if among the first generation migrants 60% of the Portuguese speakers come from Brazil and 40% come from Portugal, the language-level continent dummy assigned to Portuguese will be "Americas". Note that we define "Latin America" as all countries located in the Americas with the exclusion of Canada and the US.	
Country controls		
Name of the variable	*Description*	*Source*
Distance from the US (log)	Log (distance in km) between the most populated city in the country of origin of the immigrant and the most populated city in the United States. For Serbia and Montenegro, we use the value assigned to "Yugoslavia."	Source: http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=6
Log GDP pc year 2000, ppp	Log per capita GDP (PPP converted relative to the United States, G-K method, at current prices) for the year 2000. We take the logarithm of this value+1.	Source: http://www.rug.nl/research/ggdc/data/pwt/pwt-7.0
Mean PISA score in Math	Mean score in Mathematics (weighted average using population weights of the individual values, calculated as averages of the 5 Plausible Values provided in the dataset). Average across all available years (2003 to 2012) for the given country.	Source: https://www.oecd.org/pisa/
Education selection to Florida, Feliciano (2005)	Calculated as the net difference index used by Feliciano (2005) and proposed by Lieberson (1976). It is a comparative measure of immigrants' and non-immigrants' educational attainment (adjusted for age) along several points of the education distribution (no schooling; primary education; secondary education; tertiary education). For the exact formula see Feliciano (2005). Educational attainment of the migrants is obtained from the Census 2000, looking at 1st generation migrants aged 25 years old or older, who live in Florida, and who migrated to the US at an age equal or higher than 18 years old The educational attainment from the country of origin is taken from Barro-Lee ("Educational Attainment Data For The Population Aged 25 Years And Older) and it is augmented with data for Puerto Rico obtained from UNESCO for year 2012.	Sources: www.ipums.org, http://data.uis.unesco.org; http://www.barrolee.com

Educational selection, Hanushek et al. (forthcoming)	For each country of origin, Hanushek et al. (forthcoming) calculate the selectivity parameter for school attainment as the percentile *p* of the home country distribution from which the average immigrants to the US is drawn. For the exact formula see Hanushek et al. (forthcoming)	Source: "Knowledge Capital and Aggregate Income Differences: Development Accounting for U.S. States", Hanushek et al. (*American Economic Journal: Macroeconomics*, forthcoming)
Savings over GDP/100	Savings rate/GDP for the year 2000.	Source: http://data.worldbank.org/indicator/NY.GDS.TOTL.ZS
Maximum Crop Yield (Galor)	A historical measure of crop yield constructed based on data from the Global Agro-Ecological Zones (GAEZ) project of the Food and Agriculture Organization (FAO). The measure is constructed under low level of inputs and rain-fed agriculture. For details see Galor et Ozak (2016).	Source: http://ozak.github.io/Caloric-Suitability-Index/ Created using the variable: post1500maximumcalories0mean_aa divided by 1,000
Futureless Language (Chen)	Dummy variable equal to 1 for "futureless" languages (languages that do not require "obligatory use in prediction-based contexts"). We recoded Chen (2013) accordingly.	Source: http://www.anderson.ucla.edu/faculty/keith.chen/datafilm.htm. Created using the raw variable: prediction_ftr
Other cultural variables		
Trust	The variable "trust" is constructed using the question A165 from the World Value Survey. The respondent is asked whether "Generally speaking, would you say that most people can be trusted" (coded as 1) or that "you need to be very careful in dealing with people?" (coded as 0). Our variable is the average at the country level of the fraction of people reporting that "most people can be trusted".	World Values Survey, Waves 1-6.
Hard Work	The variable "hard work" is constructed using the variable E040 from the World Value Survey. The original question asks the respondent to choose, on a scale from 1 to 10, between two opposite statements: "In the long run, hard work usually brings a better life" (taking the value of 1) and "Hard work doesn't generally bring success – it's more a matter of luck and connections" (taking value of 10). For ease of interpretation, we recoded the question so that to a higher value is associated with the importance of hard work. We take the average at the country level of the recoded variable.	World Values Survey, Waves 2, 3, 5 and 6.
Individualism	Individualism is defined as a preference for a loosely-knit social framework in which individuals are expected to take care of only themselves and their immediate families. Its opposite, collectivism, represents a preference for a tightly-knit framework	Hofstede (2010)

	in society in which individuals can expect their relatives or members of a particular in-group to look after them in exchange for unquestioning loyalty. A society's position on this dimension is reflected in whether people's self-image is defined in terms of "I" or "we."	
Indulgence/restraint	Indulgence stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Restraint stands for a society that suppresses gratification of needs and regulates it by means of strict social norms	Hofstede (2010)
Masculinity/femininity	Masculinity represents a preference in society for achievement, heroism, assertiveness and material rewards for success. Society at large is more competitive. Its opposite, femininity, stands for a preference for cooperation, modesty, caring for the weak and quality of life. Society at large is more consensus-oriented.	Hofstede (2010)
Uncertainty avoidance	The Uncertainty Avoidance dimension expresses the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. Countries exhibiting strong UAI maintain rigid codes of belief and behavior and are intolerant of unorthodox behavior and ideas. Weak UAI societies maintain a more relaxed attitude in which practice counts more than principles.	Hofstede (2010)
Power Distance	The power distance index is defined as "the extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally." A higher degree of the Index indicates that hierarchy is clearly established and executed in society, without doubt or reason. A lower degree of the Index signifies that people question authority and attempt to distribute power	Hofstede (2010)
European Social Survey		
Planning for the future	"Do you generally plan for your future or do you just take each day as it comes? Please express your opinion on a scale from 0 to 10, where 0 means 'I plan for my future as much as possible' and 10 means 'I just take each day as it comes' ". We recoded the question so that a higher number indicates more long-term oriented individuals.	European Social Survey, round 3.
Importance of having fun	The respondent is given the description of a person and he/she has to choose, on a scale from 1 to 6 whether the person is "Very much like me", "Like me", "Somewhat like me", "A little like me", "Not like me", "Not like me at all". "He seeks every chance he can to have fun. It is important to him to do things that give him pleasure". We recoded the	European Social Survey, Rounds 1-6

	question so that a higher number indicates more long-term individuals	
Importance of having a good time	The respondent is given the description of a person and he/she has to choose, on a scale from 1 to 6 whether the person is "Very much like me", "Like me", "Somewhat like me", "A little like me", "Not like me", "Not like me at all". "Having a good time is important to him. He likes to spoil himself". We coded all the questions so that a higher number indicates more long-term oriented individuals.	European Social Survey, Rounds 1-6

A.2.3. Description of the samples in Florida Analysis and other technical details

Sample selection of immigrants attending public schools in Florida. Florida is one of the top immigrant states in the United States, both in terms of numbers of immigrants and immigrant share of the total population. One possible concern is that the population of immigrant students attending public schools is not representative of student immigrants in Florida. To address this concern, we compare the characteristics of first and second-generation immigrants going to public schools with those of the natives.[2] The descriptive statistics for the three groups based on Census 2000 and 2010 are shown in Table A3. In 2000, the fraction of natives and second-generation immigrants going to public schools is very similar (88% of natives and 87% of second-generation), while the number is slightly higher for the first generation (93%).[3] Similarly, the family income of natives and second-generation immigrants does not differ substantially in 2000 (around $61,000), whereas the average income is lower for the first generation ($46,441). Furthermore, when we restrict the sample to families sending their children to public schools, the income is lower than the income of families with children in private schools, as expected, but the differences between groups is again similar for natives and second-generation immigrants ($55,838 and $52,842, respectively) and lower for first generation immigrants ($43,526).[4] The patterns are similar for 2010.

Sample of first generation immigrants. In our regressions we use two samples of first generation immigrants. For the first sample, we define this group using the country of origin of the children. For the second sample, we define this group using the country of origin of the children and also impose the additional restriction that they speak at home one of the main languages spoken in their

[2] When we look at the Census, we define second-generation immigrants as children born in the US with at least one parent born abroad.
[3] The numbers are very similar in the Census 2010: 88% of native and second-generation immigrants, and 93% of first generation immigrants, attend public schools.
[4] The differences across groups in the Census 2010 are similar.

country of birth (the list of the main languages spoken in a country is taken from the 17th version of the Ethnologue.)

Sample of second generation immigrants: We use two samples of second generation immigrants. The first one includes US born children whose mothers were born abroad. In the birth certificates of children born in Florida it is indicated whether the mother is born in the US or abroad. For a subset of countries or territories (Canada, Cuba, Guam, Mexico, Puerto Rico, US, and Virgin Islands) the place of birth of the mother is also indicated.[5] For all the other foreign born mothers we know the mother was born abroad but do not have a country of birth. To construct the sample of second generation immigrants we use the information on the country of origin of the mother when available (Mexico, Puerto Rico and Canada) or the language spoken at home for individuals whose mother was born abroad but we do not have a country of origin. As we have birth certificates only for children born in Florida and the maternal place of birth is listed in the birth certificates, this group includes only children born in Florida. The second sample includes the group defined above along with all children born in the US (including children born outside Florida) and who speak a language different than English at home.[6] We refer to the former sample as "second generation", and to the latter as "second generation, extended definition".

Matching languages and countries. For some students to identify the country of origin we use the language spoken at home. To create a match between languages and countries of origin we proceed as follows. For most languages there is a one to one association between language and country of origin. For languages spoken in multiple countries (for example Portuguese) we calculate the Long-Term Orientation cultural variable as a weighted average of the Long-Term Orientation of all the countries in which Portuguese is the main language spoken in the country. We use as weights the fraction of first generation immigrants in our sample speaking that language and born in a country where the language is indeed one of the spoken languages.

