The Limits of Meritocracy: Pedro, Juan & Diego

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How is social class transmitted and how does it affect intergenerational income mobility? The economic analysis of future wages and intergenerational mobility often overlooks the role of social class. In particular, the influence of "elite" schools on the transmission of social class has received attention in the literature, yet there remains little consensus on how to define and identify such schools. This paper makes a methodological and empirical contribution to the literature by operationalizing the identification of elite schools and using a threshold methodology to identify different groups of schools using proxies of social class.

This paper follows the traditional sociological literature that identifies social class by occupation. Using a novel and detailed panel data set of students and taking advantage of detailed information of students' parents, develops a measurement to define the social class of a high school. This paper shows the great disparities of future income for students of different high schools - that have different social and cultural capital. Then, using a threshold method, this paper finds the "critical mass" of "high class" parents that generates changes in the future income of the students.

The results show that high schools could be divided into groups according to the social class of their parents and the future wages of their students. Moreover, this paper finds that the "high class" schools can empirically be associated with higher wages, and the "higher class" composition of the school, the higher the expected wages. Moreover, this paper finds that the correlation of academic tests scores and future wages is higher for students in high class high schools, implying that the reward for better education if more important in higher income groups. Then, the results show that there are more "high class schools" than what has been commonly detailed in the literature. Lastly, this paper is expected to become a building block of future research on education, social class and intergenerational mobility.

I. Introduction

Can social class affect the capacity of specific groups to accumulate human capital? Can social class be acquired by individuals of lower groups? The most

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recent literature relating income and education in has focused on students' access to different neighborhoods, colleges, their capacity to pay for admission test preparation. The academic results, in turn, are highly associated with family background, income and the type of school attended, particularly, whether the school was paid. However, other distinctive factors, beyond family income, are also said to be relevant determining human capital accumulation.

A branch of the literature is revising the concepts of elite education, as family background opens views about career options and elite membership, a particularly relevant issue in segmented societies (Zimmerman, 2019). Social class, "Habitus" and social networks a distinct features of elite education (Bourdieu, 1986). What if, instead of academic programs, the socioeconomic status the most critical determinant of future income? Is it possible to distinguish the role of such factors, something less related with meritocracy, and hence, more difficult to change?

The purpose of this paper is to contribute to the economics of education literature by using sociological frameworks and econometric techniques. While many papers have tried to address the concept of "elite education" in the past from a sociological standpoint, few papers have addressed this topic empirically, using detailed large data sets and following individuals during many years.

There seems to be a gap between the economics of education literature and the sociological literature, as the educational literature as not used all the available theoretical frameworks available in the sociological theory and empirical methods. This paper contributes to the literature by showing that there are empirical ways to find high class or elite schools, more than ad-hoc definitions **?**.

In particular we characterise the high school of origin of the students, using sociological framework (Torche, 2005; Canales, 2016; Erikson et al., 1979) and the economic, educational, demographic and social class characteristics of parents of the students of each high school in Chile.

Once the a proxy of social class if obtained for each schools, the relation ship with the wages of the students is explored. To perform this analysis we follow for thirteen years a cohort since their 8th-grade, the lowest grade for which we have standardized information. We analyse each student's academic performance in 8yh grade and their subsequent wages at age 27, and relate these wages to their parent's family income and their membership to higher class schools.

The results show that the high school of origin are extremely important in defining the future income of students, and the proxy of social class is an efficient and relevant variable. Moreover, using the a threshold econometric methodology (Hansen, 2000) seems that "high school are divided into groups, depending on the social classes of the parents of the students. Therefore, it is possible to empirically classify "high social class" high schools using the characteristics of the parents of the students per school, in particular, parental ocupation as a poxy of social class seem to be extremely relevant to identify the "elite schools". Higher concentration of high class parents will define the "social types of schools", and there seem to be thresholds that define to which type each school belongs.

Moreover, the estimations finds that test scores and wages have a higher correlation for students from "high class" schools compared to "lower class" schools, pointing in the direction of higher returns for education in higher income environments. While this is not a causal paper, the correlation between wages and children going to elite, versus non elite high schools, is robust and over two times higher.

Furthermore, the paper shows how the sociological definitions of social class - in this case parental occupation - seem to effectively translate into the future wages of the children.

II. Literature Review

A. Education and Social Mobility Conceptual Developments

There are many explanations for the different intergenerational transmission of income, being public services, education, labor markets, skill-biased technology, neighborhoods and social connections the most considered.

The rational action and social reproduction theories are two lines of the literature explaining the wage gap and the income transmission through generations. The first explains inequality through processes of self-selection and individual choices by students and their parents in the progression from the school system, to higher education, training, and employment. While stricter versions stress rational choice and a market perspective (**?**), others include informational and emotional elements to individual choice (Coleman, 1966; Elster, 2007; Urzua, Paredes, Chumacero, Meneses, 2010).
[1]

Soocial reproduction theory stresses that social backgrounds and conditions determine educational attainments. Bourdieu (1986) identifies three forms of capital that account for different dimensions of social differentiation in the class structure, thus understanding the concept of capital beyond more traditional Marxist approaches. Economic Capital, Cultural Capital, and Social Capital, although linked and relatively interchangeable, provide analytically distinct mechanisms to explain social inequality. Economic capital corresponds to the conventional definition of ownership and control of financial resources, like money, property and other assets of market value, traditionally used to interpret market and class structures. Whilst social and cultural capital are more subtle forms of differentiation, economic capital is in some cases, a way to access social and cultural capital, and vice versa.