Construction of the clusters for standard errors. In all the regression we cluster the standard errors to account for correlation within the country of origin/language depending on whether we attribute the Hofstede variable using country of origin or language of origin. When we pool together first and second generation in the same regression to create parsimonious clusters and to avoid creating a

[5] We use the information of the foreign countries or territories only for mothers born in Canada, Mexico, and Puerto Rico for which we have the Long Term Orientation variable. We drop all the students whose mothers are born in Cuba, Guam, and Virgin Islands and speak a language associated with these countries.
[6] This second sample of extended generation students can be second generation immigrants on the mother side if they are born outside Florida or on the father side, or they can be third generation immigrants.

separate cluster country and language (for example "China" and "Chinese") we use the following methodology. Whenever at least 60% of the 1st generation speakers of a given language come from one specific country, we attribute that language to the cluster dimension corresponding to that country. This happens in all cases but for Arabic, Croatian, French, and Spanish (when we are not able to identify the country of origin to the mother). In these cases, since it would be hard to map the language to a unique country of origin, we treat these languages as having their own cluster.

A.2.4. Description of variables for the Program for International Student Assessment

In reporting the test score in mathematics, reading and science, PISA assigns a probability distribution to each possible response pattern in each test to describe the ability associated with that pattern. From this distribution, PISA draws a set of five values associated with each student. These values are called plausible values because they represent alternative estimates of the student ability that could have been obtained. In our specification, we report the regressions for the average of the plausible values. We cluster the standard errors by country of origin. We also test the robustness of our results to the procedure recommended by the OECD, where we estimate one regression for each set of plausible values and report the arithmetic average of these estimates. For this procedure, we also apply the Fay's Balanced Repeated Replicated methodology, which estimates the standard errors taking into account PISA's stratified, two-stage sample design.[7]

Dependent variables		
Name of the variable	*Description*	*Source*
Math score	Average of the 5 plausible values for Math. This variable is present in the 2003, 2006, 2009, and 2012 PISA waves.	Created using variables PVMATH1 through PVMATH5
Reading score	Average of the 5 plausible values for Reading. This variable is present in the 2003, 2006, 2009, and 2012 PISA waves.	Created using variables PVREAD1 through PVREAD5
Science score	Average of the 5 plausible values for Science. This variable is present in the 2003, 2006, 2009, and 2012 PISA waves.	Created using variables PVSCIE1 through PVSCIE5
Retention	A dummy variable equal to 1 if a student repeated at least one year during his/her school career. This variable is present in the 2003, 2009, and 2012 PISA waves.	It is calculated starting from questions ST22Q01, ST22Q02 and ST22Q03 in wave 2003, questions ST07Q01, ST07Q02, ST07Q03 in wave 2009,

[7] PISA's stratification consists in selecting randomly the school in the first stage. In the second stage, students in each school are randomly assigned to carry out the test in all three subjects.

		questions ST07Q01, ST07Q02, ST07Q03 in wave 2012
Truancy	A dummy variable equal to 1 if the student, when asked "In the last two full weeks of school, how many times did you skip a whole school day?" ticked one of the following answers: "one or two times", "three or four times", "five or more times"; equal to 0 if s/he ticked the answer "none". This variable is present only in the 2012 PISA wave.	Calculated using variable ST09, present only in wave 2012.
Individual controls		
Name of the variable	*Description*	*Source*
Male	A variable equal to one if the student is a boy	Calculated using variable ST03Q01 in wave 2003 and variable ST04Q01 in wave 2006, 2009, 2012.
Age	Age expressed in years.	Corresponds to the variable AGE
Grade	School grade	Corresponds to the variable ST01Q01
Parents' education	The variable takes values which correspond to the following education levels: none; primary education (ISCED 1); lower secondary education (ISCED 2); upper secondary education (ISCED 3B, C); post-secondary non-tertiary education (ISCED 3A, 4); first stage of tertiary education (ISCED 5B); second stage of tertiary education (ISCED 5A, 6). In all the regressions which control for this set of variables "none" is the omitted category.	Constructed using the variable HISCED
Wealth	*Wealth* is an index of family wealth possessions built by OECD – PISA based on the student's responses to several questions asking whether there are specific items in the student's home. Such items vary across waves, and some of them are specific of the country where the test is administered. This variable is present in the 2006, 2009, and 2012 PISA waves. For details see: https://www.oecd.org/pisa/.	Corresponds to the variable WEALTH

A.3. Additional Tables

Table A1
List of countries, first generation immigrants, unrestricted and restricted sample

COUNTRY	1st generation, no language restriction	1st generation, language restriction	COUNTRY	1st generation, no language restriction	1st generation, language restriction
Albania	388	339	Korea, Republic of	639	388
Argentina	3,754	3,631	Lithuania	91	81
Australia	172	151	Malaysia	71	52
Austria	70		Mexico	15,750	15,133
Bangladesh	342	271	Morocco	132	117
Belgium	115	33	Nepal	40	
Bosnia and Herzegovina	369	327	Netherlands	154	66
Brazil	3,028	2,511	New Zealand	45	34
Bulgaria	182	114	Nigeria	204	179
Canada	2,312	1,782	Norway	59	
Chile	786	721	Pakistan	495	477
China	1,421	492	Peru	3,368	3,197
Colombia	10,387	9,856	Philippines	1,697	1,603
Croatia	71	55	Poland	188	134
Czech Republic	35		Portugal	99	47
Denmark	40		Puerto Rico	7,640	7,610
Dominican Republic	2,342	2,329	Romania	287	154
Egypt	246	190	Russia	1,250	469
El Salvador	1,017	960	Saudi Arabia	302	69
Estonia	30		Singapore	69	53
Finland	69	49	South Africa	288	254
France	503	381	Spain	687	482
Germany	2,657	512	Sri Lanka	38	35
Ghana	52	46	Sweden	161	88
Greece	220	72	Switzerland	86	30
Hong Kong	48	38	Taiwan	75	47
Hungary	141	85	Tanzania, United Rep. of	37	
Iceland	77		Thailand	240	144
India	1,380	1,322	Trinidad and Tobago	513	508
Indonesia	69	35	Turkey	196	114
Iran	111	76	Ukraine	612	321
Iraq	56	51	United Kingdom	2,366	2,103
Ireland	76	67	Uruguay	1,120	1,084
Israel	514	481	Venezuela	6,453	6,071
Italy	656	178	Vietnam	773	659
Japan	1,562	223	Zimbabwe	44	39
Jordan	144	121	Non-disclosed countries	275	318
			Total	81,986	69,659

Notes. The table reports the number of observations by country of origin for both the unrestricted and restricted definition of first generation immigrants. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. To identify unrestricted first generation immigrants we use only the information on the country of origin of the student. We also use a restricted definition of first generation immigrant when we restrict our analysis to those students who speak at home one of the languages spoken in their country of origin (we eliminate first generation immigrants who do not speak at home one the languages of their country of origin). The total in column 1 refers to the sample used to run the regression shown in Table 2, column (2). The total in column 2 refers to the sample used to run the regression shown in Table 2, column (5). For confidentiality reasons with the FLDOE, we cannot report the number of observations for groups whose size is smaller than 30. We refer to the sum of all of them, as Non-disclosed countries. See the text of this Appendix for details.

Table A2
List of languages, second generation immigrants, restricted and extended definition

LANGUAGE (or MATERNAL COUNTRY OF BIRTH)	2nd generation	2nd generation, extended definition	LANGUAGE (or MATERNAL COUNTRY OF BIRTH)	2nd generation	2nd generation, extended definition
Afrikaans		59	Korean	428	784
Akan		43	Lao	304	497
Albanian	208	426	Lithuanian		57
Amharic	50	79	Malay	88	152
Arabic	1,878	3,205	Malayalam	127	265
Armenian	36	68	Marathi		49
Bengali	412	624	Mexico (country)	34,556	34,556
Bulgarian	43	70	Nepali		50
Chinese	1,830	3,153	Norwegian		52
Croatian	50	83	Panjabi	41	72
Czech	78	116	Persian, Iranian	232	372
Canada (country)	3,769	3,769	Polish	349	690
Danish		45	Portuguese	2,294	3,965
Dutch	143	224	Puerto Rico (country)	13,391	13,391
Estonian, Standard	69	105	Romanian	191	304
Finnish	46	96	Russian	528	1,134
French	1,668	2,858	Serbian	314	507
German	369	752	Slovak	37	63
Greek	180	658	Spanish	65,294	187,672
Gujarati	401	801	Swahili		30
Haitian	24,527	30,914	Swedish	97	154
Hausa	57	77	Tagalog	928	1,714
Hebrew	302	643	Tamil	91	189
Hindi	368	676	Telugu	163	331
Hmong		131	Thai	202	303
Hungarian	118	208	Turkish	122	236
Italian	210	684	Ukrainian	44	114
Japanese	178	340	Urdu	854	1,339
Kanjobal		90	Vietnamese	2,500	4,442
Kannada		46	Yoruba	62	116
Khmer	213	461	Not-disclosed languages	323	278
				160,763	305,382

Notes. The table reports the number of observations by language spoken at home. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. To identify "2nd generation" immigrants we include all children born in Florida whose mothers were born abroad. If the country of origin of the mothers is indicated in the birth certificate (Canada, Mexico, Puerto Rico) we attribute the corresponding country to the student. If the birth certificate indicates only that the mother was born abroad, we use the language spoken at home to attribute the Long Term Orientation variable. To identify "2nd generation, extended definition" immigrants we consider in addition to the "2nd generation" immigrants every other student who speaks a language different from English at home. We match the language with the LTO variable according to the procedure explained in this Appendix. For confidentiality reasons with the FLDOE, we cannot report the number of observations for groups whose size is smaller than 30. We refer to the sum of all of them, as Non-disclosed languages.