[1] From this perspective, institutional barriers play a role, since students face different realities. High schools have tracks – vocational versus college- that define future outcomes. Some students could be located in places where only one track is available. Students could also be institutionally selected to one of these tracks. College entrance exams use to be biased toward specific groups, as Geiser Studley, 2002 suggest for the USA and Koljatic Silva, 2006 for Chile. College-major choices are also associated with income differences, as careers have different returns, and students have different information (Hastings et al., 2015; **?**)

Social capital refers to belonging to a durable network of institutionalized relationships with people of particular social sectors, with which an individual is mutually acquainted and is recognized as part of that group, so he or she can derive potential resources and opportunities out of those links. Being part of a higher status network provides larger potential to obtain advantage and climb up in the social structure, while a lower level social network reduces the probability of achieving higher circles. Cultural capital, in turn, is the mechanism that Bourdieu uses more extensively to address educational attainment differences by different social groups. Cultural capital refers to the level of education of an individual, in the form of specific bits of knowledge or intellectual skills, that are accumulated by an individual and that allows them to achieve a certain level of advantage or status in society. Cultural capital can be expressed in different ways, being the most evident, in the form of academic credential and professional qualifications, that can signal to society a series of capabilities and a set of cultural traits that can aid in being selected to certain work positions. This form of cultural capital directly relates to education and it is easily transferable to economic capital such as through a higher-paying job. Credentials and qualification might also be interchangeable to a certain extent with social capital, as the credentials give access to a shared background with professionals and other groups, making more likely mutual recognition as part of a network.

Objectified cultural capital, on the other hand, refers to ownership of culturally valuable artifacts and devices, such as works of arts and other pieces. This form of cultural capital can be interchangeable with economic capital through sales and purchases, as long as the artwork's significance justified and maintained. Probably the most subtle but highly relevant form of cultural capital is its embodied form as an individual's "habitus," which is acquired through socialization, generating a person's character, set of values and way of thinking and speaking (Bourdieu, 1986). Habitus is the cultural capital that is passively inherited because of being raised in a particular family, neighborhood, social group and tradition. A critical dimension of habitus is linguistic capital, which enables an individual to communicate and to be able to self-present in different social settings. Habitus or the embodied social capital is not immediately transmitable as money or resources, but it can only be incorporated over time. In turn, a specific habitus can allow or deny access to social capital through signaling the belonging of an individual to a certain kind of social groups, which could open or close those networks to him or her.

Cultural capital and social capital will give returns via formal and informal networks acquired at school. In this context Elite schools prepare their student –both with the formal and hidden curricula– to assume political and economic power positions (Bourdieu, 1986).

B. Elite Schools

elite schools High school quality is seldom homogeneous. A high part of the

education variance in countries belonging to the Organization for Economic Co-operation and Development, is explained by the socioeconomic status of families (OECD, 2018). While Chile's educational system is comparatively successful in Latin America, it shows the second largest educational segregation among OECD members. Elite and private institutions have significant autonomy in setting conditions for admission, ranging from competitive examination to extra-academic criteria, including family origin, religious orientation, and socioeconomic background. Elite schools function as "institutional routes" of elite tracking to successful paths in higher education, the labor market and overall social prestige, political influence and economic wellbeing (Zimmerman, 2019). To enter an elite tracking, a supplemental personalized preparation might be in place to ensure being accepted in more academically selective institutions.

This is exacerbated in elite schools, as school selection becomes an additional class closure mechanism. Elite schools will reinforce and institutionalize habitus.

Van Zanten, 2009 refers to private schools as "total institutions" since they transmit not only a formal curricula but also a "hidden" one, with a socialization model that have a significant influence on the students' private and public adult life. They have features that contribute to distinctiveness and exclusiveness, including small size and usually boarding system (Van Zanten, 2009). Thus, the schooling process includes sophisticated rites marking entrance and departure, bonding experiences, specific sports, and social life traditions, a distinctive uniform, fraternities, sororities, and clubs, thus generating high social cohesion amongst institutions and alumni, often influenced by the army and religious traditions. These social traits are combined with academic ones, including specific curricula, evaluation modes and admission requirements (Van Zanten, 2009).[2]

C. Elite school in Chile

Chile has a complex and developed system of private paid schools, with selection processes, traditions and well known reputation. In Chile private high schools may select the students, and some require parental interviews, tests and sources of income amongst others (Alves et al., 2015; Elacqua, 2012; Valenzuela, Bellei, Ríos, 2014). While private schools represent 7% of K12 enrolment, the most selective universities are over-represented by students coming from these schools.

Belonging to these private schools requires a number of tasks. According to the National Standardized Test in the System of Qualify Measurement in Education survey (SIMCE in Spanish), 76% of parents in private schools are interviewed inquiring on their income, religious affiliation and other non academic aspects.

[2]Elite schools are encouraged to be guardians of national and cultural models, stratification patterns or agents of innovation and new cultural ideas. Thus their students require conditions to assume that kind of leadership. Schools tend to have organic links to prestigious corporations, dominant political parties, and the national establishment, where their alumni can be placed, thus reproducing privilege through socialization. Elite schools usually are a closed opportunity to non-elite social, ethnic, political or religious groups.

In addition, students use to take tests to apply to most private schools (SIMCE 2010). Moreover, in many of these schools, children of former students have preferential admission, and newcomers need recommendation letters from alumni. Moya Hernández (2014) suggest that belonging to a private school signals being part of the economic elite.

The casuistic importance of Elite high schools in Chile has been widely documented, as the members of these schools provide a high proportion of the congressmen, business owners, and directories of traded firms (Zimmerman, 2019).

In turn, studying in an elite private school and going to an elite college has a high private return. Zimmerman (2019) finds that students from nine private high schools in Chile, once they access elite secondary education, increase their wage significantly compared to their peers with the same college degrees. These students can access top performing jobs as CEOs or Board of Director positions at a higher rate than their counterparts. Figure 1 shows the wages of students in different schools. Students in the elite high schools – as defined by Zimmerman- present higher wages, even compared with their counterparts of other private paid schools and controlling with the SIMCE Test scores from 8th grade.

The reality is that a bright students from public school will - on average - earn less than the lowest performing student from an elite high school. (using Zimmerman's definition of elite). Then, is clear is that two students with the same ability –but attending different types of schools- have entirely different fates. It's clear that there are limits to the meritocracy in Chile.

The results of Figure 1, although motivational, do not provide a full picture of the interactions happening at a national level, nor the causes of the wage differentials.

There are many reasons that affect the educational and early labor market trajectories of the students. Some of the explanations used to rationalize this gap are usually education, college-major choices, college reputation, industries, working environment, educational trajectories of the students (Blanco, 2018), and the impact of elite schools (Zimmerman)there is still a gap in knowledge. We do not have a theoretical definition of elite schools that can be empirically tested and applicable in different environments.

This paper one of the first attempt to define an "elite" or "high class" schools using a mixture of sociological and well as economic variables using a data-driven characterization has not been documented in the literature.

III. Theoretical Framework

The theoretical framework of this paper follows Bordeau, as we will propose that the future earning of the students will be defined by the "Economic Capital,

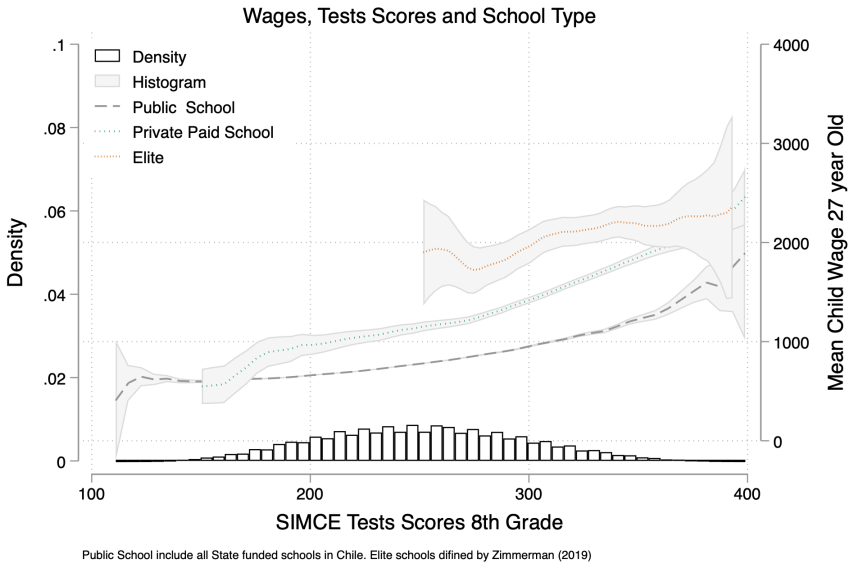

FIGURE 1. CHILD INCOME AND PROPORTION HIGH SOCIAL CLASS PARENTS

Cultural Capital, and Social Capital" and abilities of the students. Equation (1) explains the wage of student i using the test scores of the student, the economic Capital of the family of the student, the cultural capital and the social capital.

$$\text{Wage}_i = \beta_0 + \beta_1 TestScores_i + \beta_2 * EconomicCapital_i + \beta_3 * Cultural_i + \beta_3 * SocialCapital_i \quad (1)$$

While this theory is interesting, it's possible that social and cultural capital of the students are on independent from their families. The theory regarding elite school points out that these schools would provide an important part of the social and cultural capital that the students need to succeed in life.

In that case equation (2) would be a better approximation, there the characteristics of high school j affect the the cultural and social capital of the students. In this case, we will estimate a proxy of the social class of the school as the average of the proxy of the social class of the parents of the students.

$$\text{Wage}_i = \beta_0 + \beta_1 TestScores_i + \beta_2 * EconomicCapital_i + \beta_3 * (Cultural_j + SocialCapital_j) \quad (2)$$

The theoretical framework of social class and capital mentions that this equation is not continues, but rather, there are classes or groups of schools as the society is divided in classes. That is that one (or more) groups of schools differentiate from the others. Having a higher accumulation of social and cultural capital, elite schools separate them self from the rest of the schools. In that regard there should be a change in phase, where at some point, a normal schools has accumulated a proportion of elite individuals, that becomes part of the elite. This last propositions is going to be tested empirically.

This paper will also "classify" the social class of the schools. To do so, the school social class proxy of the schools will be created using the characteristics of the parents of the students. In particual the education, income and occupations of their fellow students' parents when they are in in high school. Other authors such as Torche (2005) adapted the occupational social class structure developed by Erikson, Goldthorpe and Portocarrero (EGP) for Chile (Erikson et al., 1979). The College Selection Test survey asks students the about their parents' occupations. Although not all students answer this survey (due to attrition and school repetition), we can obtain measures at the school level that consider the majority of graduating students similar to that of Canales (2016). This paper follows Canales (2016), who used the college selection test survey and an adaptation of Torche (2005) to classify the social classes of the parents of students taking the College Selection Test. In specific, the highest level occupations are used as a proxy of the highest social class of individuals. In this survey parents are classified according to twelve occupations, with the highest being: high level managers in firms, government managers, high level diplomats, high level justices or armed forces officials. In this paper we will focus only on this highest occupational category to generate a school level variable that would indicate the proportion of high class individuals in the schools.

IV. Methodological Framework

This paper is separated into two methodological parts, first classifying schools and second analyzing the relationship of wages, social class and phases.

Schools and Social and Cultural Capital Taking advantage of the literature that uses parental occupation as a proxy of social class, this section of the paper will look at different proxy options that may help us "identify" elite schools. First we will look at different parental and school characteristics that may help describe schools. These are the characteristics of the parents of the students; income level, educational level, occupations and social class.

Then we look these variables as the school level and relate them to wages.

Wages and Social Class The second uses the wages of the students to identify

if there are variables that define elite schools. And if there are, are there thresholds of these variables that define different types of schools?

To analyze the hypothesis of thresholds, we analyze the existence of a cutoff using the Hansen (2000) threshold method. We apply the regression method to equations (2). The current methodology allow for the identification of multiple thresholds, obtaining different regressions parameters.