Table A3
Descriptive statistics of students attending public and private schools in Florida, Natives, First and Second Generation Immigrants

Panel A: Enrollment in Public School						
	Natives		1st generation		2nd generation	
	Obs.	Mean	Obs.	Mean	Obs.	Mean
Census 2000 (5%)						
Kindergarten	6,415	82.29%	646	84.83%	2,582	81.14%
Grade 1 to 4	26,500	86.69%	3,279	93.44%	9,438	86.76%
Grade 5 to 8	26,581	87.86%	4,477	93.52%	8,244	87.58%
Grade 9 to 12	21,813	90.58%	5,289	93.67%	6,576	87.61%
Overall sample	81,309	87.77%	13,691	93.15%	26,840	86.68%
Census 2010 (1%)						
Kindergarten	1,147	82.65%	91	74.73%	632	83.23%
Grade 1 to 4	4,556	85.45%	557	89.77%	2,301	88.57%
Grade 5 to 8	5,047	85.56%	855	90.64%	2,036	87.18%
Grade 9 to 12	4,726	87.85%	1,114	92.91%	1,861	88.07%
Overall sample	15,476	86.01%	2,617	90.87%	6,830	87.53%

Panel B: Family Income (USD)						
	Natives		1st generation		2nd generation	
	Obs.	Mean	Obs.	Mean	Obs.	Mean
Census 2000 (5%)						
Public school	71,364	55,838	12,648	43,526	23,264	52,842
Private school	9,945	102,409	928	86,163	3,576	106,669
Overall sample	81,309	61,534	13,576	46,441	26,840	60,014
Census 2010 (1%)						
Public school	13,311	71,906	2,372	54,343	5,978	65,630
Private school	2,165	123,921	238	115,190	852	136,119
Overall sample	15,476	79,183	2,610	59,892	6,830	74,423

Notes. The table reports the fraction of students by grade and family income enrolled in public and private schools in Florida. The data are based on Census 2000 and 2010 and report the statistics for natives, first generation immigrants and second generation immigrants. "2nd generation" is identified as having at least the mother or the father born abroad.

Table A4
Long-Term Orientation and maternal characteristics, extended second generation

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Long-Term Orientation	**0.697*** **	**0.449*** **	**0.452*** **	**0.377*** **	**0.024**	**-0.020** **	**-0.139*** **	**-0.016*** **
	(0.124)	**(0.117)**	**(0.071)**	**(0.101)**	**(0.014)**	**(0.008)**	**(0.036)**	**(0.003)**
Mother high school graduate	0.083***	0.022**	0.089***	0.032*	0.013	-0.001	-0.021**	-0.009***
	(0.020)	(0.010)	(0.019)	(0.018)	(0.008)	(0.001)	(0.009)	(0.002)
Mother attended some college	0.170***	0.052***	0.177***	0.067***	0.018	-0.001	-0.028***	-0.013***
	(0.020)	(0.015)	(0.014)	(0.015)	(0.018)	(0.002)	(0.009)	(0.002)
Mother 4yr college graduate	0.337***	0.153***	0.317***	0.175***	0.049***	-0.006**	-0.051***	-0.016***
	(0.015)	(0.008)	(0.011)	(0.016)	(0.010)	(0.002)	(0.010)	(0.002)
Mother teen pregnancy	-0.070***	0.003	-0.019	-0.053	0.042	0.012***	0.049***	0.005
	(0.024)	(0.036)	(0.027)	(0.049)	(0.031)	(0.002)	(0.010)	(0.003)
Mother married at time of birth	0.102***	0.056***	0.084***	0.048***	0.037***	-0.007***	-0.058***	-0.008***
	(0.007)	(0.005)	(0.005)	(0.008)	(0.008)	(0.000)	(0.005)	(0.001)
Number of older siblings	-0.028***	-0.012***	-0.039***	-0.008	-0.005***	0.003***	0.021***	0.003***
	(0.004)	(0.003)	(0.006)	(0.005)	(0.001)	(0.001)	(0.001)	(0.001)
Median income in zipcode of birth (100,000 of $)	0.173***	0.002	0.143***	0.044**	0.064***	0.004	-0.039**	-0.011***
	(0.026)	(0.032)	(0.013)	(0.018)	(0.019)	(0.003)	(0.017)	(0.002)
Male	0.128***	-0.047***	-0.067***	-0.067***	-0.042***	0.000	0.096***	0.013***
	(0.020)	(0.008)	(0.017)	(0.008)	(0.007)	(0.000)	(0.005)	(0.002)
Age in months	-0.010***	-0.016***	-0.012***	-0.011***	0.001	0.001***	0.007***	-0.001***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.000)	(0.000)	(0.000)
Free or Reduced Priced Lunch	-0.154***	-0.035***	-0.163***	-0.064***	-0.018**	0.000	0.037***	0.006***
	(0.008)	(0.008)	(0.009)	(0.008)	(0.008)	(0.002)	(0.003)	(0.000)
Special education	-0.658***	-0.233***	-0.753***	-0.187***	-0.173***	0.006***	0.017***	0.037***
	(0.022)	(0.006)	(0.024)	(0.008)	(0.012)	(0.000)	(0.002)	(0.001)
Enrolled in Limited English proficiency program	-0.612***		-0.689***		-0.204**	0.002**	0.046***	0.070***
	(0.005)		(0.011)		(0.080)	(0.001)	(0.005)	(0.003)
Enrolled in Limited English proficiency program in grade 3		-0.005		-0.114***				
		(0.015)		(0.012)				
Math score in grade 3		-0.368***						
		(0.008)						
Reading score in grade 3				-0.417***				
				(0.006)				
Observations	184,331	62,005	184,309	61,668	6,623	960,054	425,110	762,581
R-squared	0.368	0.334	0.379	0.319	0.324	0.182	0.150	0.121
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.874	0.045	0.208	0.042
Dependent Variable (sd)	1.000	0.778	1.000	0.809	0.332	0.057	0.406	0.200
Long-Term Orientation (mean)	0.207	0.209	0.207	0.210	0.214	0.206	0.206	0.206
Long-Term Orientation (sd)	0.143	0.149	0.143	0.149	0.158	0.144	0.146	0.144
Long-Term Orientation (beta)	0.100	0.086	0.065	0.070	0.011	-0.049	-0.050	-0.011
N_clust	90	79	90	79	58	90	82	90

Notes. The table replicates the results in Table 6 for the following dependent variables: students' Florida Comprehensive Assessment Test reading score in grade 3 (standardized with mean 0 and variance 1), the change in reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year) and retention (an indicator for whether the student repeats the same grade at least once) measured in grades 3-12, and disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident defined as serious offences often leading to suspension) measured in grades 6-12.. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes the extended version of second generation immigrants defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. See details in the text and this Appendix for how the matching between languages and countries has been implemented. Individual controls are: age in months, a male dummy, an indicator variable for free or reduced free lunch eligibility, a dummy indicating if the student is enrolled in a limited English proficiency program and indicator for special education needs. Maternal controls include education dummies (high school, some college and college graduate; the excluded group is college drop-out), whether the mother was younger than 16 when she gave birth, the mother's marital status at the time of birth, the number of older siblings, and the median income in the zip code of the place of residence at the time of birth (measured in 1999). The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables in this Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table A5
Long-Term Orientation and educational outcomes, robustness to Hanushek et al. measure of educational selection
First and second generation immigrants (extended definition), pooled

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Long-Term Orientation	**0.372*** **	**0.278*** **	**0.168** **	**0.163* **	**0.054* **	**-0.018** **	**-0.076*** **	**-0.016*** **
	(0.098)	**(0.059)**	**(0.068)**	**(0.085)**	**(0.031)**	**(0.007)**	**(0.020)**	**(0.004)**
Log GDP pc year 2000 ppp	-0.102***	-0.112***	-0.044*	-0.096***	-0.011	0.007***	0.022***	0.005***
	(0.029)	(0.019)	(0.024)	(0.023)	(0.008)	(0.002)	(0.007)	(0.001)
Distance from the US (log)	-0.076***	-0.039**	-0.079***	-0.058**	-0.025***	0.001	0.000	0.006***
	(0.021)	(0.018)	(0.017)	(0.025)	(0.006)	(0.001)	(0.004)	(0.001)
Savings over GDP/100	0.552***	0.450***	0.271*	0.225	0.088	-0.021*	-0.118**	-0.009
	(0.168)	(0.138)	(0.142)	(0.226)	(0.063)	(0.012)	(0.054)	(0.007)
Education selection, Hanushek et al.	1.188***	0.463***	1.147***	0.894***	0.428***	0.013*	-0.074***	-0.084***
	(0.123)	(0.169)	(0.090)	(0.272)	(0.054)	(0.007)	(0.017)	(0.008)
Observations	93,854	34,612	93,821	34,508	22,089	762,302	436,380	616,034
R-squared	0.429	0.404	0.455	0.415	0.386	0.194	0.125	0.119
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.789	0.048	0.179	0.040
Dependent Variable (sd)	1.000	0.779	1.000	0.832	0.408	0.068	0.383	0.196
Long-Term Orientation (mean)	0.285	0.284	0.285	0.284	0.293	0.289	0.290	0.287
Long-Term Orientation (sd)	0.143	0.149	0.143	0.148	0.166	0.156	0.161	0.154
Long-Term Orientation (beta)	0.053	0.053	0.024	0.029	0.022	-0.040	-0.032	-0.013
N_clust	109	101	109	101	105	112	109	111