A. Data Set

This paper takes advantage of the high coverage in middle school education in Chile and creates a data set that merges national administrative data sets and national surveys to create a comprehensive analysis of students' educational and work trajectories. The data sets are listed in Table 1. The first data sets include school enrollment and test scores in 8th grade and high school, higher education enrollment, and higher education graduation. The first administrative data set include all the students in the country, even those at private and public institutions. The second set of administrative data set comes from the Ministry of Labor, and consists of the wages tracked by the Department of Unemployment Insurance of the Ministry of Labor; we use this to obtain salaries of the students from 2007 to 2018. The administrative surveys are the national mandatory SIMCE test, and the national voluntary College Selection test and are provided by the Ministry of Education and DEMRE (Department for the Educational Testing, Measurement and Records, of the University of Chile). Lastly, the wages of individuals in the public sector were downloaded from the Ministry of the Interior's transparency web page. All these data sets allowed us to follow the students from 2004 to 2018.

Family Income and Education: These are the initial condition variables of these students. Family income is available for all the sample and parental educational level for over 84% of students. Parents recorded their family income level as one of 15 income brackets, and their educational level using twelve different categories.

Academic Outcomes: The academic outcomes of the students are high-school dropout, high school repetition, high school change, high school quality, and higher education enrollment and graduation. These variables are present for all students in the sample as the study relies on administrative data sets. These are the variables that are analyzed on a year-to-year basis. The national mandatory SIMCE test scores are also present for the initial year for each student to measure their academic performance.

School Social Class: We will use the College Selection Test survey, that asks students the about their parents' occupations. We follow, Canales (2016) that addapted Erikson, Goldthorpe and Portocarrero (EGP) for Chile (Erikson et al., 1979) using this survey. We will use the highest occupational category to generate a school level variable that would indicate the proportion of high class individuals in the schools.

Table 1 summarizes the main variables of this study. This presents the student wages, parental income, and the educational outcomes of both. Parental wages are available for 249 thousand students [3] . Maternal education is obtained from the SIMCE survey, and there is available information for 230 thousand students. There is wage information for 181 thousand students. Parental educational is measured in eight different levels. The social class variable, e.g. the proportion of parents who are high level managers, is only 2% of the sample.

Table 1—Summary of Main Variables

	mean	sd	count	min	max	source
Academic Variables						
Years of Education	15.0	3.2	249373	8	21	Ministry Education
SIMCE Test Score 2004	253.2	47.1	249372	111.0	398.9	Ministry Education
SIMCE Tests Score 2006	258.7	53.7	184687	106.9	412.4	Ministry Education
Higher Education Enrollment	0.7	0.5	249373	0	1	Ministry Education
Higher Education Graduate	0.4	0.5	249373	0	1	Ministry Education
College Graduate	0.2	0.4	249373	0	1	Ministry Education
Vocational 2-year Graduate	0.06	0.2	249373	0	1	Ministry Education
Vocational 4-year Graduate	0.1	0.3	249373	0	1	Ministry Education
Sciences & Eng.Graduate	0.2	0.4	249373	0	1	Ministry Education
Income and Demographics						
Child Wage(US)	834.6	615.6	181885	0	5390.5	Ministry of Labor
Child Wage Rank	0.5	0.3	181885	0.000005	1.0	Ministry of Labor
Top 10 percent Income	0.10	0.3	181885	0	1	Ministry of Labor
Parental Income	530.8	708.7	249373	82.0	3770.5	SIMCE 2004
Parental Income Rank.	0.5	0.3	249373	0.000004	1	SIMCE 2004
Parental Education Level	2.0	1.1	224006	1	8	SIMCE 2004
Female	0.5	0.5	249373	0	1	SIMCE 2004
S.Class and Role Models						
Manager Parent	0.02	0.1	249373	0	1	College Selection Test
Manager Parents in 12th Grade	0.02	0.06	249373	0	1	College Selection Test
Role Models 12th Grade	0.2	0.14	249373	0	1	Ministry of Education

Appendix I shows an analysis of the missing data, and how it relates to gender, parental income, and informal employment.

[3]According to the CASEN survey, there are 283,695 individuals of 26 years of age in 2017. The SIMCE test was planned for 280,753 students. and 249,373 parents answered the income question in the parental survey

V. results

A. *Socioeconomic characterization*

The first empirical objective of this paper was to find variables that would allow for the socioeconomic characterization of school. In particular, the variables tested where income, parental education, parental occupation and social class.

The descriptive statistics of these variables are as follows, showing a distribution per schools.

Following the sociological developments of definitions of social class, the parents that have "high social class" jobs (CEOs) are defined as high social class individuals. Using the proportion of these individuals per schools, we can find that, there is a certain correlation between the estimated proportion and the wages of students.

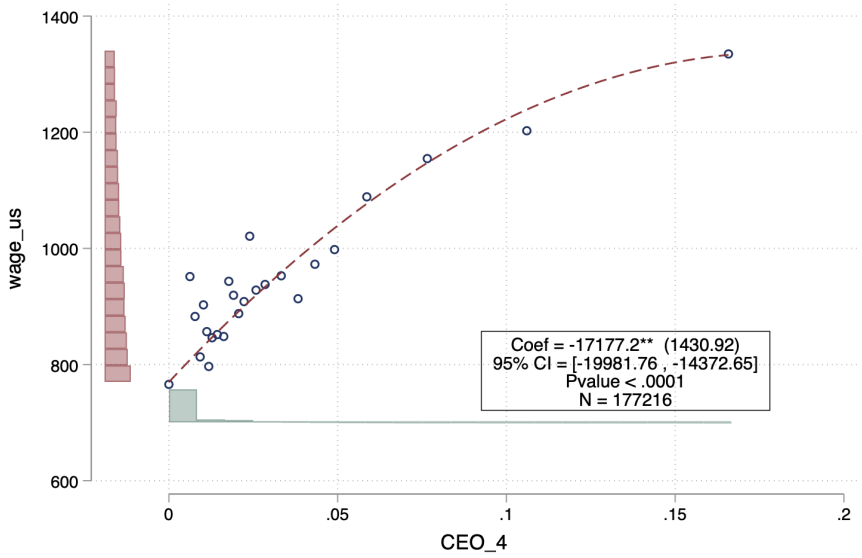

Figure 2. Child Income and Proportion High Social Class Parents

Folliwng, the next estimation is using the proportion of college educated parents, to define high social class.

Lastly, the figure bellow, show the creation of a new variables, that defines "high social class" as individuals that have higher education or a "high class job". This variable seems to be more linear than the previous one, and has more variance.

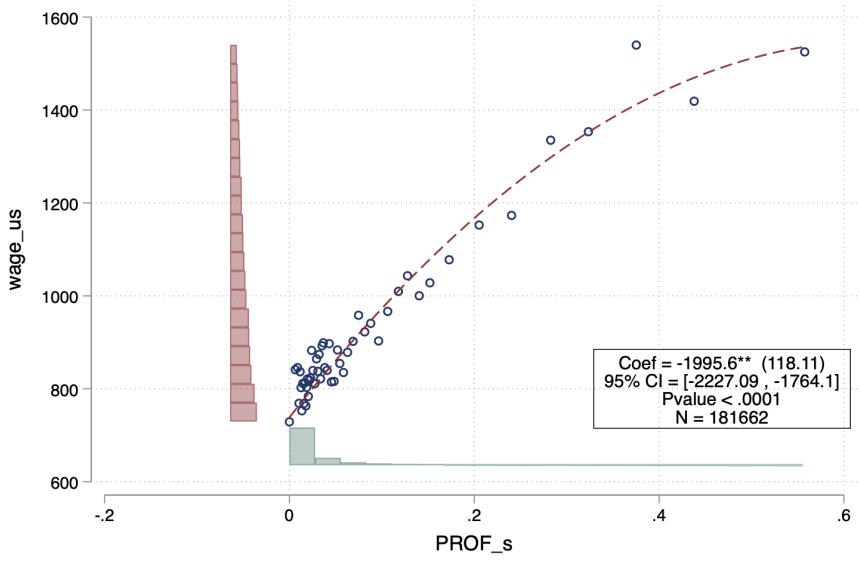

FIGURE 3. CHILD INCOME AND PROPORTION HIGH SOCIAL CLASS PARENTS

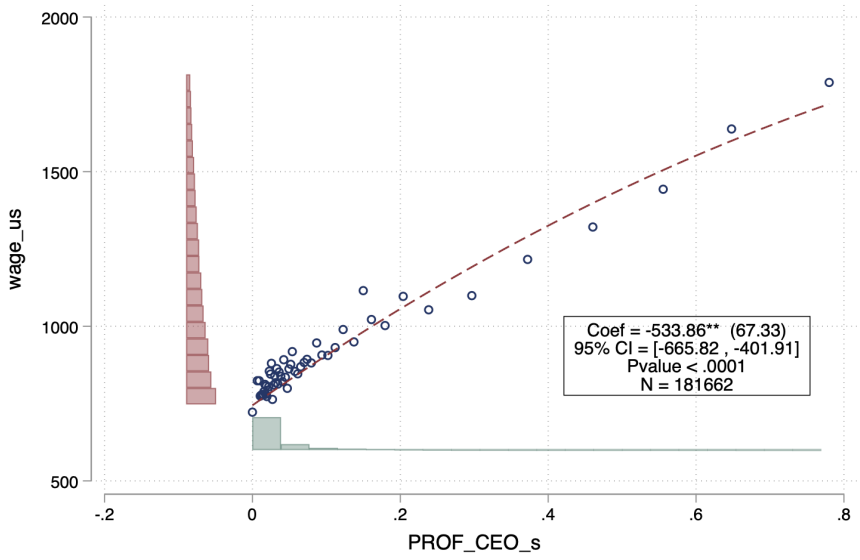

FIGURE 4. CHILD INCOME AND PROPORTION HIGH SOCIAL CLASS PARENTS

B. Regression Results

The regression results show that unequivocally the social class of parents is an important indicator of the characterization of the schools. Moreover, there seem to be three types of schools and two thresholds to characterize schools in Chile.

General objective: Determine the effect of academic, socioeconomic, institutional and social networks factors in early college graduates' wages.

Using the Hansen methodology several threshold a sought after, finding only three thresholds even when using controls.

```
Threshold regression                                    Number of obs    =    181,662
Number of thresholds =  3                               Max thresholds   =          3
Threshold variable: CEO_4                               BIC              =  2.314e+06

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Order     Threshold        SSR
------------------------------------
2           0           6.157e+10
3           .02380952   6.154e+10
1           .03125      6.167e+10
------------------------------------

------------------------------------------------------------------------------
     wage_us |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
wage_us      |
   rankpadre |    280.704   5.533547    50.73   0.000     269.8584    291.5495
       edu_p |   53.13875   1.325982    40.08   0.000     50.53987    55.73763
-------------+----------------------------------------------------------------
Region1      |
       _cons |   564.3766   3.071601   183.74   0.000     558.3564    570.3968
-------------+----------------------------------------------------------------
Region2      |
       _cons |   619.8645   5.027535   123.29   0.000     610.0107    629.7183
-------------+----------------------------------------------------------------
Region3      |
       _cons |   698.6756   9.189965    76.03   0.000     680.6636    716.6876
-------------+----------------------------------------------------------------
Region4      |
       _cons |   854.5801   6.550267   130.46   0.000     841.7418    867.4184
------------------------------------------------------------------------------
```

Figure 5. Child Income and Proportion High Social Class Parents

The figure bellow shows the three thresholds present when the social class of parents is identify as parents in managerial and CEO positions. This methodology finds three types of schools.

A similar patter is found then using the propotion of parents that attended colleg per school. Using the child wages, there seem to be three threshold, that define the social class of the schools.

Lastly using a combination of the indicators of social class. Defining high social class as having attended college or having a high social class job, we still find three clear thresholds.

These results would tend to point out that there are three types of schools in Chile, that could be defined as low class, middle class and high class schools. Another pattern, presented in these three cases are that there seems to be a positive correlation between the markers of social class and the wages of students, however, these markers seem to have a higher slope (more importance) in the "high class" schools.