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes the pooled sample of first generation (defined using both the information on the country of origin and the language spoken at home) and second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. The dependent variables include: students' Florida Comprehensive Assessment Test math and reading score in grade 3 (standardized with mean 0 and variance 1), the change in math and reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year) and retention (an indicator for whether the student repeats the same grade at least once) measured in grades 3-12, and disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident defined as serious offences often leading to suspension) measured in grades 6-12. All the regressions include the same individual controls described in Table 2 (coefficients not reported). The country controls are described in the appendix. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. The additional country-controls and all the remaining variables are described in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table A6
Long-Term Orientation and educational outcomes, robustness to the inclusion of the PISA score in mathematics in the country of origin
First and second generation immigrants (extended definition), pooled

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to	(3) Reading score, 3rd	(4) Reading score, change 3rd to	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Long-Term Orientation	**0.398*** **	**0.327*** **	**0.285*** **	**0.269** **	**0.045**	**-0.014** **	**-0.071*** **	**-0.012** **
	(0.124)	**(0.104)**	**(0.098)**	**(0.126)**	**(0.034)**	**(0.006)**	**(0.026)**	**(0.006)**
Log GDP pc year 2000 ppp	-0.125***	-0.141***	-0.056***	-0.124***	-0.022***	0.008***	0.030***	0.004***
	(0.026)	(0.028)	(0.020)	(0.030)	(0.007)	(0.001)	(0.005)	(0.001)
Distance from the US (log)	-0.019	-0.022	-0.032	-0.029	-0.002	0.002**	-0.003	0.000
	(0.027)	(0.019)	(0.024)	(0.021)	(0.005)	(0.001)	(0.004)	(0.001)
Savings over GDP/100	-0.028	0.223*	-0.149	0.174	-0.044	-0.011	-0.073**	-0.001
	(0.208)	(0.121)	(0.234)	(0.225)	(0.081)	(0.010)	(0.037)	(0.021)
PISA score in math	0.049	0.020	0.010	-0.016	0.025*	-0.005***	-0.017*	-0.001
	(0.043)	(0.045)	(0.032)	(0.052)	(0.013)	(0.002)	(0.010)	(0.002)
Observations	109,331	40,560	109,304	40,438	26,202	889,490	510,495	718,548
R-squared	0.420	0.391	0.438	0.400	0.364	0.189	0.123	0.112
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.806	0.048	0.171	0.037
Dependent Variable (sd)	1.000	0.773	1.000	0.836	0.396	0.067	0.376	0.190
Long-Term Orientation (mean)	0.313	0.309	0.313	0.309	0.319	0.315	0.317	0.313
Long-Term Orientation (sd)	0.169	0.174	0.169	0.174	0.190	0.181	0.186	0.179
Long-Term Orientation (beta)	0.067	0.074	0.048	0.056	0.022	-0.038	-0.035	-0.011
N_clust	108	103	108	103	102	110	108	109

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes the pooled sample of first generation (defined using both the information on the country of origin and the language spoken at home) and second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. The dependent variables include: students' Florida Comprehensive Assessment Test math and reading score in grade 3 (standardized with mean 0 and variance 1), the change in math and reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year) and retention (an indicator for whether the student repeats the same grade at least once) measured in grades 3-12, and disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident defined as serious offences often leading to suspension) measured in grades 6-12. All the regressions include the same individual controls described in Table 2 (coefficients not reported). The country controls are described in the appendix. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. The additional country-controls and all the remaining variables are described in the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table A7
Futureless language (Chen) and educational outcomes, robustness to the exclusion of Spanish speakers

PANEL A: 1st generation + 2nd generation (extended definition), exclusion of Spanish speakers

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Futureless Language (Chen)	**0.302*** **	**0.216** **	**0.172*** **	**0.182** **	**0.028** **	**-0.012** **	**-0.047** **	**-0.003** **
	(0.107)	**(0.093)**	**(0.053)**	**(0.085)**	**(0.011)**	**(0.006)**	**(0.022)**	**(0.001)**
Observations	67,788	26,033	67,757	25,964	18,646	581,789	343,900	465,393
R-squared	0.405	0.422	0.417	0.420	0.353	0.168	0.119	0.114
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.877	0.042	0.133	0.023
Dependent Variable (sd)	1.000	0.766	1.000	0.844	0.328	0.064	0.339	0.149
Futureless Language (mean)	0.108	0.110	0.108	0.109	0.093	0.102	0.100	0.101
Futureless Language (sd)	0.310	0.312	0.310	0.312	0.291	0.303	0.300	0.301
Futureless Language (beta)	0.094	0.088	0.053	0.067	0.025	-0.055	-0.042	-0.006
N_clust	80	73	80	73	70	85	83	84

PANEL B: 1st generation, exclusion of Spanish speakers

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Futureless Language (Chen)	**0.305*** **	**0.237** **	**0.110*** **	**0.161** **	**0.004**	**-0.005* **	**-0.037*** **	**-0.003* **
	(0.050)	**(0.104)**	**(0.038)**	**(0.069)**	**(0.018)**	**(0.003)**	**(0.007)**	**(0.001)**
Observations	30,274	11,985	30,261	11,947	11,392	321,798	204,298	253,240
R-squared	0.529	0.566	0.536	0.565	0.400	0.213	0.145	0.150
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.867	0.045	0.133	0.024
Dependent Variable (sd)	1.000	0.782	1.000	0.862	0.339	0.067	0.340	0.155
Futureless Language (mean)	0.067	0.063	0.067	0.063	0.066	0.072	0.073	0.068
Futureless Language (sd)	0.250	0.244	0.250	0.243	0.248	0.258	0.260	0.252
Futureless Language (beta)	0.076	0.074	0.027	0.045	0.003	-0.020	-0.028	-0.005
N_clust	77	70	77	70	68	84	81	82

Notes. The table repeats the same analysis as Table 13, Panel A and B in the text excluding students speaking Spanish. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. In Panel A, the sample pools together first generation immigrants defined using the information on both the country of origin and the language spoken at home and the extended version of second generation immigrants defined using the information on the country of origin of the mother when available (Canada) or the language spoken at home for individuals whose mother was born either in the US or abroad (when the country of origin of the mother is not available). See details in the text and this Appendix for how the matching between languages and countries has been implemented. Panel B includes only first generation immigrants. The dependent variables are: students' Florida Comprehensive Assessment Test math score in grade 3 (standardized with mean 0 and variance 1), the change in math score from grade 3 to grade 8, reading score in grade 3 (standardized with mean 0 and variance 1), change in reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year), disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident, defined as serious offences often leading to suspension), and retention (an indicator for whether the student repeats the same grade at least once). The regressions also include the same individual controls reported in Table A4 (coefficients not reported). Futureless language is a dummy variable equal to 1 for "futureless" languages (languages that do not require "obligatory future time reference use in prediction-based contexts") from Chen (2013). We describe in details all the variables in this Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table A8
Long-Term Orientation and educational outcomes, sample restricted to non-missing values for other cultural variables

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
			Trust					
Long-Term Orientation	**0.669*** **	**0.469*** **	**0.429*** **	**0.437*** **	**0.106*** **	**-0.035*** **	**-0.132*** **	**-0.020*** **
	(0.111)	**(0.080)**	**(0.084)**	**(0.095)**	**(0.025)**	**(0.008)**	**(0.031)**	**(0.005)**
Observations	363,157	130,804	363,090	130,195	78,905	2,807,150	1,569,296	2,282,427
R-squared	0.342	0.310	0.352	0.301	0.338	0.196	0.124	0.087
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.773	0.053	0.213	0.045
Dependent Variable (sd)	1.000	0.780	1.000	0.830	0.419	0.071	0.410	0.206
Long-Term Orientation (mean)	0.208	0.211	0.208	0.211	0.216	0.211	0.213	0.210
Long-Term Orientation (sd)	0.143	0.147	0.143	0.147	0.156	0.150	0.153	0.148
Long-Term Orientation (beta)	0.096	0.088	0.061	0.077	0.039	-0.074	-0.049	-0.014
N_clust	140	133	140	133	134	142	139	141
			Hard work					
Long-Term Orientation	**0.668*** **	**0.469*** **	**0.424*** **	**0.439*** **	**0.106*** **	**-0.035*** **	**-0.132*** **	**-0.020*** **
	(0.112)	**(0.081)**	**(0.085)**	**(0.095)**	**(0.025)**	**(0.008)**	**(0.031)**	**(0.005)**
Observations	360,722	129,909	360,656	129,299	78,347	2,787,641	1,558,233	2,266,907
R-squared	0.342	0.310	0.353	0.301	0.338	0.197	0.124	0.087
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.772	0.053	0.213	0.045
Dependent Variable (sd)	1.000	0.780	1.000	0.830	0.419	0.071	0.410	0.207
Long-Term Orientation (mean)	0.207	0.209	0.207	0.209	0.215	0.210	0.211	0.209
Long-Term Orientation (sd)	0.142	0.146	0.142	0.146	0.156	0.149	0.152	0.148
Long-Term Orientation (beta)	0.095	0.088	0.060	0.077	0.039	-0.074	-0.049	-0.014
N_clust	129	123	129	123	123	131	128	130
			Individualism					
Long-Term Orientation	**0.547*** **	**0.388*** **	**0.337*** **	**0.278*** **	**0.096*** **	**-0.023*** **	**-0.118*** **	**-0.013*** **
	(0.088)	**(0.059)**	**(0.069)**	**(0.073)**	**(0.025)**	**(0.004)**	**(0.014)**	**(0.003)**
Observations	118,432	44,057	118,391	43,918	28,472	964,622	554,107	778,760
R-squared	0.429	0.385	0.443	0.394	0.367	0.187	0.123	0.110
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.812	0.046	0.163	0.036
Dependent Variable (sd)	1.000	0.762	1.000	0.828	0.391	0.067	0.369	0.186
Long-Term Orientation (mean)	0.326	0.324	0.326	0.324	0.328	0.326	0.326	0.324
Long-Term Orientation (sd)	0.184	0.190	0.184	0.190	0.199	0.192	0.195	0.190
Long-Term Orientation (beta)	0.099	0.094	0.060	0.060	0.049	-0.065	-0.062	-0.013
N_clust	114	111	114	111	109	115	113	114
			Indulgence/restraint					
Long-Term Orientation	**0.670*** **	**0.467*** **	**0.428*** **	**0.437*** **	**0.107*** **	**-0.035*** **	**-0.132*** **	**-0.020*** **
	(0.112)	**(0.081)**	**(0.085)**	**(0.096)**	**(0.025)**	**(0.008)**	**(0.031)**	**(0.005)**
Observations	362,627	130,582	362,560	129,973	78,744	2,801,558	1,565,824	2,277,991
R-squared	0.343	0.310	0.353	0.301	0.338	0.195	0.124	0.087
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.773	0.053	0.213	0.045
Dependent Variable (sd)	1.000	0.779	1.000	0.830	0.419	0.071	0.409	0.206
Long-Term Orientation (mean)	0.208	0.211	0.208	0.211	0.216	0.211	0.213	0.210
Long-Term Orientation (sd)	0.143	0.147	0.143	0.147	0.156	0.150	0.153	0.148
Long-Term Orientation (beta)	0.096	0.088	0.061	0.077	0.040	-0.075	-0.049	-0.014
N_clust	141	134	141	134	135	143	140	142