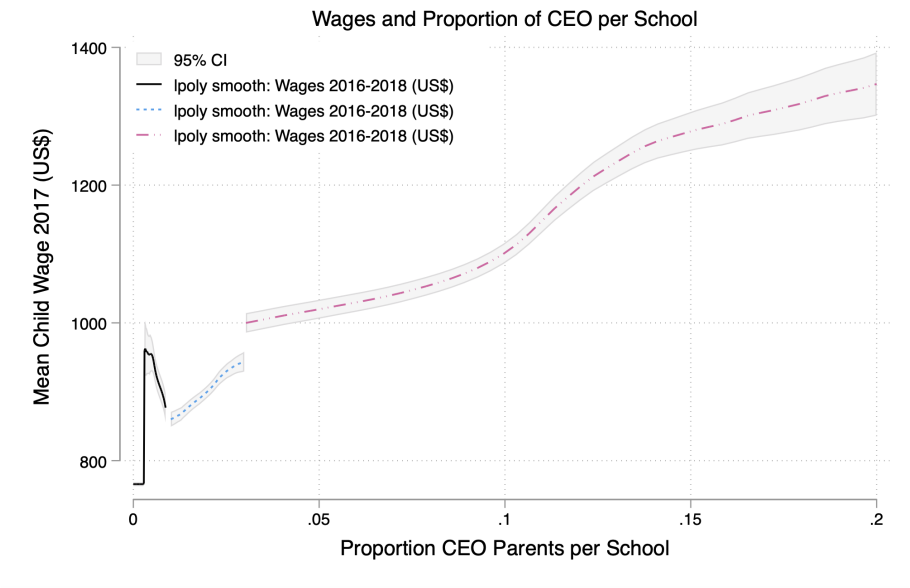

FIGURE 6. CHILD INCOME AND PROPORTION HIGH SOCIAL CLASS PARENTS

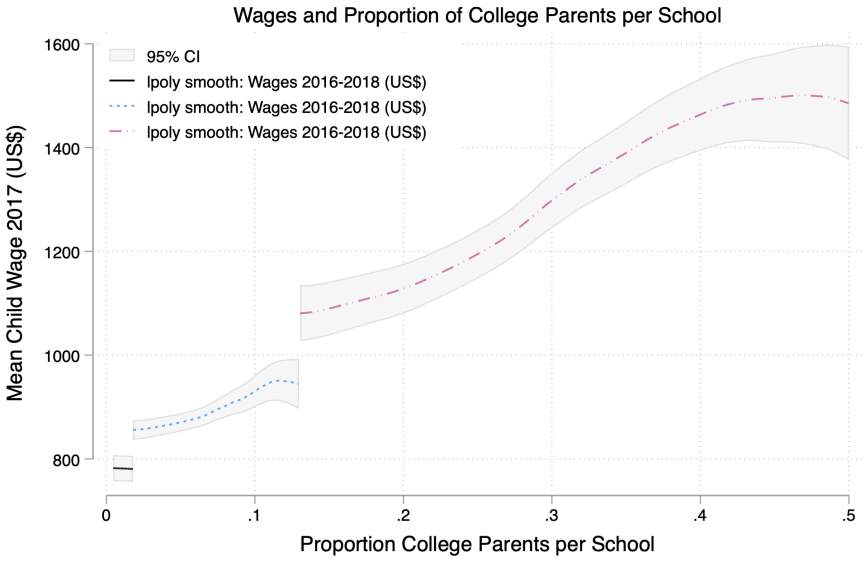

FIGURE 7. CHILD INCOME AND PROPORTION HIGH SOCIAL CLASS PARENTS

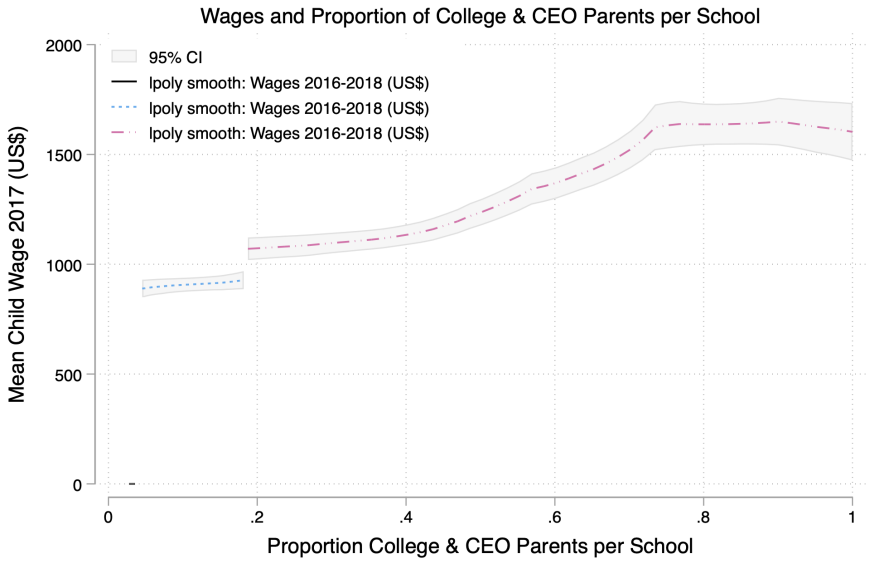

Figure 8. Child Income and Proportion High Social Class Parents

The table bellow shows the results of OLS regressions between a base scenario between the (1) wages and the SIMCE test scores. Column (2) shows the regressions using the tradition variables of private and elite schools, including binary variables and slope changes. Column (3) includes the definition and thresholds of low class, middle class and high class schools using the proportion of CEOs as the variable to identify the schools. Column (4) and (5) use the proportion of college educated parents and college educated parents and CEOs to identify high class schools, and the thresholds found in the previous sections.

The results reinforce the idea of positive slopes and increasing wages related to higher class schools. For students attending higher class high school, the SIMCE test scores have a slope of 6.51 (2.451+4.107), the slope for in low class schools is 2.451. This means that higher tests scores 2-3 times more important (correlationally) for students in high class schools compared to their peer in low class schools. Future researcher should analyze the causality of this slope change. Lastly, it's possible to see that the newer characterizations of schools has a higher explanatory capacity compared to the previous definition of elite and private paid schools.

To finalize, we look how the current characterization of schools would look. The figure bellow shows the wages of students and their SIMCE test scores according to the estimated social class of their "high school" of origin.

TABLE 2—REGRESSION RESULTS: WAGES, SIMCE TEST SCORES AND HIGH SCHOOL CHARACTERIZATION

VARIABLES	(1) Base	(2) Private-Elite	(3) CEO	(4) College	(5) CEO + College
Wages US					
Elite High School		877.9***			
P.Paid High School		279.8***			
Simce * Elite		0.302			
Simce * P.Paid		-1.043***			
Simce * Middle Class			-3.388***	0.635***	0.773***
Simce * High Class			4.098***	3.803***	4.107***
Middle Class			732.5***	-91.74***	-121.7***
High Class			-838.4***	-757.7***	-792.4***
SIMCE Scores	3.820***	3.940***	2.668***	2.488***	2.451***
Constant	-128.6***	-163.4***	113.8***	152.1***	158.0***
Observations	181,661	181,661	181,661	181,661	181,661
R-squared	0.084	0.092	0.115	0.115	0.118

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

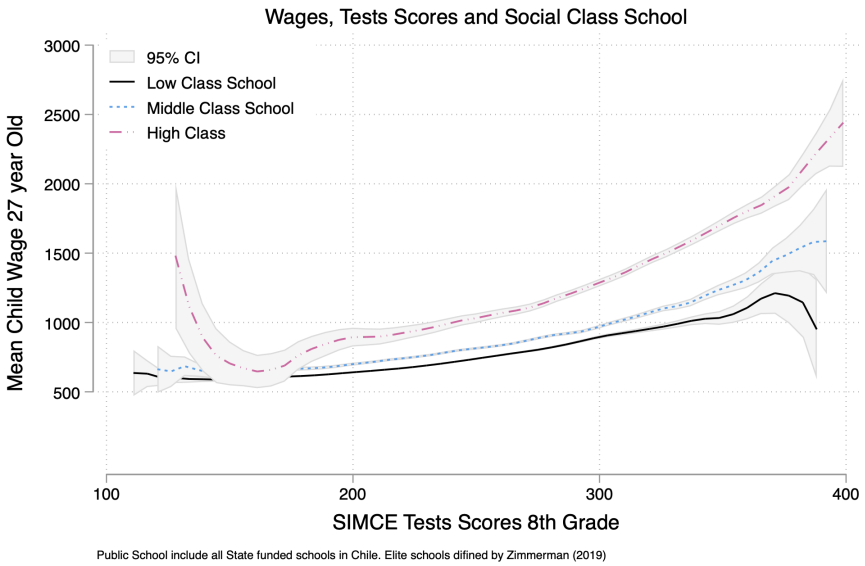

FIGURE 9. CHILD INCOME AND PROPORTION HIGH SOCIAL CLASS PARENTS

VI. Additional Analysis of Results

A. 1. Threshold Identification and School Classification

Our results from the threshold regression analysis clearly demonstrate that schools can be categorized into three distinct types based on parental social class. These categories include low-class, middle-class, and high-class (elite) schools. We identified that parental occupation, particularly managerial and CEO positions, was the most significant variable in defining elite schools. The threshold methodology revealed that these three classes of schools exhibit differing impacts on students' future wage outcomes.

The higher the proportion of high-class parents in a school, the greater the future wages of the students. This effect was most evident in the elite schools, which suggests that these schools offer both social and cultural capital that substantially influences the professional success of their students.

B. 2. Slope Differences in Test Scores and Wage Outcomes

Our regression results show that the correlation between test scores and wages differs significantly across the three school categories. For students in elite schools, the slope of the relationship between SIMCE test scores and future wages is significantly steeper compared to those in low-class schools. Specifically, the slope in elite schools is 6.51, whereas for low-class schools, it is 2.451. This indicates that the same increase in test scores results in much higher wage gains for students from elite schools, further amplifying the socioeconomic divide.

This disparity can be attributed to the additional social and cultural capital that elite schools provide, which is often unavailable to students from lower-class schools. The combination of academic achievement and access to elite networks amplifies the returns on education for students from high-class schools, reinforcing the limits of meritocracy.

C. 3. Policy Implications

The findings from this study suggest that educational policies aimed at promoting social mobility in Chile need to consider the broader influence of socioeconomic factors, particularly the role of elite schools in perpetuating class advantages. To reduce the inequality gap, policymakers should consider interventions that provide students from lower-class schools with better access to cultural and social capital. This could involve mentorship programs, scholarships, and initiatives that connect students with professional networks, helping to level the playing field for all students, regardless of their socioeconomic background.

VII. Conclusions

Can we identify elite schools? can we characterize schools by social class at a national level? This paper has made one of the first attempts to empirically measure the social class of parents and students in schools in a nation.

The results of this study highlight the critical role of social class in shaping educational and wage outcomes in Chile. Using a combination of sociological and econometric techniques, we identified clear divisions among schools based on the social class composition of their student bodies. Our analysis demonstrates that elite high schools, defined by the high social status of students' parents, generate a significantly higher return on academic performance compared to lower-class schools. This finding suggests that elite schools offer more than just academic benefits; they provide cultural and social capital that enhances the future earning potential of their students.

Through threshold regression analysis, we identified three distinct classes of schools—low, middle, and high social class institutions. Students attending high-class schools experience a much stronger correlation between their test scores and future wages, reinforcing the notion that higher-class environments amplify the returns to education. In contrast, students from lower-class schools, even when achieving similar test scores, face significantly lower wage outcomes.

These findings offer crucial insight into the limits of meritocracy within Chile's educational system. While academic achievement is important, the social background of students plays an outsized role in determining their future success. This reinforces the argument that educational policies alone may not be sufficient to address inequality, as social class remains a powerful determinant of educational and economic mobility.