Table A8-continued
Long-Term Orientation and educational outcomes, sample restricted to non-missing values for other cultural variables

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
				Masculinity/feminity				
Long-Term Orientation	**0.547*** **	**0.388*** **	**0.337*** **	**0.278*** **	**0.096*** **	**-0.023*** **	**-0.118*** **	**-0.013*** **
	(0.088)	**(0.059)**	**(0.069)**	**(0.073)**	**(0.025)**	**(0.004)**	**(0.014)**	**(0.003)**
Observations	118,432	44,057	118,391	43,918	28,472	964,622	554,107	778,760
R-squared	0.429	0.385	0.443	0.394	0.367	0.187	0.123	0.110
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.812	0.046	0.163	0.036
Dependent Variable (sd)	1.000	0.762	1.000	0.828	0.391	0.067	0.369	0.186
Long-Term Orientation (mean)	0.326	0.324	0.326	0.324	0.328	0.326	0.326	0.324
Long-Term Orientation (sd)	0.184	0.190	0.184	0.190	0.199	0.192	0.195	0.190
Long-Term Orientation (beta)	0.099	0.094	0.060	0.060	0.049	-0.065	-0.062	-0.013
N_clust	114	111	114	111	109	115	113	114
				Power Distance				
Long-Term Orientation	**0.547*** **	**0.388*** **	**0.337*** **	**0.278*** **	**0.096*** **	**-0.023*** **	**-0.118*** **	**-0.013*** **
	(0.088)	**(0.059)**	**(0.069)**	**(0.073)**	**(0.025)**	**(0.004)**	**(0.014)**	**(0.003)**
Observations	118,432	44,057	118,391	43,918	28,472	964,622	554,107	778,760
R-squared	0.429	0.385	0.443	0.394	0.368	0.187	0.123	0.110
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.812	0.046	0.163	0.036
Dependent Variable (sd)	1.000	0.762	1.000	0.828	0.391	0.067	0.369	0.186
Long-Term Orientation (mean)	0.326	0.324	0.326	0.324	0.328	0.326	0.326	0.324
Long-Term Orientation (sd)	0.184	0.190	0.184	0.190	0.199	0.192	0.195	0.190
Long-Term Orientation (beta)	0.099	0.094	0.060	0.060	0.049	-0.065	-0.062	-0.013
N_clust	114	111	114	111	109	115	113	114
				Uncertainty Avoidance				
Long-Term Orientation	**0.547*** **	**0.388*** **	**0.337*** **	**0.278*** **	**0.096*** **	**-0.023*** **	**-0.118*** **	**-0.013*** **
	(0.088)	**(0.059)**	**(0.069)**	**(0.073)**	**(0.025)**	**(0.004)**	**(0.014)**	**(0.003)**
Uncertainty Avoidance Index	-0.126	-0.033	-0.135	0.065	-0.035	0.015***	0.053***	0.001
	(0.092)	(0.058)	(0.087)	(0.065)	(0.022)	(0.005)	(0.016)	(0.005)
Observations	118,432	44,057	118,391	43,918	28,472	964,622	554,107	778,760
R-squared	0.429	0.385	0.443	0.394	0.368	0.188	0.123	0.110
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.812	0.046	0.163	0.036
Dependent Variable (sd)	1.000	0.762	1.000	0.828	0.391	0.067	0.369	0.186
Long-Term Orientation (mean)	0.326	0.324	0.326	0.324	0.328	0.326	0.326	0.324
Long-Term Orientation (sd)	0.184	0.190	0.184	0.190	0.199	0.192	0.195	0.190
Long-Term Orientation (beta)	0.099	0.094	0.060	0.060	0.049	-0.065	-0.062	-0.013
N_clust	114	111	114	111	109	115	113	114

Notes. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes the pooled sample of first generation (defined using both the information on the country of origin and the language spoken at home) and second generation immigrants (extended definition) defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico), or the language spoken at home for the remaining students for which the country of origin of the mother is not available. The dependent variables include: students' Florida Comprehensive Assessment Test math and reading score in grade 3 (standardized with mean 0 and variance 1), the change in math and reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year) and retention (an indicator for whether the student repeats the same grade at least once) measured in grades 3-12, and disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident defined as serious offences often leading to suspension) measured in grades 6-12. All the regressions include the same individual and country controls described in Table 9 (coefficients not reported). For each panel the sample is restricted to those observations for which the cultural variable is not missing. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table A9
Long-Term Orientation and educational outcomes, Heterogeneous effects, second generation (extended definition)

VARIABLES	(1) Math score, 3rd grade	(2) Math score, change 3rd to 8th	(3) Reading score, 3rd grade	(4) Reading score, change 3rd to 8th	(5) Graduation	(6) % Absent Days	(7) Disciplinary Incident	(8) Retention
Long-Term Orientation (LTO)	**0.818*** **	**0.448*** **	**0.437*** **	**0.353** **	**-0.057**	**-0.035** **	**-0.270*** **	**-0.035** **
	(0.202)	**(0.164)**	**(0.111)**	**(0.173)**	**(0.075)**	**(0.018)**	**(0.099)**	**(0.014)**
Mother high school graduate*LTO	-0.209**	-0.064	-0.027	-0.120	0.090	0.017	0.126**	0.013
	(0.087)	(0.074)	(0.064)	(0.093)	(0.072)	(0.012)	(0.049)	(0.010)
Mother attended some college*LTO	-0.358***	-0.258***	-0.047	-0.190*	0.090	0.024*	0.170***	0.025**
	(0.093)	(0.093)	(0.065)	(0.100)	(0.081)	(0.014)	(0.047)	(0.010)
Mother 4yr college graduate*LTO	-0.268***	-0.092	0.051	-0.176	-0.000	0.031**	0.202***	0.024***
	(0.099)	(0.112)	(0.081)	(0.134)	(0.054)	(0.014)	(0.044)	(0.009)
Mother teen pregnancy*LTO	-0.679**	-0.025	-0.877***	-0.199	-0.356	0.030	0.202	0.138***
	(0.341)	(0.488)	(0.277)	(0.373)	(0.495)	(0.021)	(0.162)	(0.041)
Mother married at time of birth*LTO	0.145*	0.103	0.002	0.274***	0.133	0.001	-0.007	0.001
	(0.081)	(0.095)	(0.063)	(0.089)	(0.106)	(0.005)	(0.032)	(0.006)
Number of older siblings*LTO	-0.020	-0.046	-0.024	-0.051	0.008	0.001	-0.019	-0.002
	(0.023)	(0.032)	(0.032)	(0.033)	(0.013)	(0.003)	(0.013)	(0.003)
Median income in zipcode of birth (100,000 of $)*LTO	-0.022	0.224	0.042	-0.001	-0.212**	-0.008	0.083	0.012
	(0.204)	(0.144)	(0.144)	(0.174)	(0.098)	(0.013)	(0.078)	(0.010)
Free or Reduced Priced Lunch*LTO	0.039	-0.109*	0.048	-0.066	0.021	-0.005	-0.051**	-0.005
	(0.073)	(0.058)	(0.066)	(0.068)	(0.038)	(0.007)	(0.021)	(0.003)
Mother high school graduate	0.122***	0.033*	0.094***	0.055*	-0.005	-0.005	-0.044***	-0.011***
	(0.027)	(0.019)	(0.028)	(0.030)	(0.015)	(0.003)	(0.010)	(0.004)
Mother attended some college	0.240***	0.103***	0.187***	0.105***	-0.000	-0.006	-0.061***	-0.018***
	(0.020)	(0.025)	(0.022)	(0.028)	(0.028)	(0.004)	(0.009)	(0.004)
Mother 4yr college graduate	0.390***	0.169***	0.304***	0.210***	0.053***	-0.012***	-0.094***	-0.022***
	(0.017)	(0.025)	(0.022)	(0.032)	(0.010)	(0.004)	(0.008)	(0.002)
Mother teen pregnancy	0.048	0.008	0.128***	-0.021	0.102	0.006	0.013	-0.019***
	(0.057)	(0.088)	(0.041)	(0.065)	(0.067)	(0.005)	(0.031)	(0.007)
Mother married at time of birth	0.074***	0.037**	0.084***	-0.003	0.012	-0.007***	-0.055***	-0.008***
	(0.014)	(0.018)	(0.012)	(0.020)	(0.023)	(0.001)	(0.006)	(0.001)
Number of older siblings	-0.024***	-0.004	-0.035***	0.002	-0.007**	0.003***	0.024***	0.004***
	(0.007)	(0.008)	(0.011)	(0.008)	(0.003)	(0.001)	(0.002)	(0.001)
Median income in zipcode of birth (100,000 of $)	0.177***	-0.049	0.134***	0.043	0.113***	0.006	-0.057*	-0.013***
	(0.048)	(0.048)	(0.029)	(0.038)	(0.031)	(0.005)	(0.029)	(0.004)
Free or Reduced Priced Lunch	-0.163***	-0.012	-0.174***	-0.050***	-0.022*	0.001	0.049***	0.007***
	(0.014)	(0.013)	(0.014)	(0.015)	(0.012)	(0.003)	(0.004)	(0.001)
Observations	184,331	62,005	184,309	61,668	6,623	960,054	425,110	762,581
R-squared	0.369	0.334	0.379	0.319	0.325	0.183	0.151	0.121
Year*school FE	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	-	-	-	-	-	YES	YES	YES
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.000	0.874	0.045	0.208	0.042
Dependent Variable (sd)	1.000	0.778	1.000	0.809	0.332	0.057	0.406	0.200
Long-Term Orientation (mean)	0.207	0.209	0.207	0.210	0.214	0.206	0.206	0.206
Long-Term Orientation (sd)	0.143	0.149	0.143	0.149	0.158	0.144	0.146	0.144
Long-Term Orientation (beta)	0.117	0.086	0.062	0.065	-0.027	-0.088	-0.097	-0.025
N_clust	90	79	90	79	58	90	82	90