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VIII. Appendix I

This paper has 27% of missing data. As a first approach the table bellow shows the proportion of student with missing data. We see a patter of missing data for females and high income males. This pattern of missing data gets reduced slightly when we consider higher education as a control, as a small proportion of individuals continue studying and do not working.

Figure 10. No

	No Wage				No Wage & No Higher Education		
	Total	Female	Male		Total	Female	Male
Q1	26%	33%	18%	Q1	26%	34%	17%
Q2	24%	31%	18%	Q2	24%	31%	17%
Q3	25%	30%	20%	Q3	24%	29%	19%
Q4	33%	35%	31%	Q4	29%	31%	26%
Total	27%	32%	22%	Total	25%	31%	20%

The missing data has two sources, individuals that are Not working, in Education or Training (NEET) and individuals in the informal sector. To analyze informality and NEET I use the National CASEN survey and re-created the methodology of synthetic fathers. Then I classified students according to the expected income of their fathers. The table bellow shows the proportion of informal workers in four income quartiles. It's possible to see that they distribute evenly across income groups.

The table bellow shows the NEET for individuals in four income quartiles. The results show a very high proportion of low-income females' NEET (32%) and a low proportion of high-income males (8%). This profile seems different from the administrative data, as we have a low proportion of NEET low-income males, and more high-income males without data.

Figure 11. Informal Workers in Chile

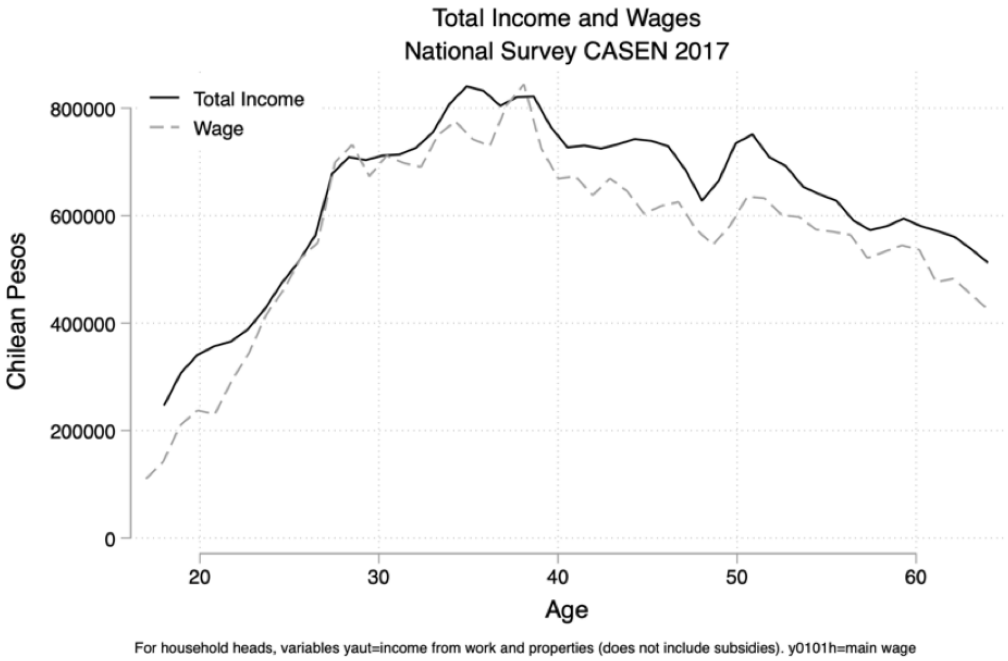
	Male	Female	
q1	11%	10%	11%
q2	11%	12%	12%
q3	10%	7%	9%
q4	10%	11%	11%
Total	11%	9%	10%

Figure 12. Not working, in Education or Training

	Male	Female	
q1	20%	32%	26%
q2	12%	28%	20%
q3	17%	31%	25%
q4	8%	27%	16%
Total	13%	27%	20%

Lastly, using the CASEN 2017 it's possible to analyze if the wages of individuals is similar to their total income. The figure bellow shows the wages and total income of individuals and their age. It's possible to see that the wages are a very. good proxy of their income between 25 to 32 years of age.

Figure 13. Missing Information



IX. Appendix III

A. Areas of Study

Even after graduating from college, low-income students face several challenges. Table 7 shows the areas of study defined by the OECD, and the probability of these students to reach the top 10%. There are areas of study that, even after graduation, provide a very low chance for the student to get to the richest 10%. For low-income students, being an engineer provides over 30% probability of reaching the richest 10%, while there is no possibility if the student studied humanities. The fourth roadblock that students face is to choose the area of study. In Chile, students elect their college major before enrolling in college and have almost no possibilities to change later.

The effect on intergenerational mobility of the area of study reinforces the impact of role models. It has been shown that role models affect the area and major of study of students in Chile (Altmejd et al., 2020; Barrios Fernández, 2019). Therefore, role models seem important for students to climb the mobility ladder, as they will help students choose the most profitable career paths.

Table 3—Areas of Study of Students, and proportion that reaches Richest 10%

	q1	q2	q3	q4
Agriculture	17%	19%	14%	30%
Sciences	29%	39%	40%	45%
Social Sciences	23%	29%	27%	45%
Education	15%	16%	14%	19%
Humanities	0%	7%	7%	15%
Engineering	31%	36%	39%	56%
Health	23%	27%	32%	40%
Services	12%	12%	16%	20%

Table 4—Areas of Study of Students, and proportion of total graduates

	q1	q2	q3	q4
Agriculture	2%	1%	2%	2%
Sciences	4%	5%	5%	4%
Social Sciences	22%	21%	22%	31%
Education	33%	31%	28%	16%
Humanities	2%	2%	3%	5%
Engineering	13%	14%	15%	18%
Health	20%	22%	22%	22%
Services	4%	3%	3%	2%
Total	100%	100%	100%	100%