Notes. The Table repeats the same analysis reported in Table 10 for the following dependent variables: students' Florida Comprehensive Assessment Test reading score in grade 3 (standardized with mean 0 and variance 1), the change in reading score from grade 3 to grade 8, high school graduation (a dummy for whether the student received a standard diploma within four years after entering the 9th grade for the first time), absence rates (the percentage of days in which the student is absent during the academic year) and retention (an indicator for whether the student repeats the same grade at least once) measured in grades 3-12, and disciplinary incidents (a dummy for whether the student was involved in a disciplinary incident defined as serious offences often leading to suspension) measured in grades 6-12. The table reports OLS estimates, with standard errors clustered at the language/country level. The unit of observation is a student born between 1992 and 2002 and observed during the academic years 2002-2012. The sample includes the extended version of second generation immigrants defined using the information on the country of origin of the mother when available (Canada, Mexico, and Puerto Rico) or the language spoken at home for individuals whose mother was born either in the US or abroad (when the country of origin of the mother is not available). See details in the text and the appendix for how the matching between languages and countries has been implemented. The regressions also include the same individual controls reported in Table A4 (coefficients not reported). Maternal controls are also described in the note of Table A4. The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. We describe in details all the variables in this Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Table A10
List of countries of origin, PISA, first and second generation (mother side and father side)

COUNTRY	1st generation	2nd generation (mother)	2nd generation (father)	COUNTRY	1st generation	2nd generation (mother)	2nd generation (father)
Albania	1,187	375	347	Macedonia	40	37	35
Argentina	217	93	85	Malaysia	119	71	61
Australia	368	189	151	Montenegro	17	88	79
Austria	71	273	198	Morocco	15	190	206
Bangladesh	7	13	11	Netherlands	306	262	308
Belarus	42	554	509	New Zealand	776	938	945
Belgium	155	307	271	Nigeria	4	0	2
Bosnia and Herzegovina	804	2,331	2,063	Pakistan	76	236	266
Brazil	331	225	207	Philippines	339	518	213
Bulgaria	9	36	20	Poland	159	359	279
Canada	5	2	2	Portugal	1,722	3,034	2,866
Chile	19	77	61	Republic of Korea	293	48	49
China	6,987	15,456	14,637	Romania	58	69	75
Colombia	9	6	7	Russian Federation	893	1,556	1,604
Croatia	147	254	212	Saudi Arabia	0	0	1
Czech Republic	80	223	195	Serbia	804	1,002	611
Denmark	37	84	113	Singapore	16	9	10
Egypt	952	769	715	Slovakia	172	582	690
Estonia	136	88	59	Slovenia	13	15	18
France	1,079	1,364	1,171	South Africa	418	114	116
Georgia	1	0	0	Spain	85	376	466
Germany	1,363	1,384	1,147	Sweden	276	396	307
Great Britain	2,686	4,330	4,396	Switzerland	172	116	99
Greece	25	101	165	Taiwan	22	28	11
Hong Kong-China	378	255	475	Tanzania	0	1	0
Hungary	17	20	18	Thailand	37	15	2
India	281	240	247	Turkey	589	3,194	3,497
Iran (Islamic Republic of)	8	7	12	Ukraine	133	566	607
Iraq	213	128	178	United States	1,409	489	636
Italy	383	1,754	3,029	Uruguay	16	97	85
Japan	2	2	0	Viet Nam	76	351	346
Jordan	592	187	149	Zambia	1	0	0
Lithuania	2	0	0				
				Total	27,649	45,884	45,340

Notes. The table reports the number of observations by country of origin for both first and second generation immigrants in the PISA sample. The observations for second generation students are calculated based both on mothers' or fathers' countries of origin. See the text of this Appendix for details.

Table A11
Number of first and second generation immigrants, by country of destination, PISA

COUNTRY	1st generation	2nd generation (mother)	2nd generation (father)	COUNTRY	1st generation	2nd generation (mother)	2nd generation (father)
Argentina	68	235	192	Latvia	242	2,032	2,200
Australia	3,070	5,411	5,453	Liechtenstein	239	279	247
Austria	773	1,340	1,310	Luxembourg	1,906	3,357	3,463
Belgium	1,375	1,221	1,256	Mauritius	3	19	12
China	2,971	10,082	9,466	Mexico	1,162	253	400
Costa Rica	9	6	7	Moldova	80	192	178
Croatia	633	1,698	1,616	Montenegro	956	1,421	779
Czech Republic	269	684	800	Netherlands	160	542	590
Denmark	233	962	1,033	New Zealand	1,567	951	1,012
Finland	688	614	469	Norway	133	231	228
Germany	277	1,173	1,244	Portugal	190	64	65
Great Britain	385	496	458	Qatar	1,544	956	863
Greece	770	207	178	Serbia	13	84	75
Hong Kong-China	3,773	5,063	5,162	Slovak Republic	74	213	185
Indonesia	72	18	19	Slovenia	12	11	16
Ireland	1,080	850	699	Switzerland	1,937	4,426	4,988
Israel	487	351	316	Turkey	74	111	61
Korea	7	16	1	Uruguay	330	193	181
Kyrgyzstan	87	122	118				
				Total	27,649	45,884	45,340

Notes. The table reports the number of observations of immigrants students (first and second generation) by country of destinations in the PISA sample. The observations for second generations students are calculated based both on mothers' or fathers' countries of origin.

Table A12
Long-Term Orientation and educational outcomes, PISA
Second generation immigrants (paternal side)

VARIABLES	(1) Math	(2) Reading	(3) Science	(4) Retention	(5) Truancy	(6) Math	(7) Reading	(8) Science	(9) Retention	(10) Truancy
Long-Term Orientation	0.697***	0.669***	0.767***	-0.080***	-0.073**	0.747***	0.708***	0.823***	-0.086***	-0.074**
	(0.205)	(0.188)	(0.204)	(0.021)	(0.031)	(0.211)	(0.198)	(0.213)	(0.019)	(0.031)
Male	0.188***	-0.327***	0.076***	0.011*	-0.010	0.196***	-0.324***	0.078***	0.009	-0.010
	(0.016)	(0.035)	(0.019)	(0.006)	(0.008)	(0.015)	(0.033)	(0.019)	(0.006)	(0.008)
Age of student	-0.213***	-0.199***	-0.181***	0.271***	0.046***	-0.222***	-0.205***	-0.187***	0.291***	0.047***
	(0.032)	(0.033)	(0.034)	(0.035)	(0.012)	(0.035)	(0.038)	(0.040)	(0.034)	(0.012)
Wealth						-0.002	-0.018*	-0.025**	0.005	0.004
						(0.012)	(0.009)	(0.010)	(0.004)	(0.003)
Observations	45,340	45,340	45,340	29,735	13,346	38,033	38,033	38,033	23,448	13,314
R-squared	0.365	0.338	0.342	0.478	0.104	0.378	0.347	0.352	0.490	0.104
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Grade FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Parents' education FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country of destination FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Dependent Variable (mean)	0.000	0.000	0.000	0.143	0.120	0.000	0.000	0.000	0.156	0.120
Dependent Variable (sd)	1.000	1.000	1.000	0.350	0.325	1.000	1.000	1.000	0.363	0.324
Long-Term Orientation (mean)	0.643	0.643	0.643	0.639	0.617	0.642	0.642	0.642	0.634	0.617
Long-Term Orientation (sd)	0.223	0.223	0.223	0.224	0.230	0.228	0.228	0.228	0.231	0.230
Long-Term Orientation (beta)	0.156	0.149	0.171	-0.051	-0.052	0.170	0.161	0.187	-0.055	-0.052
N_clust	60	60	60	57	55	57	57	57	53	55

Notes. The table reports OLS estimates, with standard errors clustered at the country of origin level. The unit of observation is a second generation immigrant student on the paternal side from one of the 63 countries residing in one of the 37 countries surveyed in PISA for which information about the country of origin of the parents is available (4 waves from 2003 to 2012 depending on whether the variables used in the regression are all available – details are on the online Appendix). The dependent variables are Math, Reading, Science scores calculated according to the description on the online appendix, retention (a dummy variable equal to 1 if a student repeated at least one year during his/her school career), and truancy (a dummy variable equal to 1 if the student skipped at least one full day of school in the previous two weeks). The "Long Term Orientation" variable is based on Hofstede (2010) and is measured on a 0-1 scale. Individual controls are: male (a dummy equal to one if the student is a boy), age (the age of the student expressed in years), dummies for student grade and for parents' education, wealth (an index of family wealth possessions built by OECD – PISA). We describe in details all the variables (and their availability in different PISA waves) on the online Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels.

Figure A1
Long-Term Orientation and educational outcomes, raw correlation, FLDOE
First generation immigrants

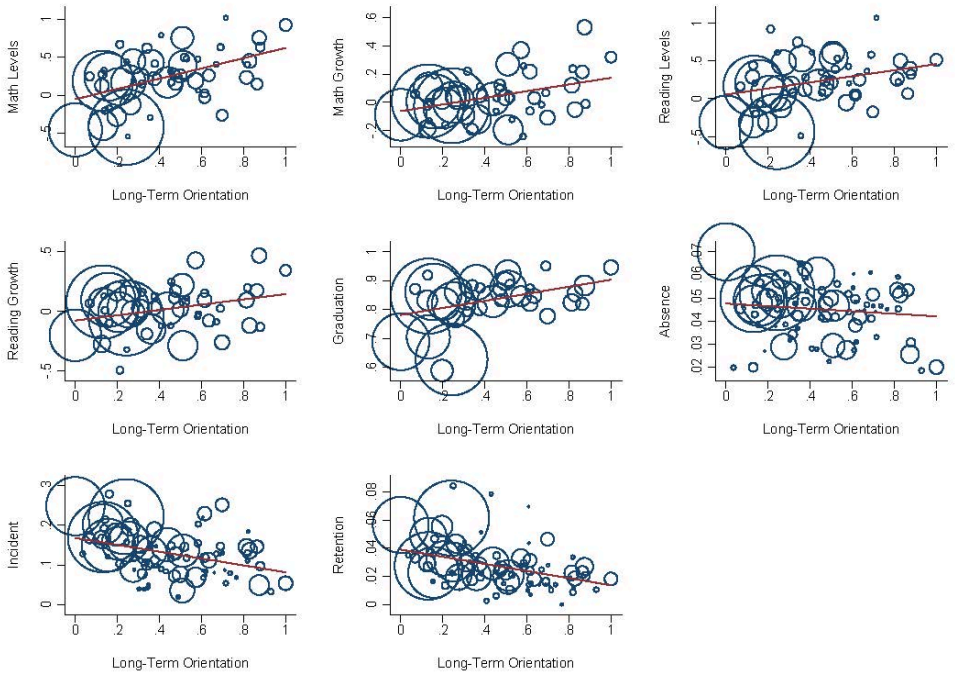


Figure A2
Long-Term Orientation and educational outcomes, raw correlation, FLDOE
Second generation immigrants

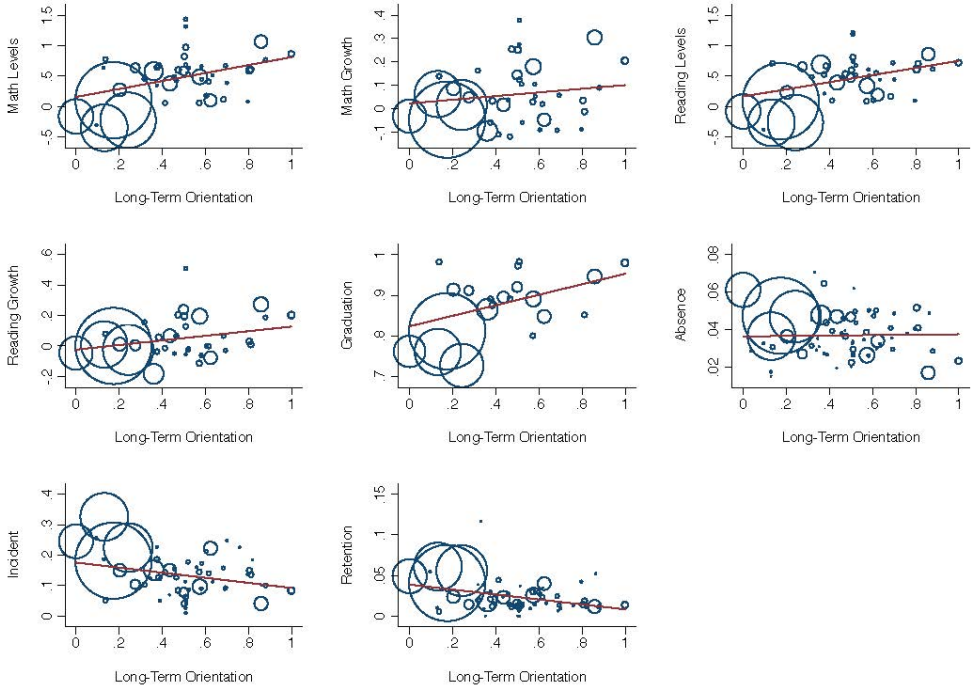


Figure A3
Long-Term Orientation and Educational Selection (based on Feliciano, 2005)

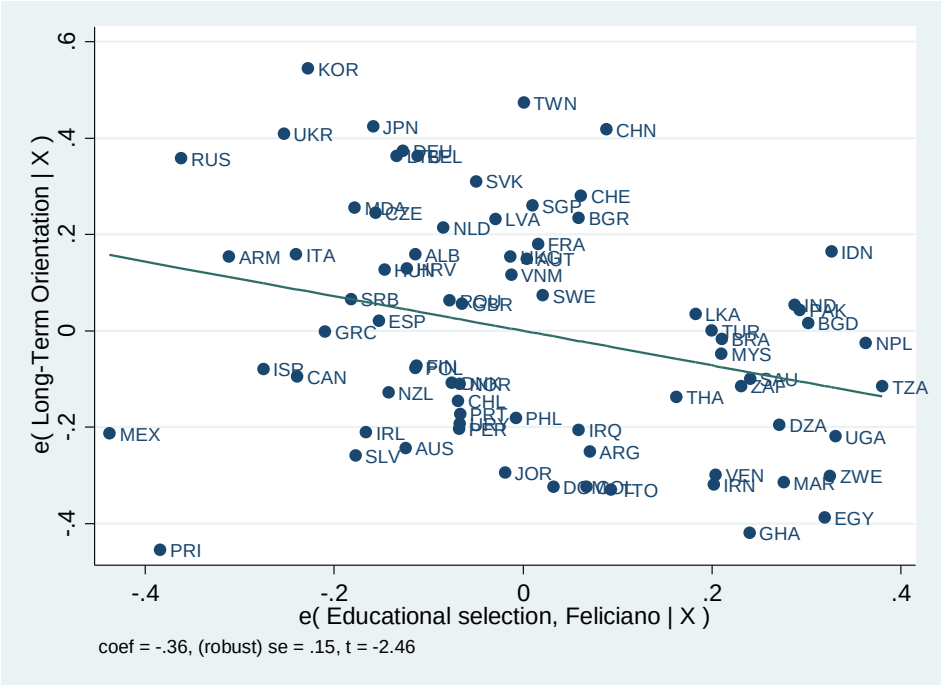
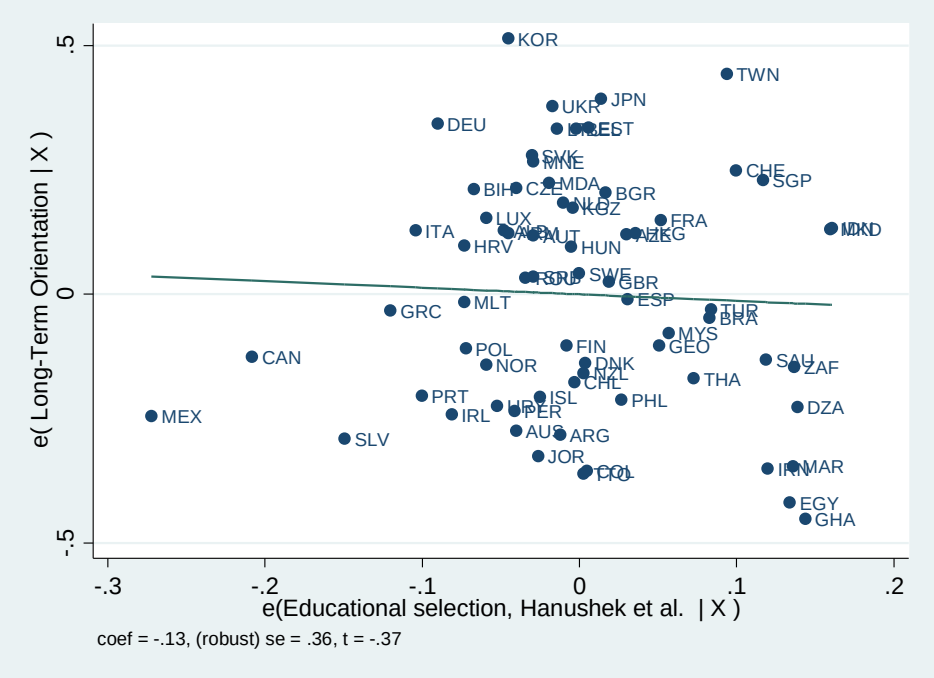


Figure A4
Long-Term Orientation and Educational Selection (based on Hanushek et al., forthc.)



A.4. Selection of Immigrants on Long-Term Orientation

The European Social Survey contains information on the country of origin of immigrants, therefore allowing us to calculate a proxy of Long-Term Orientation for first generation immigrants by country. We find three potential proxies for Long-Term Orientation, based on the following three questions. The first question asks the respondent: "Do you generally plan for your future or do you just take each day as it comes? Please express your opinion on a scale from 0 to 10, where 0 means 'I plan for my future as much as possible' and 10 means 'I just take each day as it comes' ". This question is however asked only in the third round of the European Social Survey and the number of individuals by country of origin is very small. We therefore select two other questions that were asked in all rounds. For these questions, the respondent is given the description of a person and he/she has to choose, on a scale from 1 to 6 whether the person is "Very much like me", "Like me", "Somewhat like me", "A little like me", "Not like me", "Not like me at all". We chose the following two descriptions "He seeks every chance he can to have fun. It is important to him to do things that give him pleasure", and "Having a good time is important to him. He likes to spoil himself". We coded all the questions so that a higher number indicates more long-term oriented individuals.

In Figures A5-A7, we plot the partial correlations between each of the three proxies of Long-Term Orientation for first generation immigrants, averaged at the country of origin level, and the measure of Long Term Orientation from the country of origin. As it is apparent from the Figures, while the measures of Long-Term Orientation for first generation immigrants are positively correlated with the one from the country of origin, it is not systematically the case that immigrants coming from Long-Term Oriented countries are positively selected in terms of this measure: the Long-Term Orientation measure of immigrants coming from these countries is not systematically higher than the one in the countries of origin.

Figure A5
Partial correlation between Long-Term Orientation of Immigrants and Long-Term Orientation from the country of origin, based on the question "Planning for the Future"

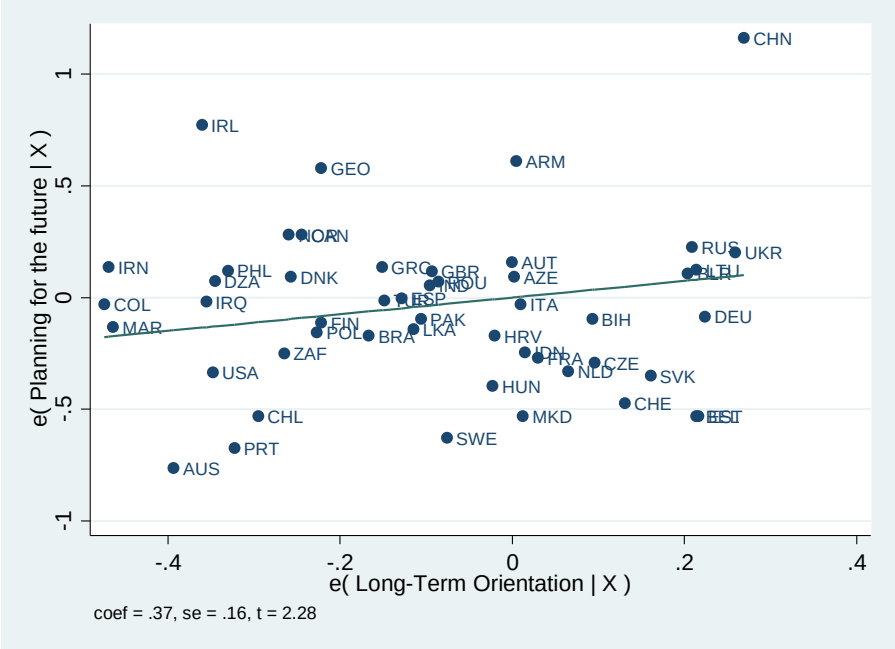


Figure A6
Partial correlation between Long-Term Orientation of Immigrants and Long-Term Orientation from the country of origin, based on the question "Importance of having fun"

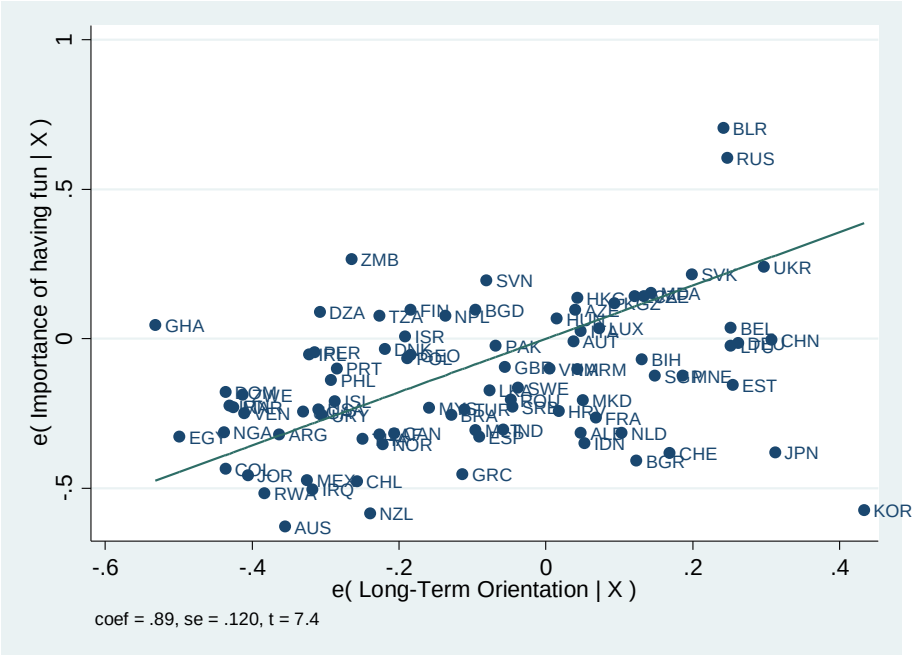
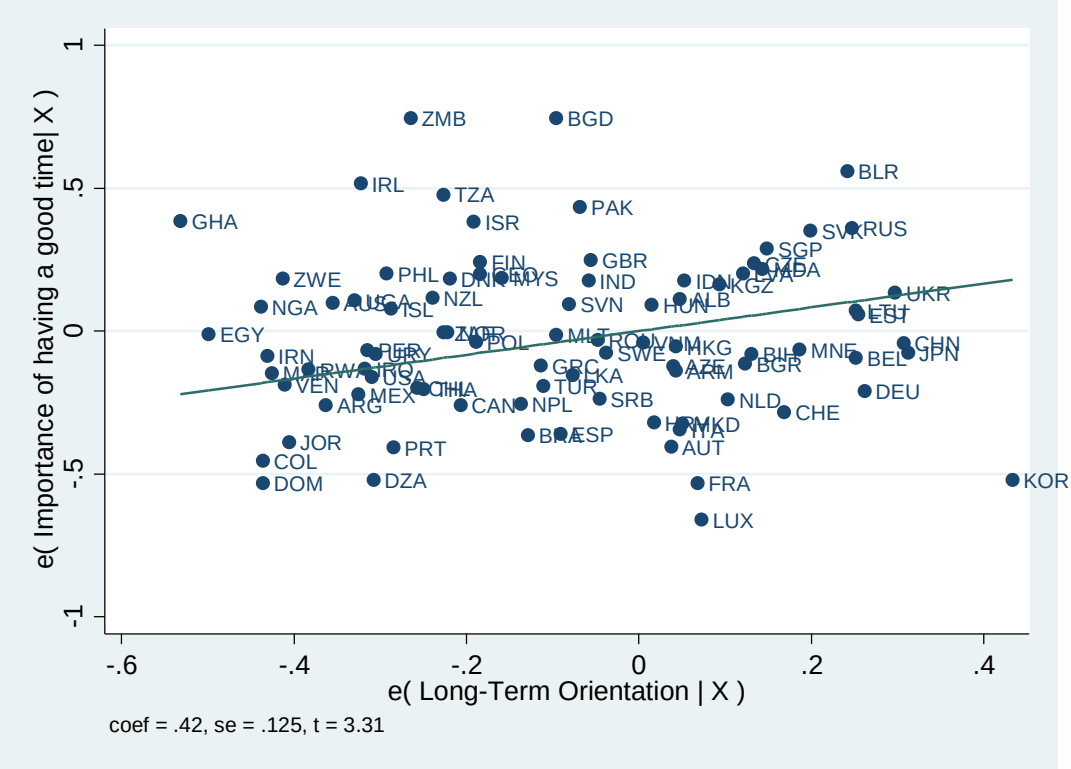


Figure A7
Partial correlation between Long-Term Orientation of Immigrants and Long-Term Orientation from the country of origin, based on the question "Importance of having a good time"



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